Interprofessional collaborative practice in the physiotherapy private practice setting: A mixed methods study in northern Queensland.

Thesis submitted by:

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Abstract

The aim of this project was to characterise the practices, experiences and impacts of interprofessional collaborative practice (IPCP) among physiotherapy private practitioners, with the intention of identifying specific strategies to optimise its effectiveness. In Australia, physiotherapists working in private practice account for an estimated 70% of the total physiotherapy workforce. Many physiotherapy private practitioners work in small businesses, where the practice is either run by individual sole traders or only staffed by clinicians with a professional background in physiotherapy, without the inclusion of health practitioners from other professions. The nature of this service delivery model may restrict opportunities for physiotherapists to engage in IPCP.

The research design was informed by the desire to understand the diverse and nuanced experiences of physiotherapists working in private practice, acknowledging that their perceptions of IPCP are influenced and shaped by their unique social and clinical environments. An explanatory sequential mixed methodology was used to guide the practical integration of quantitative and qualitative approaches and capture a wider range of perspectives and experiences. Data collection included an online survey with responses from 49 physiotherapists within the Northern Queensland Primary Health Network region, followed by individual semi-structured interviews with 28 physiotherapists and 64 hours of observations at 10 private practice facilities. The data set provided rich and detailed descriptions about IPCP involving physiotherapy private practitioners in regional and rural Australian locations.

The survey found that only a small proportion of physiotherapy private practitioners (n = 14; 29%) participated in IPCP daily and less than one-third (n =15; 31%) attended formal, multiprofessional face-to-face planned meetings as part of their routine clinical practice. However, despite a low self-reported frequency of interprofessional activity, most physiotherapists indicated a moderate to high degree of satisfaction associated with their interactions with health practitioners from different professional backgrounds. The subsequent qualitative phase revealed that physiotherapists value IPCP because it delivers superior client outcomes and fosters a positive work environment. However, physiotherapists also claimed that IPCP can unnecessarily over-complicate clinical management in certain circumstances, potentially contributing to poor patient outcomes.

Close physical proximity of physiotherapists and health practitioners from different professions was perceived as a key facilitator of IPCP. Physiotherapists employed in multiprofessional private practice facilities reported having greater ability to work collaboratively than those working as sole traders or in monoprofessional clinics. Co-location of health services was a convenient means of enabling IPCP,

and the interior architecture of private practice facilities was observed to contribute to increased informal interaction between team members from multiple health professional backgrounds at some study sites. Physiotherapists also recognised technological innovations and the management of people with chronic and complex conditions as important facilitators of IPCP. However, several barriers to IPCP were identified including competition for clientele, personal attitudes, time constraints, geographical location and funding scheme rules.

Physiotherapists working in private practice need to navigate a delicate balance between prioristing person-centred care and promoting effective IPCP to produce positive patient outcomes, with the need to remain financially viable as a business entity. Supporting robust and sustainable models of IPCP in physiotherapy private practice requires a comprehensive strategy that addresses systemic funding and compensation issues, enhances digital communication systems and optimises interprofessional education and training.

List of Publications Included in the Thesis

Seven publications in peer-reviewed journals have been published. The published papers are attached in Appendices 1, 2, 3, 4, 5, 6 and 7.

Seaton, J. A., Jones, A., Johnston, C. L., & Francis, K. (2020b). Development of a survey instrument to explore the characteristics of Australian physiotherapy private practitioners' interprofessional interactions. *The Internet Journal of Allied Health Sciences and Practice, 18*(4), 2. https://doi.org/10.46743/1540-580X/2020.1919

Seaton, J. A., Jones, A. L., Johnston, C. L., & Francis, K. L. (2020a). The characteristics of Queensland private physiotherapy practitioners' interprofessional interactions: A cross-sectional survey study. *Australian Journal of Primary Health*, *26*(6), 500–506. https://doi.org/10.1071/PY20148

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Seaton, J., Jones, A., Johnston, C., & Francis, K. (2024a). Physiotherapy private practitioners' opinions regarding interprofessional collaborative practice: A qualitative study. *Journal of Interprofessional Care*, *38*(1), 10–21. https://doi.org/10.1080/13561820.2023.2221687

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physiotherapy private practitioners. *Australian Journal of Primary Health*, *30*(1), PY23175. https://doi.org/10.1071/PY23175

List of Conference Presentations Resulting from Thesis

Two presentations based on work from this thesis have occurred at physiotherapy conferences.

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2019, May 10–13). *Allied health professionals' perceptions of interprofessional collaboration in primary health care: An integrative review*. [Poster presentation]. World Confederation for Physical Therapy Conference: Congress 2019, Geneva, Switzerland.

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2023, October 5–7). *The effects attributable to interprofessional collaborative practice: A physiotherapy private practitioner perspective*. [Poster presentation]. Australian Physiotherapy Association Conference: Ignite 2023, Brisbane, Australia.

One presentation based on work from this thesis has been accepted for an upcoming allied health conference.

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2024, October 21–23). *Facilitators of effective interprofessional collaborative practice for physiotherapy private practitioners in regional and rural Queensland*. [Conference presentation]. 15th National Rural and Remote Allied Health Conference: Going the Distance: Thriving in Rural and Remote Communities, Mildura, Australia (abstract accepted).

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Appendix 3: Peer-reviewing publication – ‘The characteristics of Queensland private physiotherapy practitioners’ interprofessional interactions: A cross-sectional survey study’

Appendix 4: Peer-reviewed publication – ‘Physiotherapy private practitioners’ opinions regarding interprofessional collaborative practice: A qualitative study’

Appendix 5: Peer-reviewed publication – ‘Facilitators of effective interprofessional collaborative practice for physiotherapy private practitioners: An interpretive descriptive study’

Appendix 6: Peer-reviewed publication – ‘The barriers to interprofessional collaborative practice: Perspectives from Australian physiotherapy private practitioners’

Appendix 7: Peer-reviewed publication – ‘Promoting effective interprofessional collaborative practice in the primary care setting: Recommendations from Queensland physiotherapy private practitioners’

Appendix 8: Survey instrument used in the quantitative phase

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Appendix 16: Published article in the Australian Physiotherapy Association’s *InMotion* magazine

Abbreviations

ADHA	Australian Digital Health Agency
AHP	Allied health professional
AHPA	Allied Health Professions Australia
AHPRA	Australian Health Practitioner Regulation Agency
AIHW	Australian Institute of Health and Welfare
APA	Australian Physiotherapy Association
APC	Australian Physiotherapy Council
AUD	Australian Dollar
CCAT	Crowe Critical Appraisal Tool
CDM	Chronic Disease Management
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CS	Complexity Science
CTP	Compulsory Third Party
DoHAC	Department of Health and Aged Care
EHR	Electronic health record
EP	Exercise physiologist
EPC	Enhanced Primary Care
FFS	Fee-for-service
GP	General practitioner
HE	Hawthorne effect
HPAC	Health Professions Accreditors Collaborative
HREC	Human Research Ethics Committee
ID	Interpretive Description
IPCP	Interprofessional Collaborative Practice
IPE	Interprofessional Education
IPEC	Interprofessional Education Collaborative
JCU	James Cook University
MBS	Medicare Benefits Schedule
MHR	My Health Record
NDIS	National Disability Insurance Scheme
NHMRC	National Health and Medical Research Council
NQPHN	Northern Queensland Primary Health Network
OOP	Out-of-pocket
OT	Occupational therapist
PBA	Physiotherapy Board of Australia
MHR	Professional development
PHC	Primary health care
PHI	Private health insurance
RTA	Reflexive thematic analysis
SD	Standard deviation
WHO	World Health Organization

Chapter 1. Introduction

1.1 Chapter overview

This introduction provides a background on interprofessional collaborative practice (IPCP) in the physiotherapy private practice setting in Australia. The chapter begins by introducing the concept of IPCP, discussing its importance for patient care and the need for effective teamwork among health practitioners from various professional backgrounds. The chapter then situates physiotherapy within the allied health professions and acknowledges the significant role and growing presence of the physiotherapy profession within the broader Australian health care landscape. It outlines the wide range of professional settings that physiotherapists work within, including hospitals, community health centres, residential aged care facilities and sporting organisations, while noting the significant shift towards an increasing proportion of physiotherapists working in private practice. The chapter describes the significance of this research and states the thesis aims and objectives. It concludes by summarising the content of the chapters presented in the thesis.

1.2 Background

1.2.1 Interprofessional collaborative practice in health care

Interprofessional collaborative practice is widely recognised as a fundamental component of high-quality health care (World Health Organization (WHO), 2010). Collaborative practice occurs when multiple health care practitioners from different professional backgrounds work with patients and their families to enhance the quality of care (WHO, 2010). This approach leverages the diverse expertise of different health professionals and is centred around patients' needs, preferences and values (Delaney, 2018; WHO, 2010). Effective IPCP leads to improved health care access, quality and patient safety (D'Amour & Oandasan, 2005). For health practitioners, working in an interprofessional context supports shared learning and mutual respect among professions, contributing to job satisfaction and professional development (PD; Reeves et al., 2017b; Schot et al., 2020). However, operationalising IPCP involves navigating complex challenges, including the need to overcome professional silos, addressing hierarchal dynamics, developing effective communication strategies and ensuring alignment of goals across different health professionals (McInnes et al., 2015; Schot et al., 2020). The term 'professional silo' refers to the phenomenon where health practitioners work within the confines of their specific professions without significant interaction or collaboration with clinicians from other professions (Gum et al., 2020; Khalili et al., 2013). This isolation can prevent the sharing of knowledge and perspectives necessary for comprehensive patient care. Successful IPCP requires not only organisational support, but also a cultural shift within individual health professions towards valuing collaborative practice (Reeves et al., 2017b).

Calls for IPCP emerged largely because of workforce shortages experienced in health care in the 1970s (WHO, 1978). Beyond the immediate benefits to patients and practitioners, IPCP is seen as a strategic approach to address broader challenges within the health care system, such as inefficiencies, resource constraints and gaps in care (Green & Johnson, 2015; WHO, 2010). Today, the shift towards an integrated and person-centred interprofessional care model in health care is imperative to meet the complex care needs of an ageing population and address the increased community prevalence of chronic conditions (WHO, 2015). Interprofessional teams have demonstrated their ability to contribute to the cost-effectiveness of health delivery by reducing duplication and redundancies, optimising resource use, streamlining care processes and enhancing the continuity of care (Karam et al., 2018; Reeves et al., 2017b).

Understanding IPCP requires a clear grasp of the terminology and concepts used in its discussion. It is therefore crucial to delineate the key terms and central concepts regarding IPCP. The issues of conceptual confusion arising from multiple definitions of IPCP, and the varied terminologies used to describe similar or overlapping concepts have been extensively reported (Goldman et al., 2009; Reeves et al., 2011). Some definitions emphasise the processes of collaboration, such as communication, coordination, integration of services (Castañer & Oliveira, 2020), while others focus on the outcomes of collaboration, including improved health outcomes and enhanced patient care (San Martin-Rodriguez et al., 2008). These definitions provide a solid foundation for understanding IPCP, but the effectiveness and implementation of collaborative work is influenced by multiple factors, including the composition of the team, the context of care and the underlying support systems (Reeves et al., 2010).

This thesis adopts the WHO (2010) definition of IPCP, which explains IPCP as “a situation when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers and communities to deliver the highest quality of care across settings” (p.13). The importance of examining interprofessional interactions is also recognised as distinct but complementary to IPCP. These interactions encompass both formal and informal exchanges between practitioners from different professional backgrounds. Although they may not always constitute structured collaboration, interprofessional interactions represent the foundational elements of IPCP, providing valuable insights into how collaborative practices evolve over time. Exploring these interactions is particularly relevant in diverse healthcare settings, such as physiotherapy private practice, where opportunities for fully integrated collaborative practice may be limited.

The varying uses of the prefixes ‘multi-’, ‘inter-’ and ‘trans-’ often interchangeably also adds to conceptual misunderstandings regarding IPCP in both academic and clinical settings (Mahler et al.,

2014). Each of these prefixes can imply different levels of integration and cooperation among health care professionals (Mahler et al., 2014; Reeves et al., 2011). For example, multiprofessional teams have been characterised as ones with a hierarchy, where professional identities supersede team identity, and members make autonomous decisions without significant collaboration (Firth-Cozens, 2001). The emphasis on hierarchy within multiprofessional teams can contribute to power imbalances, where certain professions dominate decision-making processes, marginalising the contributions of other team members and limiting the team's ability to benefit from the diverse expertise of its members (D'Amour & Oandasan, 2005). A multiprofessional approach can therefore lead to siloed care, where each health professional's contribution is made without a comprehensive understanding of the patient's overall needs (Firth-Cozens, 2001). Although multiprofessional work is a step toward a more collaborative environment, it lacks the active engagement necessary for optimising patient care (Reeves et al., 2010). Collaborative practice requires a shift from working in parallel to working together in an integrated manner, where shared decision-making and a unified team identity are emphasised (Reeves et al., 2010; WHO, 2010). Achieving effective IPCP requires more than a shift toward collaborative decision-making. It also requires changes to team structures and targeted efforts to address the cultural and educational factors that reinforce professional siloing (Gilbert et al., 2010).

The distinction between 'profession' and 'discipline' is another important but often overlooked consideration in discussions about IPCP. The term 'profession' generally refers to a specific occupational group that has a distinct role within the health care system, characterised by specialised education, a body of knowledge, standards for entry and a regulatory framework (D'Amour & Oandasan, 2005). In contrast, 'discipline' can refer to an academic discipline or a field of study and practice within a profession, such as the various specialities within medicine (for example, cardiology, anaesthetics, orthopaedics). This distinction is crucial because it highlights the complexity within professions themselves and the potential for both intraprofessional and interprofessional collaboration. The shift away from terms such as 'multidisciplinary' or 'interdisciplinary' towards 'interprofessional' reflects a growing understanding that emphasises the importance of integrating knowledge and skills from distinct professions to improve patient care and health outcomes (Interprofessional Education Collaborative (IPEC), 2016).

Interprofessional collaborative practice in health care can occur within organisations (internal collaboration), as well as between organisations (external collaboration) and can vary across both contexts (D'Amour et al., 2008; Morgan et al., 2015; Schot et al., 2020). Internal IPCP involves health practitioners from different professions within the same organisation working together towards common goals, such as various clinicians in a hospital setting coordinating a patient's discharge plan (McLaney et al., 2022). This form of collaboration is often facilitated by organisational policies, shared goals and a unified governance structure. External IPCP occurs between health care

professionals working across different organisations or settings (Xyrichis & Lowton, 2008). This type of collaboration is essential for ensuring continuity of care, particularly for patients with complex needs that require multiple health services or transitions between various settings. Mechanisms that support communication and coordination across organisational boundaries are necessary to enable external IPCP. However, challenges to external IPCP include differences in organisational cultures, policies and practices, as well as logistical issues related to communication and information sharing (Brown et al., 2011). Both internal and external IPCP are essential for providing comprehensive, continuous and person-centred health care (Reeves et al., 2017b; WHO, 2010).

Successful IPCP extends beyond merely assembling health practitioners from different professions (Szafran et al., 2018). It involves a deeper level of engagement, characterised by shared goals, equality, shared resources and collective accountability (Canadian Interprofessional Health Collaborative, 2010). These aspects highlight the complexity of achieving genuine IPCP and reject the misconception that physical co-location is a prerequisite condition for effective collaboration. This assertion that IPCP does not depend on, or require, physical co-location is increasingly relevant in the digital age. Technological advancements, particularly telehealth and electronic communication platforms, have facilitated new forms of collaboration that transcend traditional boundaries, allowing for real-time communication across geographical distances and necessitating new skills for effective IPCP (Barr et al., 2017). These innovations have enabled IPCP across different settings, enhancing access to care and enabling a continuity of care that would be challenging in a solely physical collaborative model (Barr et al., 2017).

1.2.2 Physiotherapy practice in Australia

Australia's allied health workforce has experienced significant growth in recent years (Australian Institute of Health and Welfare (AIHW), 2024a). In the period between 2013 and 2022, the number of allied health professionals (AHPs) grew from 108,700 to 180,900, an increase of approximately 65% (AIHW, 2024a). Physiotherapy represents one of the largest allied health professions in Australia, accounting for more than 40,000 qualified practitioners (Australian Health Practitioner Regulation Agency (AHPRA), 2023). Registration with the AHPRA, in partnership with the Physiotherapy Board of Australia (PBA), is required to practise as a physiotherapist in Australia (PBA & Physiotherapy Board of New Zealand, 2023). This regulatory framework ensures that all practising physiotherapists meet national standards for education, training and professional conduct.

The registration process involves meeting specific educational requirements, typically a university degree in physiotherapy that is accredited by the Australian Physiotherapy Council (APC) and complying with the PBA's registration standards, including areas such as criminal history, professional indemnity insurance arrangements and continuing professional development (APC,

2021). Registration must be renewed annually and it is a legal requirement for anyone using the title ‘physiotherapist’ or practising physiotherapy in Australia (PBA & Physiotherapy Board of New Zealand, 2023).

Registration standards established by the PBA reflect an implicit value placed on IPCP as part of broader professional expectations. For example, the PBA’s requirements for continuing professional development encourage physiotherapists to engage in activities that promote collaborative and person-centred care (PBA, 2023). Similarly, the accreditation standards for physiotherapy programs emphasise the importance of preparing graduates to work effectively in interprofessional teams (APC, 2021). These regulatory requirements and accreditation criteria demonstrate that IPCP is not only a professional expectation but also a foundational aspect of physiotherapy education and practice. However, despite these regulatory and accreditation priorities, research indicates that IPCP remains inconsistently operationalised across various health care settings, particularly in contexts where formal interprofessional structures are less common.

Australian physiotherapists are recognised for their expertise in human anatomy and movement (Australian Physiotherapy Association (APA) & Nous Group, 2020). They work with people across the lifespan to treat a broad range of health conditions. Physiotherapists are skilled across several core practice areas including musculoskeletal physiotherapy, which addresses conditions like osteoarthritis; cardiorespiratory physiotherapy for heart and lung diseases; neurological physiotherapy for conditions like stroke and Parkinson's disease; gerontological physiotherapy focusing on older adults; paediatric physiotherapy for developmental and congenital conditions in children; women’s health for issues like pregnancy-related pain and incontinence; and sports physiotherapy for injury prevention and rehabilitation in athletes (APA & Nous Group, 2020; PBA & Physiotherapy Board of New Zealand, 2023). They integrate evidence-based treatment strategies with patient education and self-management techniques, aiming to empower individuals to achieve optimal health outcomes (APA & Nous Group, 2020). This holistic and person-centred philosophy underpins the physiotherapy profession and highlights its integral role in promoting health, wellbeing and quality of life across diverse populations.

In Australia, physiotherapists are employed in both the public and private sectors and in metropolitan, regional, rural and remote locations (Department of Health and Aged Care (DoHAC), 2023). Most physiotherapists work primarily as clinicians and practice in a range of settings including hospitals, private practice, community and rehabilitation centres, residential aged care and sporting organisations (DoHAC, 2023). The remainder of Australian physiotherapists assume principal roles in non-clinical areas such as academia and management (AHPRA, 2023; DoHAC, 2023). This diversity

in practice settings highlights the versatile and integral role physiotherapists play in the broader Australian health care system (APA & Nous Group, 2020).

In recent decades, there has been a significant rise in the proportion of Australian physiotherapists working in private practices, which are professional businesses or for-profit organisations that are not directly funded through government departments (DoHAC, 2023; Engel et al., 2014; Perreault et al., 2014b). This shift reflects broader trends in health care delivery and consumer preference for accessible, specialised services in the community (Pretorious et al., 2016). Estimated to be less than one-third of all physiotherapists in 1975 (Anderson et al., 2005), those working in private practice are now reported to account for 70 percent of the total physiotherapy workforce in Australia (AHPRA, 2023; DoHAC, 2023). The expansion has been influenced by several factors, including an increase in public awareness of physiotherapy benefits, higher demand for preventive and rehabilitative health services and changes in health financing arrangements (APA & Nous Group, 2020). Since 2013, the physiotherapy private practice industry has grown from being a $1.5 billion (AUD) industry made up of approximately 4,200 businesses (APA & Nous Group, 2013) to a near $2.2 billion (AUD) industry made up of more than 7,000 businesses (APA & Nous Group, 2020). This growth demonstrates the sector's economic vitality and its importance in meeting the evolving health needs of Australians.

Within the Australian health care landscape, physiotherapy services in private practice are predominantly administered to consumers via private health insurance (PHI) packages in a fee-for-service (FFS) environment (APA & Nous Group, 2020). These services provide PHI policy holders with the flexibility to choose care options that best meet their individual needs (Duckett & Nemet, 2019). However, beyond this income stream, physiotherapy private practitioners access revenue through the Australian Government's Medicare Benefits Schedule (MBS), workers' compensation and motor vehicle accident schemes, the Department of Veterans' Affairs, the National Disability Insurance Scheme (NDIS) and direct out-of-pocket (OOP) payments (APA & Nous Group, 2020). This broad range of funding sources supports the economic stability of physiotherapy private practice but also ensures that a variety of physiotherapy services are available to meet the health care needs of a large segment of the Australian population.

The predominant service delivery model in the Australian physiotherapy private practice setting is the small-scale monoprofessional clinic (AHPRA, 2023; DoHAC, 2023) This business model is characterised by its focused and personalised approach to patient care and enables physiotherapists to develop strong, one-on-one relationships with their clients to ensure tailored treatment plans. However, employing only one professional group or relying on a sole practitioner for care may inadvertently reinforce professional silos within the health care sector (King & Shaw, 2022).

Although this model may be efficient for administrative purposes and potentially enhancing patient-practitioner rapport, it might limit opportunities for IPCP.

1.3 Statement of the problem

Despite the recognised importance of IPCP as a standard of care, there is a paucity of published literature exploring this concept from the perspective of Australian physiotherapists, particularly those working in private practice settings. Given that IPCP is increasingly expected across health care professions and private practitioners constitute approximately 70% of the total physiotherapy workforce in Australia, research in this area is warranted (DoHAC, 2023; WHO, 2010).

A collaborative health workforce has been shown to be more responsive and efficient, improve safety and enhance the quality of care (Reeves et al., 2017b). In formal team-based settings, collaborative practice is most successfully achieved when opportunities for unplanned informal contact and spontaneous interaction with health practitioners from other professions are high (Bennett-Emslie & McIntosh, 1995; Morgan et al., 2015). Subsequently, concerns regarding the feasibility of engaging in IPCP when health practitioners work in isolation from one another, or in clinical settings that do not conform to a formalised team structure have been highlighted (Oandasan et al., 2009; Perreault et al., 2014a; Szafran et al., 2019). When health practitioners work in isolated or non-team-based clinical settings, barriers to IPCP, including lack of time, resources and support from organisational leaders, may be exacerbated (Oandasan et al., 2009).

Despite being introduced as a model of care in the 1970s (WHO, 1978), IPCP remains inconsistently adopted across health care settings. Persistent challenges, including siloed preparatory training, variability in interprofessional education (IPE) programs, and sustainability issues, continue to hinder its full integration into health care systems (Reeves et al., 2017b). Even in contexts where IPE is embedded in higher education curricula, its impact is often limited by systemic barriers such as resource constraints, cultural resistance, and a lack of alignment with real-world practice environments (Khalili et al., 2013; Rodger & Hoffman, 2010; Thistlethwaite et al., 2019). These enduring issues emphasise the continued importance of IPCP research to address gaps in its implementation and sustainability.

In the context of the private health care sector, organisations may also adopt a culture that prioritises productivity and profitability over IPCP, which could impact the attitudes and values of health practitioners working in these settings towards IPCP. For instance, an emphasis on productivity and profitability in private practice facilities may lead to a lack of investment in resources for IPCP, such as interprofessional training initiatives, team-building activities and communication technologies

(Perreault et al., 2014a). This cultural prioritisation could create an environment where collaborative practices are seen as secondary to financial outcomes, further exacerbating barriers to IPCP. Additionally, without formal support for IPCP, practitioners may struggle to allocate time for collaborative activities, such as case discussions or joint care planning, which are critical for effective teamwork. Over time, these factors may lead to a normalisation of siloed practices within the private health care sector, reinforcing a cycle that limits the adoption and sustainability of IPCP in these settings.

Physiotherapists are crucial members of collaborative models of care due to their skills in addressing issues associated with an increased chronic disease burden, an ageing population, rapidly rising health care costs and human resource shortages (Adams et al., 2014; Sangaleti et al., 2017). Physiotherapy private practitioners make up an estimated 70% of all registered physiotherapists in Australia, yet most research documenting how IPCP is influenced and operationalised has emanated from acute inpatient settings where formalised team environments are common and predominately focused on perspectives from the medical and nursing professions (Etherington et al., 2021; Paradis et al., 2014; Vatn & Dahl, 2022). Little is currently known about IPCP from the perspective of physiotherapy private practitioners and effective models of collaborative practice in the physiotherapy private practice setting are ill-defined. Therefore, to inform the development of practical fit-for-purpose strategies which can support sustainable models of IPCP in the Australian physiotherapy private practice setting, a thorough understanding of physiotherapy private practitioners' experiences of IPCP is required. Without this knowledge, efforts to promote IPCP may remain theoretical and fail to translate into actionable frameworks that align with the unique context of physiotherapy private practice in Australia.

1.4 Research aim and objectives

The aim of this research was to characterise the practices, experiences and impacts of IPCP among physiotherapy private practitioners, with the intention of identifying specific strategies to optimise its effectiveness.

Objectives:

1. Describe the characteristics of physiotherapy private practitioners' interprofessional interactions, including the frequency, modes of communication and level of satisfaction associated with these interactions.
2. Explore the perceptions of physiotherapy private practitioners regarding the benefits and disadvantages associated with IPCP to understand its positive and negative effects.

3. Identify and analyse the facilitators of, and barriers to IPCP, as experienced by physiotherapy private practitioners.
4. Gather and synthesise recommendations from physiotherapy private practitioners to formulate strategic proposals to optimise and improve the effectiveness of IPCP.

1.5 Positioning the researcher

My approach to this research was shaped by my experience as a physiotherapist in both the public and private health care sectors in metropolitan, regional, rural, and remote Australia. In various roles across a range of clinical settings, I witnessed the value of IPCP in addressing gaps in patient care and improving health outcomes. I also saw how isolated, single-profession approaches could limit the effectiveness of care delivery. These experiences emphasised the potential of collaboration to create more coordinated and comprehensive care models, motivating the focus of this study on IPCP within the Australian physiotherapy private practice setting.

My work as a physiotherapist in diverse clinical settings helped me understand the barriers to effective IPCP, including the persistence of professional silos, hierarchical dynamics, and conflicting organisational priorities. Observing the unique health challenges faced by communities in regional, rural, and remote Australia highlighted the specific obstacles these contexts present for implementing IPCP. I saw that successful IPCP requires tailored strategies that account for the distinct needs of each setting. These insights shaped my understanding of how IPCP might differ across various environments and informed the foundation of this thesis.

As a clinical educator and university lecturer at James Cook University (JCU), I taught interprofessional subjects to allied health students, which deepened my understanding of the complexities involved in building and sustaining effective interprofessional relationships. This experience highlighted the need for educational and cultural shifts within individual health professions to support IPCP. It also helped me recognise how IPCP principles are taught to future health professionals and how these concepts may be applied differently in practice. This reinforced my awareness of the gap between academic learning and real-world application.

I realised that my strong belief in the value of IPCP, developed through my varied experiences, could introduce bias into my research. To address this, I adopted a reflexive approach throughout the study, remaining aware of my perspectives and ensuring that I represented the voices of physiotherapy private practitioners as accurately as possible. This reflexivity was essential to ensure the findings were balanced and credible, reflecting the participants' experiences rather than my assumptions.

By conducting this body of work, my intention was to contribute insights that could enhance IPCP and improve patient care outcomes. My interest in bridging the gap between research and practice led me to focus on the experiences of physiotherapy private practitioners, a group whose perspectives are often overlooked in IPCP literature. Through this study, I aimed to provide insights that could inform policy, education, and practice, supporting the development of robust models of IPCP that align with the realities of the physiotherapy private practice context. I worked to ensure that my interpretations remained true to the participants' lived experiences.

1.6 Thesis organisation and overview

This thesis is organised into six chapters. An outline of each chapter is provided below:

Chapter 1. Introduction: This chapter establishes the foundation for the research by introducing the concept of IPCP in health care and highlighting its importance for physiotherapy private practice in an Australian context. It begins with a discussion of IPCP, defining its key elements, benefits, and the challenges to its implementation. The chapter then provides an overview of the physiotherapy profession in Australia, describing the regulatory framework, main areas of practice, and growth of the private practice workforce. An existing gap in the literature is identified regarding how IPCP is operationalised in physiotherapy private practice, which informs the research aim and objectives. The chapter concludes by situating the researcher, explaining how their professional background has influenced the approach to this study.

Chapter 2. Literature Review: This chapter synthesises available literature regarding the perceptions of AHPs towards IPCP within primary health care (PHC) settings. Acknowledging the scarcity of literature specifically addressing physiotherapists in private practice settings, the review strategically broadens its scope, incorporating six allied health professions in addition to physiotherapy, and extending the exploration to both public and private health care sectors. This approach ensured a thorough understanding of the existing knowledge landscape, setting a solid foundation for the subsequent investigation into the unique experiences of Australian physiotherapy private practitioners. The literature review was initially conducted in 2018 and published in the *Journal of Interprofessional Care* on 16 April 2020 (Appendix 1). The chapter presented in the thesis represents an updated version of the published paper, including a refined and updated search strategy to include relevant literature from June 2018 through February 2024.

Chapter 3. Methodology and Methods: This chapter is an unpublished methods chapter that presents the research design, encompassing the philosophical underpinnings and theoretical frameworks that guide the study, alongside the methods of data collection and analysis. Utilising a

two-phase mixed methods approach, the study begins with a quantitative survey to collect data on the interprofessional interactions of physiotherapy private practitioners. The findings from this survey inform the second phase, a qualitative inquiry employing interpretive description (ID) to examine physiotherapists' experiences IPCP within their specific practice contexts. The chapter concludes with a discussion of research reflexivity, rigour and the ethics of this work.

Chapter 4. Phase One: Quantitative Findings: This chapter comprises two published manuscripts that address objective 1. The chapter begins by detailing the development of a survey instrument that can be used to explore the characteristics of physiotherapy private practitioners. This section is based on an article published in the *Internet Journal of Allied Health Sciences and Practice* on 13 October 2020 (Appendix 2). The chapter then describes the findings derived from disseminating the survey instrument to physiotherapy private practitioners in the chosen research setting. The characteristics of participants' interprofessional interactions are documented, as well as their experiences and perceptions regarding IPCP. This section is based on an article published in the *Australian Journal of Primary Health* on 26 November 2020 (Appendix 3).

Chapter 5. Phase Two: Qualitative Findings: This chapter features four published manuscripts that address objectives 2, 3 and 4. The chapter extends on the new knowledge presented in Chapter 4 to qualitatively explore the views and experiences of Australian physiotherapy private practitioners. The chapter begins by presenting information pertaining to physiotherapy private practitioners' perceived benefits and disadvantages of IPCP. The findings presented in this section address objective 2 and were published in the *Journal of Interprofessional Care* on 8 June 2023 (Appendix 4). The chapter then provides an in-depth analysis of the facilitators of, and barriers to, IPCP among physiotherapy private practitioners, addressing research objective 3. The paper reporting on the facilitators of IPCP was published in the *Journal of Interprofessional Education & Practice* on 14 July 2023 (Appendix 5) and the paper reporting on the barriers to IPCP was published in the *Journal of Research in Interprofessional Practice and Education* on 9 November 2023 (Appendix 6). The chapter concludes by presenting strategies endorsed by Australian physiotherapy private practitioners to enhance IPCP. These insights provide a firm basis for recommendations to optimise IPCP in the physiotherapy private practice setting in Australia and other similar contexts. This section addresses objective 4 and is based on an article published in the *Australian Journal of Primary Health* on 5 February 2024 (Appendix 7).

Chapter 6. Discussion and Conclusion: This chapter synthesises the key findings from the quantitative and qualitative study phases and highlights how this body of work advances our understanding of IPCP in physiotherapy private practice in the Australian context. A comprehensive discussion on the implications of the main findings for physiotherapy practice and education is

provided. The chapter then identifies the limitations of the research and considers how they may influence the interpretation of the findings. It also suggests directions for future research and policy that may further support and optimise IPCP in the physiotherapy private practice setting in Australia. The chapter concludes with a comprehensive list of references cited throughout the thesis and appendices that have been referred to in various chapters.

1.7 Chapter summary

This chapter introduced the study and set the scene for the research reported in this thesis. The research aim and objectives were detailed with a synopsis of the background to the study that justifies the significance of the research. The chapter also acknowledged the influence of the researcher on the research process and provided an overview of the thesis organisation. In the next chapter, the scholarly literature that has theoretically, conceptually and empirically informed this study is reviewed.

Chapter 2. Literature Review

2.1 Chapter overview

The purpose of Chapter 1 was to introduce the significance of the study along with the research aim and objectives. It established the context for the study and current knowledge about the substantive area of inquiry, providing background information and setting the scene for the subsequent inquiry process. An integrative literature review was undertaken in 2018 to synthesise the available evidence on the perceptions of AHPs regarding IPCP in PHC settings. The inclusion of other professional groups, in addition to physiotherapists, was warranted due to insufficient literature exclusively focusing on physiotherapists. The review also encompassed both public and private PHC settings to provide a comprehensive overview of the existing evidence.

Given the time elapsed since the original review and to ensure the relevancy of the findings, an update to this review was undertaken in February 2024. This chapter reports on the original review and integrates the findings from the updated literature search, which included studies published from June 2018 to February 2024.

The key themes identified from the review are presented and discussed in this chapter. The findings indicate that there is limited evidence emerging from private PHC settings, highlighting a gap in the current research. The discussion explores the implications of the findings for IPCP in PHC more broadly, while suggesting their potential relevance to physiotherapy private practice in an Australian context. A peer-reviewed publication was produced from the initial review, which can be found in Appendix 1.

2.2 Allied health professionals' perceptions of interprofessional collaborative practice in primary health care: An integrative review

2.2.1 Introduction

Interprofessional collaborative practice is a complex and dynamic phenomenon defined by the relationships and interactions that occur between health practitioners from various professional backgrounds to deliver safe, high-quality patient care (Reeves et al., 2010; WHO, 2010). Interprofessional collaborative practice is an expected standard of practice for health practitioners and is a widely acknowledged solution to facilitate more effective and appropriate patient care (Bookey-Bassett et al., 2017; WHO, 1978). Responsibility, accountability, coordination, communication, cooperation, assertiveness, autonomy, mutual trust and respect are deemed essential for successful IPCP in health care (Bridges et al., 2011). Interprofessional collaborative practice can have positive effects on both the health care system and health outcomes (Reeves et al., 2017b). Interprofessional collaborative practice has been shown to be an integral component in the provision of cost-effective health care and contributes to superior patient outcomes and enhanced patient and practitioner satisfaction (Reeves et al., 2017b). Despite the documented benefits of IPCP, it remains a variably understood concept and difficult to implement in some health care settings, including PHC (Karam et al., 2018; Reeves et al., 2018; Xyrichis & Lowton, 2008).

2.2.1.1 Literature review aim

The aim of this integrative review was to synthesise the available evidence on the perceptions of AHPs regarding IPCP in PHC.

2.2.2 Background

Allied health professionals are key contributors to the PHC workforce, providing prevention, management, and rehabilitation services for a wide range of health conditions (Allied Health Professions Australia (AHPA), 2023). As first-contact practitioners, AHPs play a critical role in delivering patient-centred care across diverse settings, addressing issues such as injury, acute health episodes, and long-term conditions (AHPA, 2023). Within PHC, AHPs frequently work with people who have chronic conditions, which require care that is both integrated and responsive to their high and complex needs (AIHW, 2024b; Van Dongen et al., 2016). An increasing prevalence of chronic illness is creating significant burden for patients, families and health care systems globally (Moore, 2018). Interprofessional collaborative practice ensures that multiple PHC practitioners from various professional backgrounds bring their unique knowledge, skills, and expertise together to deliver safe, high-quality, and cost-effective care for individuals with chronic illness (Green & Johnson, 2015; Supper et al., 2015; Xyrichis & Lowton, 2008).

Primary health care services are offered within both the public and private health care sectors in settings such as general practice, community health centres and allied health clinics (Reddy, 2017). Although the majority of people access PHC through a general practitioner (GP), these services may also be provided by nursing and allied health professions (Lizarondo et al., 2016; McInnes et al., 2015). However, an overwhelming shortage of GPs is of international concern to the PHC workforce, particularly in regional, rural and remote areas (Grover & Niecko-Najjum, 2013; Kamien & Cameron, 2006). As first-contact PHC practitioners, AHPs are able to assess, treat and manage patients without a medical referral (AHPA, 2023; Stute et al., 2018). Consequently, AHPs have significant potential to reduce the burden on GPs with expertise in their relevant fields (Salmon et al., 2017). The complex health care needs of patients with chronic illness often require specialised skills that medical practitioners may not possess and may be more appropriately provided by AHPs (APA, 2022).

The features of effective IPCP in PHC are poorly defined in the literature. Primary health care differs from other health care settings with regard to organisational structure and daily service delivery (Duckett & Willcox, 2015; Keleher & MacDougall, 2016). Unlike secondary and tertiary settings, such as hospitals, PHC is largely affected by the issues of location and time (Oandasan et al., 2009). Subsequently, health practitioners working in PHC might not share the same space or maintain face-to-face contact with members of their team and may only have limited opportunity for formal meetings to discuss specific patient cases (Mulvale et al., 2016).

Within the private health care sector, a common allied health service delivery model is a small monoprofessional clinic (DoHAC, 2023). That is, a facility whereby an AHP may be the sole practitioner, or a facility only employing practitioners from one allied health profession, thus limiting occasions for interprofessional interactions. Although larger allied health practices that are co-located with other health services are becoming increasingly common, AHPs working in PHC, for the most part, continue to operate in monoprofessional practice settings (DoHAC, 2023). The shift toward co-location of multiple PHC services within the same physical space may offer AHPs increased opportunities for IPCP (Bonciani et al., 2018; Rousseau et al., 2017; Wener & Woodgate, 2016).

Allied health professionals have been described as critical to the success of PHC (AHPA, 2023; Lizarondo et al., 2016). Allied health professionals are encouraged to collaborate with practitioners from diverse health professions to deliver optimal patient care, however there is little published evidence exploring the characteristics of their interprofessional interactions, especially in the PHC setting (D'Amour et al., 2008; Sangaleti et al., 2017; Schot et al., 2020). The experiences of health practitioners regarding IPCP in PHC has attracted previous attention in the literature, however most of this research concerns the professions of medicine and nursing (McInnes et al., 2015; Morgan et al.,

2015; Schadewaldt et al., 2013). The features of IPCP, as perceived by AHPs working in PHC, remain largely unknown and unexplored.

2.2.3 Methods

2.2.3.1 Study design

The framework developed by Whittemore and Knafl (2005) was used to guide this integrative review. This method enables the synthesis and analysis of both quantitative and qualitative research, therefore providing a more holistic picture of the research landscape of a specific topic area (Grant & Booth, 2009). Integrative reviews are particularly suitable in health research, as they can generate answers to more complex questions which health practitioners may encounter in the clinical setting (Whittemore & Knafl, 2005).

2.2.3.2 Search strategy

Original review (January 1989 – May 2018)

A comprehensive literature search was conducted in May 2018 using three electronic databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Ovid Medline and Scopus. To prevent accidental omission of relevant key articles, a manual search of articles published in the *Journal of Interprofessional Care* (inception – May 2018) was also performed. Multiple keyword combinations were used in the search strategy, which was developed in conjunction with the health liaison librarian at JCU (Table 1). Reference lists of included studies were also reviewed to identify additional articles not found during the database search.

Updated review (June 2018 – February 2024)

Following the original integrative review finalised in May 2018, a second comprehensive review of the recent literature was conducted, from January 1989 to February 2024. The search replicated the strategy previously employed, utilising the same electronic databases (CINAHL, Ovid Medline and Scopus), conducting a manual search of the *Journal of Interprofessional Care* and scanning the reference lists of included studies to ensure no relevant articles were missed.

Table 1. Electronic database search strategy.

MEDLINE search strategy	1. (interprofession$ or inter-profession$).tw. 2. (interdisciplin$ or inter-disciplin$).tw. 3. exp interprofessional relations/ 4. exp interdisciplinary communication/ 5. collaborat$.tw. 6. or/ 1-5 7. (chiropract$ or optometr$ or osteopath$ or physiotherapy$ or podiatr$ or psycholog$).tw. 8. "occupational therap$".tw. 9. "physical therap$".tw. 10. "allied health".tw. 11. allied health occupations/ 12. exp occupational therapy/ 13. exp physical therapy/ 14. exp chiropractic/ 15. exp optometry/ 16. exp podiatry/ 17. or/ 7-16 18. 6 and 17 19. "private$ practi$".tw. 20. "private sector".tw. 21. "primary care".tw. 22. "primary health".tw. 23. exp private practice/ 24. exp private sector/ 25. exp primary health care/ 26. or/ 19-25 27. 18 and 26 28. limit 27 to english language 29. limit 29 to systematic reviews 30. 28 not 29 31. limit 30 to journal article
CINAHL search strategy	(SU interprofession*) or (SU interdisciplin*) or (SU collaborat*) or (MH interprofessional relations) AND (SU chiropract*) or (SU "occupational therap*") or (SU optometr*) or (SU osteopath*) or (SU physiotherapy*) or (SU "physical therap*") or (SU podiatr*) or (SU psycholog*) or (SU "allied health") or (MH chiropractic) or (MH occupational therapists) or (MH optometry) or (MH osteopathy) or (MH physical therapists) or (MH podiatry) AND (SU "private* practi*") or (SU "private sector") or (SU "primary health") or (MH "private practice+") AND narrow by language: -english
Scopus search strategy	TITLE-ABS-KEY(interprofession* OR inter-profession* OR interdisciplin* OR inter-disciplin* OR collaborat* AND chiropract* OR "occupational therap*" OR optometr* OR osteopath* OR physiotherap* OR "physical therap*" OR podiatr* OR psycholog* OR "allied health" AND "private* practi*" OR "private sector" OR "primary care" OR "primary health")

2.2.3.3 Study eligibility criteria

Study selection was completed by two reviewers (JS and AJ), who independently scanned the titles and abstracts of citations identified through the search for inclusion in the review. For the purpose of this review, AHPs were defined as those professions listed by both AHPA and the AHPRA. Allied Health Professions Australia is the peak national organisation for AHPs in Australia, representing twenty AHPs (AHPA, 2023), while the AHPRA supports the fifteen National Boards that are responsible for regulating the health professions (AHPRA, 2023). The professions comprised: chiropractic; occupational therapy; optometry; osteopathy; physiotherapy; podiatry; and psychology. Each of the seven allied health professions have been reported in the PHC literature to varying extents, so were deemed appropriate for final inclusion in the review.

To be included in this review, the publication had to:

- Relate to IPCP among AHPs within PHC
- Report on AHPs' perceptions of IPCP in PHC
- Contain participants from at least one allied health profession or more
- Contain original research where primary data collection and analysis was evident
- Be English language research papers published in peer-reviewed journals.

Studies were excluded if:

- They were primarily concerned with evaluation of an IPCP intervention
- They related to IPCP between health practitioners and patients
- They related to IPCP within an IPE and learning context
- Participants included pre-qualified health practitioners (for example, allied health students)
- They were literature reviews, or non-research articles (for example, editorials, dissertations, anecdotes, opinion pieces or commentaries)
- Participants were not working in clearly defined PHC settings.

2.2.3.4 Quality assessment

The Crowe Critical Appraisal Tool (CCAT) was used to assess the methodological quality of included studies. The CCAT was developed as a structured tool for evaluation of health research and has established validity and reliability with high intra-class correlation (Crowe & Sheppard, 2011; Crowe et al., 2011, 2012). The tool consists of eight categorical items: preliminaries; introduction; design; sampling; data collection; ethical matters; results; and discussion (Crowe & Sheppard, 2011). Each categorical item was scored from 0 (no evidence) to 5 (high evidence) and summed to provide a total score for each article that was presented as a percentage (that is, [score/40] x 100). Based on criteria from a previous study (Sznitman & Taubman, 2016), the total score for each paper was considered as

"poor quality" (≤ 50%), "moderate quality" (51–74%) and "high quality" (≥ 75%). Scoring was undertaken independently by two reviewers (JS and AJ) with discrepancies in scores being resolved through discussion. No paper was excluded based on methodological quality (Whittemore & Knafl, 2005).

2.2.3.5 Data abstraction and synthesis

Thematic analysis was undertaken to interpret the large amount of information presented in the papers, as this approach is flexible and allows clear identification of prominent themes (Braun & Clarke, 2006). To facilitate analysis, data were extracted into an evidence table according to authors and location; study aims; methodology; sample characteristics; and main findings. The organisation of qualitative and quantitative data within a single matrix supported the integration of both narrative and statistical evidence (Whittemore, 2005). Tabulated data were viewed by all authors to identify patterns and relationships via an iterative process. Preliminary themes were discussed, compared collectively and agreement reached before one author (JS) categorised them into a final set of themes and sub-themes where were checked and rechecked (Braun & Clarke, 2006).

2.2.4 Results

2.2.4.1 Study selection

Original review (January 1989 – May 2018)

In total, 2,851 articles were identified through the literature search. Of these, 2,846 were found through database search and an additional five articles were identified from a manual search of the *Journal of Interprofessional Care*. After the removal of duplicates, 2,272 papers were excluded based on title and abstract. Of the remaining 70 articles, four were not accessible and were excluded. Full-text analysis was conducted on the remaining 66 articles, resulting in nine studies appropriate for review. An additional three relevant articles were identified following a review of reference lists (Figure 1).

Updated review (June 2018 – February 2024)

The updated comprehensive review of the literature identified 1,812 additional peer-reviewed publications from June 2018 to February 2024. Using the same eligibility process outlined during the original search strategy, the manuscript title and abstract were reviewed for relevance to the inclusion and exclusion criteria and overarching research aim (Seaton et al., 2021). This produced four new publications for inclusion (Figure 2).

2.2.4.2 Study characteristics

Original review (January 1989 – May 2018)

Twelve papers met the inclusion criteria and are presented in Table 2. Six of the reviewed studies were conducted in Canada (Brown et al., 2015; Dufour et al., 2014; Gaboury et al., 2009; Perreault et al., 2014a, 2016a, 2018), two in Australia (Grace & Higgs, 2010; Gray & Orrock, 2014), two in Europe (Doekhie et al., 2017; Myburgh et al., 2014) and one study took place in each of New Zealand (Pullon et al., 2016) and the United Kingdom (Sargeant et al., 2008).

Physiotherapists were represented in seven studies (Doekhie et al., 2017; Dufour et al., 2014; Perreault et al., 2014a, 2016a, 2018; Pullon et al., 2016; Sargeant et al., 2008); three separate studies included chiropractors (Gaboury et al., 2009; Grace & Higgs, 2010; Myburgh et al., 2014) and occupational therapists (OTs; Brown et al., 2015; Doekhie et al., 2017; Sargeant et al., 2008); psychologists were included in two studies (Brown et al., 2015; Doekhie et al., 2017); and osteopaths were participants in one study (Gray & Orrock, 2014). No studies met the inclusion criteria exploring IPCP from the perspectives of optometrists and podiatrists. Five of the included papers did not isolate data to the allied health professions (Brown et al., 2015; Gaboury et al., 2009; Grace & Higgs, 2010; Pullon et al., 2016; Sargeant et al., 2008).

For studies that articulated sample size, there was a large variation, ranging from six to 327 participants. In two studies, details regarding the precise number of participants were difficult to obtain (Grace & Higgs, 2010; Pullon et al., 2016). Participants practised in PHC settings at various stages of development from emerging to established teams and were responsible for delivering a broad range of PHC services. Participants worked across different PHC settings with respect to organisational structure, including monoprofessional, multiprofessional and co-located practice settings.

Figure 1. Flow chart illustrating the selection of papers for the original review (January 1989 – May 2018)

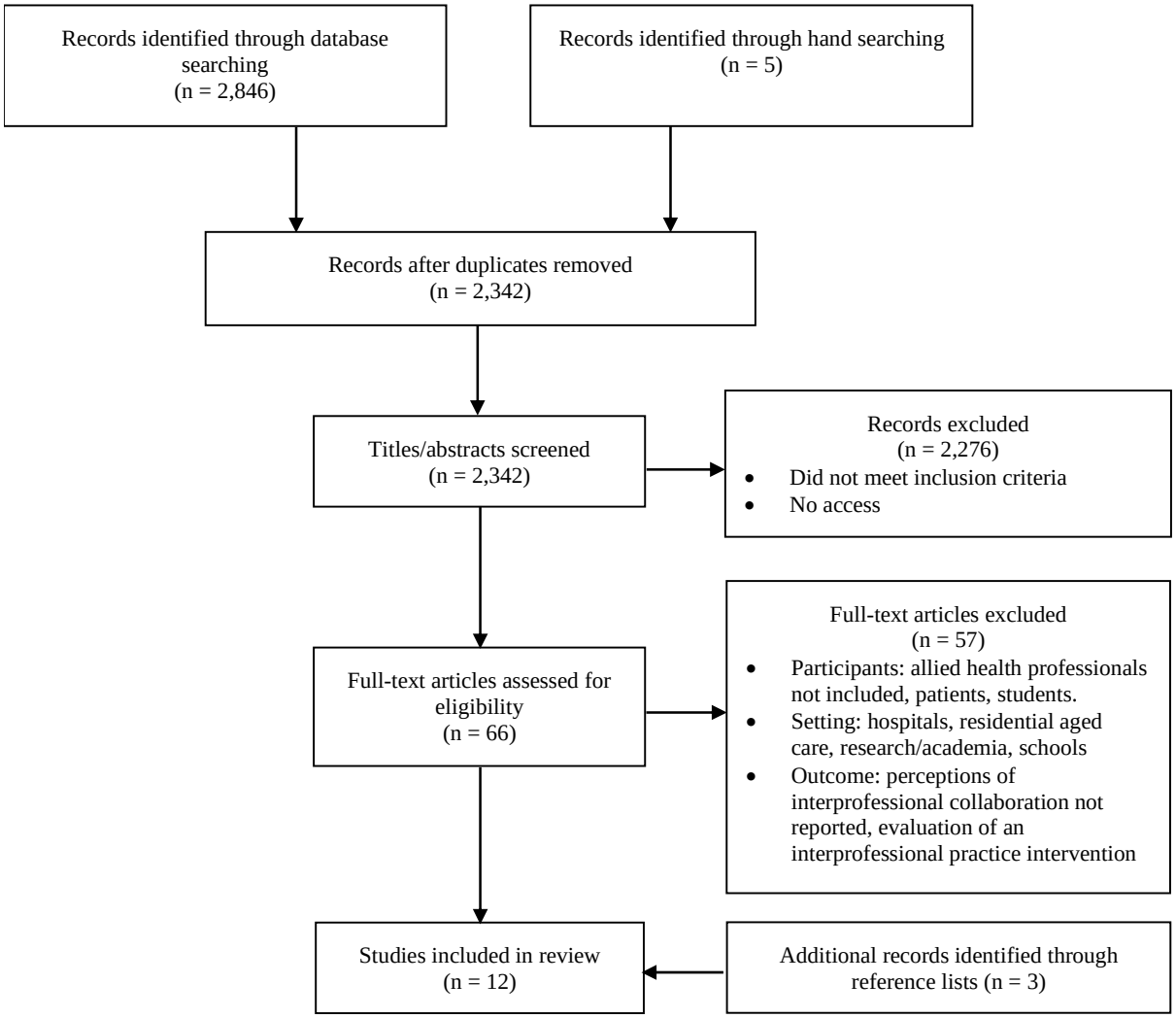


Figure 2. Flow chart illustrating the selection of papers for the updated review (June 2018 – February 2024)

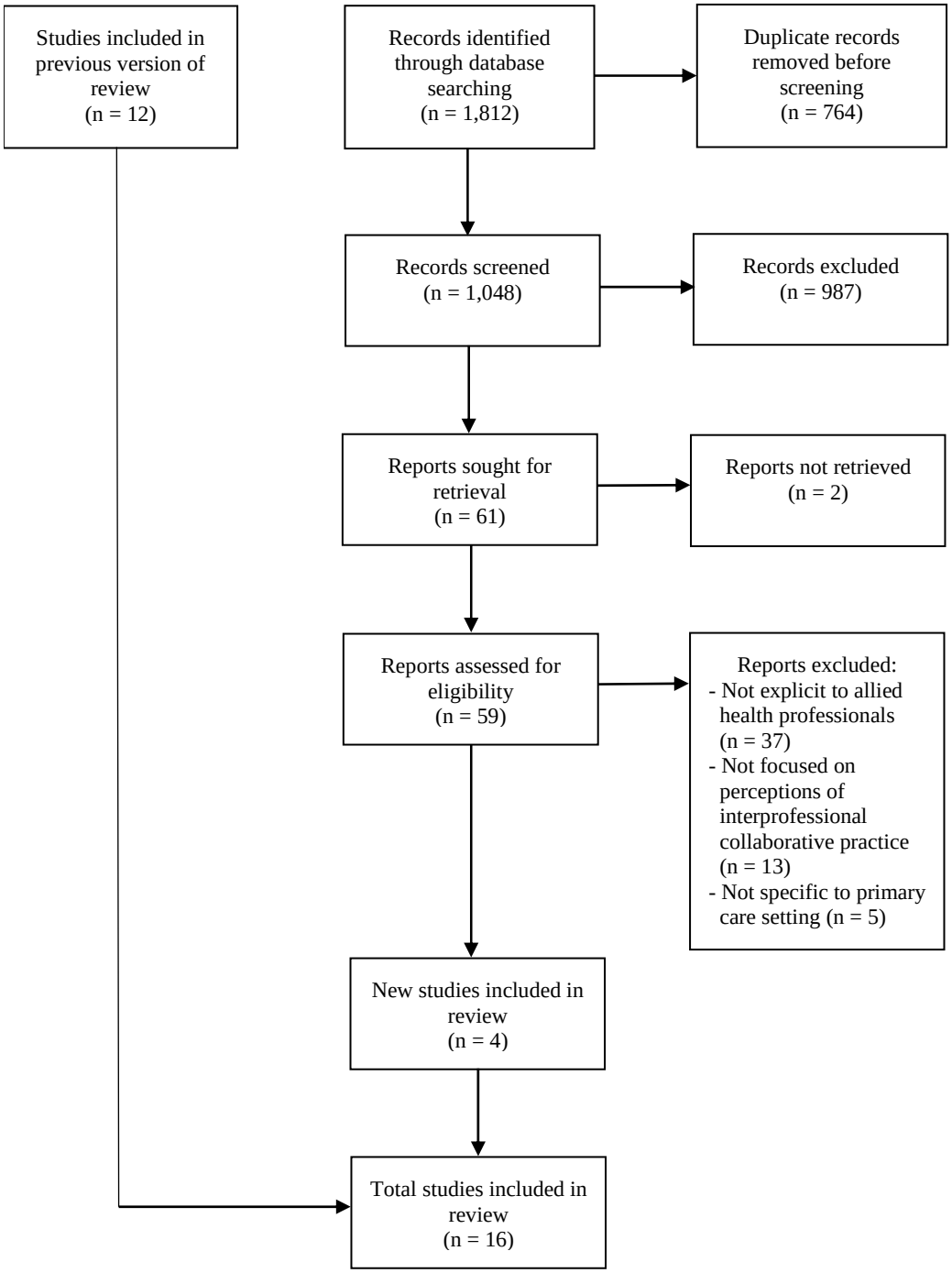


Table 2. Characteristics and findings of those studies included in the original review.

Study	CCAT (%)	Aim	Method	Sample	Main findings
Brown *et al.* (2015) Canada	65	Assess teamwork in FHTs	Mixed methods. Qualitative grounded theory approach using semi-structured interviews and questionnaire survey using the TCI and PERK scale	19 FHT practice sites in urban and rural areas. Qualitative phase: 107 participants (including GPs, nurses, SWs, dietitians, psychologists, OTs). Qualitative phase: 317 participants (including GPs, nurses and AHPs)	Nine dimensions related to high team functioning were identified: common philosophy, scope of practice, conflict resolution, change management, leadership, and team evolution. Leadership was pivotal in forging a common philosophy and encouraging team collaboration
Doekhie *et al.* (2017) Netherlands	78	Explore PHC professionals' perceptions of teams and team membership, and what influences these perceptions	Mixed methods. Quantitative questionnaire followed by semi-structured interviews	Qualitative phase: 152 PHC professionals representing 12 disciplines (including GPs, physiotherapists and psychologists). Quantitative phase: 32 PHC professionals representing 5 disciplines (including physiotherapists and OTs)	Misalignments existed between perceptions regarding which disciplines are members of the team and the relational coordination between disciplines. Three factors influenced professionals' perception of being part of a team: knowing the people you work with; the necessity for knowledge exchange; and sharing a holistic view of caregiving
Dufour *et al.* (2014) Canada	73	Explore physiotherapists' roles and how they are enacted within PHC teams	Qualitative study based on grounded theory using semi-structured interviews	12 physiotherapists from various PHC sites	Physiotherapists negotiated their place within PHC teams through five interrelated roles: manager; evaluator; collaborator; educator; and advocate
Gaboury *et al.* (2009) Canada	78	Investigate elements perceived by practitioners working in IHC clinics that facilitate or limit collaboration	Qualitative study using semi-structured interviews	11 CAM practitioners (including chiropractors), 10 biomedical practitioners (including physicians, dentists and nurses) from five IHC clinics in urban areas	Constructs contributing to collaboration included practitioners' attitudes and educational background, as well as external factors such as the health care system and financial pressures. Major processes affecting collaboration were found to result in learning opportunities for practitioners, modified burden of work and ultimately, higher affective commitment toward the clinic
Grace and Higgs (2010) Australia	55	Examine the relationships among GPs and CAM practitioners and their respective roles in co-located practices	Qualitative hermeneutic phenomenology approach using cumulative case studies, focus groups and key informant interviews	GPs and CAM practitioners (including chiropractors) from IHC clinics in a metropolitan area	Three practice styles were identified among GPs and CAM practitioners working in IHC clinics: mutually empowering; GP-directed with varying levels of autonomy afforded CAM practitioners; and limited collaboration where patients were offered mainstream medicine and complementary medicine, which GPs performed themselves

Study	CCAT (%)	Aim	Method	Sample	Main findings
Gray and Orrock (2014) Australia	55	Explore practitioners' perspectives of the theory and practice of the integrative medicine model, relevant to factors influencing referral among them	Qualitative study using semi-structured interviews	2 GPs, 2 naturopaths and 2 osteopaths from two PHC clinics providing integrative medicine	Predominant themes centred on the notion of interprofessional relationships and collaborations. Insight into these relationships within integrative medicine revealed concepts of interprofessional trust and respect. Sharing a common philosophy of care and understanding pertaining to scope of practice and area of expertise appeared to support the integrative medicine framework. These concepts and themes were determined as important factors influencing referral patterns
Myburgh *et al.* (2014) Denmark	45	Describe interprofessional practice in private chiropractic clinics	Mixed methods design using an electronic survey	166 chiropractors working in chiropractic private practices	Chiropractors in the Danish context facilitate interprofessional practices by employing other health care providers to work in their clinics. Danish chiropractors perceive interprofessional practice as important in the delivery of musculoskeletal health services
Perreault *et al.* (2014a) Canada	85	Describe the interprofessional practices of private sector physiotherapists, and identify influencing factors and effects of interprofessional practices, as perceived by physiotherapists	Qualitative study using semi-structured interviews	13 physiotherapists working in the physiotherapy private sector	Factors that influenced physiotherapists' interprofessional practices were related to patients, providers, organisations, and wider systems. Physiotherapists viewed positive effects of interprofessional practices, including elements such as gaining new knowledge as a provider and being valued in one's own role, as well as improvements in overall treatment and outcome
Perreault *et al.* (2016a) Canada	73	Describe private sector physiotherapists' interprofessional practices regarding LBP management and identify organisational and provider-level variables associated with the intensity of such practices	Quantitative study utilising a descriptive cross-sectional survey	327 physiotherapists working in the physiotherapy private sector	Physiotherapists reported frequent interactions with other physiotherapists, family physicians and therapy assistants, but infrequent interactions with psychologists, neurosurgeons, and chiropractors. Frequently reported means of interactions were written/oral messages sent through clients, face-to-face unplanned discussions, and faxed or mailed letters
Perreault *et al.* (2018) Canada	40	Identify private sector physiotherapists' perceptions of interprofessional work regarding interventions for adults with LBP	Quantitative study utilising a descriptive cross-sectional survey	327 physiotherapists working in the physiotherapy private sector	Proximity of physiotherapists with other professionals, clinical workloads, and client's financial situation were perceived as important factors influencing the implementation of interprofessional work

Study	CCAT (%)	Aim	Method	Sample	Main findings
Pullon *et al.* (2016) New Zealand	75	Examine elements of interprofessional collaboration in PHC settings using a novel range of data collection methods and primary analysis of observational data	Multiple case study design adopting non-participant observation and interviews	GPs, nurses, AHPs, receptionists and administrators across three GP clinics in urban and regional areas	Five overarching and intersecting cross-case themes emerged: built environment; location and demographics; business and employment models; shared mission and goals; and team structure and climate
Sargeant *et al.* (2008) UK	63	Explore perceptions of effective PHC teams to determine the related learning needs of PHC professionals	Qualitative study based on grounded theory using focus groups	61 PHC professionals (including physicians, dietitians, OTs, physiotherapists) from ten PHC settings	Five themes of PHC team effectiveness emerged: understanding and respecting team members' roles; recognising that teams require work; understanding PHC; working together: practical "know-how" for sharing patient care; and communication

AHP, allied health professional; CAM, complementary and alternative medicine; CCAT, Crowe Critical Appraisal Tool; FHT, family health team; GP, general practitioner; IHC, integrated health care; LBP, low back pain; OT, occupational therapist; PERK, Providing Effective Resources and Knowledge; PHC, primary health care; SW, social worker; TCI, Team Climate Inventory; UK, United Kingdom.

Studies ranged considerably regarding their degree of procedural rigour. Quality assessment scores ranged from 16 to 34 out of 40 possible points. Four studies were of high quality (Doekhie et al., 2017; Gaboury et al., 2009; Perreault et al., 2014a; Pullon et al., 2016), six of moderate (Brown et al., 2015; Dufour et al., 2014; Grace & Higgs, 2010; Gray & Orrock, 2014; Perreault et al., 2016a; Sargeant et al., 2008) and two of low quality (Myburgh et al., 2014; Perreault et al., 2018). Most studies reported using qualitative methods (Dufour et al., 2014; Gaboury et al., 2009; Grace & Higgs, 2010; Gray & Orrock, 2014; Perreault et al., 2014a; Pullon et al., 2016; Sargeant et al., 2008), while three reported mixed methods (Brown et al., 2015; Doekhie et al., 2017; Myburgh et al., 2014) and two reporting using quantitative methods (Perreault et al., 2016a, 2018). Among the qualitative studies, few addressed the researchers' influence on the study, many did not report sampling until data saturation was achieved and only one study performed member checking to ensure that responses collected from participants were accurate and credible. Among the mixed methods studies, one paper did not provide a rationale for a mixed method design nor mention how the qualitative and quantitative data were meaningfully incorporated to explore the research questions. Among the quantitative studies, both reported an acceptable response rate, but for one study the representativeness of the sample population was unclear and the validity of the data collection tool was not adequately described.

Updated review (June 2018– February 2024)

Four new papers met the inclusion criteria and are presented in Table 3. Three of the reviewed studies were conducted in Europe (Johansen & Ervik, 2022; Slåtsveen et al., 2023; Vergès et al., 2020) and one study took place in Canada (Donnelly et al., 2019). Physiotherapists and OTs were represented in three of the additional studies (Donnelly et al., 2019; Johansen & Ervik, 2022; Slåtsveen et al., 2023) and chiropractors (Donnelly et al., 2019) and psychologists (Vergès et al., 2020) were participants in one study each. No studies in the updated review met the inclusion criteria exploring IPCP from the perspectives of optometrists, osteopaths or podiatrists. In three of the included studies (Donnelly et al., 2019; Johansen & Ervik, 2022; Slåtsveen et al., 2023), the collected data were combined and the emergent findings were not isolated to individual allied health professions. For studies that articulated sample size, there was a large variation, ranging from 52 to 434 participants. Details regarding the precise number of participants were difficult to obtain in one study (Slåtsveen et al., 2023).

All four studies included in the updated review were considered of moderate quality, with CCAT quality assessment scores ranging closely from 24 to 26 out of 40 possible points. Three studies reported using qualitative methods (Donnelly et al., 2019; Johansen & Ervik, 2022; Slåtsveen et al., 2023) and one reporting using quantitative methods (Vergès et al., 2020). None of the qualitative studies addressed the researchers' influence on the study or performed member checking to ensure that responses collected from participants were accurate and credible. The quantitative study reported

an acceptable response rate and data was obtained from a representative sample, but collaboration was assessed using a non-validated survey instrument.

2.2.4.3 Themes

Thematic analysis identified five themes relating to IPCP in PHC, as perceived by AHPs: (a) shared philosophy; (b) communication and clinical interaction; (c) physical environment; (d) power and hierarchy; and (e) financial considerations.

Theme 1: Shared philosophy

A common goal to respond to PHC needs surfaced as a factor promoting IPCP. A mutual understanding regarding PHC principles provided an important basis for facilitating IPCP in ten of the reviewed studies (Brown et al., 2015; Doekhie et al., 2017; Dufour et al., 2014; Gaboury et al., 2009; Grace & Higgs, 2010; Gray & Orrock, 2014; Perreault et al., 2014a, 2016a; Pullon et al., 2016; Sargeant et al., 2008). Allied health professionals in several studies shared the belief that PHC settings are dynamic and require commitment and work to develop and maintain IPCP (Doekhie et al., 2017; Dufour et al., 2014; Gaboury et al., 2009; Gray & Orrock, 2014; Pullon et al., 2016; Sargeant et al., 2008). Indeed, IPCP was perceived by many AHPs as the result of active, ongoing effort (Myburgh et al., 2014). One study emphasised that AHPs should not work in isolation and only focus on a patient's needs within their own field of expertise, rather they should collectively attempt to address the patient's needs by adopting a collaborative approach (Doekhie et al., 2017). Three of the studies identified that AHPs worked in facilities where there was a clear organisational vision to engage in IPCP (Doekhie et al., 2017; Gray & Orrock, 2014; Perreault et al., 2014a).

Table 3. Characteristics and findings of those studies included in the updated review.

Study	CCAT (%)	Aim	Method	Sample	Main findings
Donnelly *et al.* (2019) Canada	60	Understand the perspectives of interprofessional PHC teams on performance measurement and the factors that influence their views	Qualitative study using focus groups	283 PHC providers from 14 health professions (including chiropractors, dietitians, OTs, pharmacists, physiotherapists and social workers) working in interprofessional PHC teams	The top three elements of interprofessional collaboration were communication; co-treatment; and patient-based conferences, and the top three performance indicators currently used to demonstrate the value of interprofessional collaboration were patient experience; patient health status; and within team referrals.
Johansen and Ervik (2022) Norway	65	Explore the experiences and challenges of interprofessional collaboration among health care professionals providing palliative care in rural areas	Qualitative study using focus groups and individual semi-structured interviews	52 PHC health professionals (including nurses, GPs, physiotherapists and OTs)	Direct communication, termed 'talking together', was perceived as the optimal form of collaboration, both within PHC and with medical specialists. Co-location was perceived as advantageous for crucial communication, mutual support and knowledge about other health professions' competencies and work schedules.
Slåtsveen *et al.* (2023) Norway	65	Examine the paradoxes that emerge between organisational work structures and the trust model within interprofessional frontline teams in home-based health care services	Qualitative study using observations, focus groups and individual semi-structured interviews	Health care professionals from community home-based health care services in a large metropolitan area (including nurses, occupational therapists and physiotherapists)	Organisational work structures influence how teams deliver home-based health care services, leading to contradictions that challenge collaboration and flexibility needed to address patients' individual needs.
Vergès *et al.* (2020) France	63	Investigate the level of satisfaction among psychologists regarding their collaboration with GPs in a health care setting	Quantitative study using a cross-sectional postal survey	434 psychologists working in private practice	Collaboration between GPs and psychologists was considered unsatisfactory by many psychologists. The main barriers were lack of time, lack of understanding and poor interactions. Many psychologists reported that GPs knew little about their work. Psychologists had professional exchanges with an average of three local GPs and received referral information for only a small proportion of new patients.

CCAT, Crowe Critical Appraisal Tool; GP, general practitioner; OT, occupational therapist; PHC, primary health care.

Shared philosophy: Updated review to February 2024

Two papers (Donnelly et al., 2019; Johansen & Ervik, 2022) published between June 2018 and February 2024 underscored the importance of a unified commitment to person-centred care and emphasised the necessity for health practitioners from different professions to operate with a mutual understanding and shared goals. Both studies highlighted the dynamic nature of PHC settings and stressed the ongoing effort required to maintain and develop IPCP. The need for collective goals and objectives to guide collaborative efforts towards enhancing the quality of patient care was also an important factor identified in the updated review. Effective IPCP was perceived by AHPs to be built on a foundation of both structural support within PHC settings and personal commitment from individual health practitioners.

Theme 2: Communication and clinical interaction

Effective communication and meaningful interprofessional interactions help to foster IPCP in PHC. Opportunities for informal communication were highlighted as an important factor for reinforcing interprofessional relationships in half of the reviewed studies (Brown et al., 2015; Doekhie et al., 2017; Gray & Orrock, 2014; Perreault et al., 2016a; Pullon et al., 2016; Sargeant et al., 2008). Allied health professionals considered indirect rather than direct interactions as the primary means of interaction with other health practitioners, for example, using patients to deliver correspondence and interactions were often unplanned rather than planned (Perreault et al., 2014a, 2016a). Although participants in one study were advocates for regular formal meetings to discuss patient cases (Sargeant et al., 2008), two other studies found electronic communication to be preferred over formal meetings due to convenience and caseload demands (Doekhie et al., 2017; Perreault et al., 2016a).

Three studies showed that the mainstay of physiotherapists' interprofessional interactions were with GPs (Perreault et al., 2014a, 2016a, 2018). In addition, many physiotherapists reported frequent interactions with OTs, less frequent interactions with osteopaths and little to no contact with psychologists (Perreault et al., 2014a). Myburgh et al. (2014) highlighted that only 11% of Danish chiropractors interacted with GPs in their clinical practice, while a larger proportion collaborated with massage therapists (82%), physiotherapists (58%) and acupuncturists (37%). However, within this study it was found that these professional groups were often employees within chiropractic clinics.

Knowing health practitioners from other professions personally was viewed as positively influencing IPCP by increasing levels of familiarity and trust (Doekhie et al., 2017; Perreault et al., 2014a, 2016a, 2018). Sharing a common language and treatment approach greatly influenced the frequency and quality of communication in four studies (Gaboury et al., 2009; Grace & Higgs, 2010; Perreault et al., 2014a; Sargeant et al., 2008). Frequency and content of communication was shown to be related to the degree of task interdependency between health practitioners and the patient's medical condition

(Doekhie et al., 2017). When patient complexity and acuity was low, communication was less structural and more incidental (Doekhie et al., 2017). However, Doekhie et al. (2017) asserted that when AHPs shared minimal task interdependency, the value of IPCP was difficult to see and therefore less likely to occur.

Communication and clinical interaction: Updated review to February 2024

Three new papers (Donnelly et al., 2019; Johansen & Ervik, 2022; Vergès et al., 2020) were identified that highlighted the importance of effective communication and clinical interaction in achieving IPCP in PHC. Allied health professionals considered open, effective communication channels to be the foundation of successful IPCP, enabling diverse teams to share knowledge, coordinate care and address complex health challenges efficiently. Understanding and respecting each other's professional languages and communication styles was an important factor in two of the reviewed studies (Donnelly et al., 2019; Johansen & Ervik, 2022), however only one publication (Johansen & Ervik, 2022) reported that regular and structured interactions, such as team meetings and case discussions, were necessary for maintaining clarity and coherence in patient management plans. The importance of leveraging technology to facilitate communication, especially in clinical settings where face-to-face interaction may be limited, was addressed in two studies (Donnelly et al., 2019; Johansen & Ervik, 2022). Vergès and colleagues (2020) stressed the need for ongoing training and support to equip health practitioners, including AHPs, with the skills required for effective interprofessional dialogue.

Theme 3: Physical environment

Allied health professionals' workplace location and service delivery model emerged as a dominant theme influencing IPCP in PHC. Half of the reviewed studies identified physical proximity and space allocation as a factor that facilitated or limited IPCP (Brown et al., 2015; Doekhie et al., 2017; Gray & Orrock, 2014; Perreault et al., 2014a, 2018; Pullon et al., 2016). For AHPs working in a monoprofessional practice, the physical environment often constrained opportunities for interaction across different health professions, meaning that the concept of IPCP usually applied to practitioners from the same health profession (Doekhie et al., 2017; Perreault et al., 2014a, 2018). Another study showed that although chiropractors in monoprofessional facilities acknowledged the importance of IPCP, 69% did not consider their current clinical practice to be collaborative in nature (Myburgh et al., 2014). Two studies found that AHPs who worked in small, long-established multiprofessional PHC settings had the advantage of sharing a high degree of trust with health practitioners form various backgrounds (Pullon et al., 2016; Sargeant et al., 2008). Multiprofessional team structures created a supportive environment where complex, shared decision-making could be successfully achieved and maintained (Sargeant et al., 2008). Co-location of health services was perceived to allow patients to get the most from multiple health practitioners in one convenient place (Gray & Orrock, 2014). In co-located settings, AHPs viewed referral processes as being more efficient because

feedback from other health practitioners within the nearby facilities generally occurred much faster (Doekhie et al., 2017; Gaboury et al., 2009).

Physical environment: Updated review to February 2024

The updated review identified two additional publications (Johansen & Ervik, 2022; Slåtsveen et al., 2023) that explored the link between IPCP and the physical and built environment. Workspace design and the layout of PHC facilities was regarded to significantly influence the ease and effectiveness of IPCP, with the two studies stressing the importance of physical spaces that promote convenient access to, and interaction between, health practitioners from different professions. Allied health professionals in one study (Slåtsveen et al., 2023) asserted that a conducive physical environment supports direct patient care activities but also informal interactions among staff, which are vital for building rapport and understanding across different health professions. The allocation and use of shared spaces for meetings and consultations were highlighted as important factors in facilitating interprofessional communication and planning (Slåtsveen et al., 2023).

Theme 4: Power and hierarchy

Power imbalances and conflicts can impede IPCP in PHC. Two studies revealed that when autonomy was low, AHPs did not feel like their knowledge, skills and expertise was utilised to the best of their ability (Grace & Higgs, 2010; Gray & Orrock, 2014). Some AHPs found this practice restrictive, while others appreciated a directive for guided treatment (Grace & Higgs, 2010). Two reviewed studies found attendance at formal meetings as a key responsibility to ensure the effectiveness of the collaborative process, holding potential for roles to be clarified and conflicts to be resolved (Brown et al., 2015; Sargeant et al., 2008). However, for AHPs working in co-located PHC settings, many stated that significant autonomy was given to them and conflict was largely non-existent (Grace & Higgs, 2010; Pullon et al., 2016). These facilities supported a non-hierarchal interprofessional referral network, where all health practitioners were considered equally important (Gray & Orrock, 2014).

Power and hierarchy: Updated review to February 2024

Two additional studies (Slåtsveen et al., 2023; Vergès et al., 2020) revealed that recognising and addressing power imbalances between health practitioners from different professions is critical for fostering an environment conducive to effective IPCP in PHC settings. Allied health professionals reported that creating equitable platforms for communication and decision-making allowed all team members, regardless of professional background, to contribute equally to patient care. One study (Vergès et al., 2020) highlighted the importance of mutual respect and understanding across health professions as foundational to overcoming hierarchal barriers and enhancing team cohesion and functionality, and the other paper (Slåtsveen et al., 2023) emphasised that successful IPCP requires ongoing efforts to cultivate an organisational culture that supports shared leadership and values the

contributions of all team members equally. Both studies suggested that implementing strategies to mitigate challenges posed by traditional power dynamics (for example, structured team-building activities and rotating leadership roles) were needed to promote a more balanced and integrated approach to IPCP.

Theme 5: Financial considerations

Monetary aspects of PHC service provision have capacity to enable or hinder IPCP. Financial factors influencing IPCP largely applied to private PHC facilities (Gaboury et al., 2009; Perreault et al., 2014a, 2018; Pullon et al., 2016), however public sector funding issues were also reported (Dufour et al., 2014; Pullon et al., 2016). Within the private practice setting, a patient's financial status was seen to impact on referrals to other health practitioners (Perreault et al., 2014a, 2018). When a patient's ability to pay for treatment was perceived to be limited, some AHPs refrained from referring to another health practitioner, even if the referral was considered important (Perreault et al., 2014a). One reviewed study revealed that referrals to health practitioners employed at a different organisation were approached with caution (Perreault et al., 2014a). For example, a physiotherapist might refrain from referring a patient to an OT at another organisation if physiotherapy services were also available within the same organisation. This was viewed as a considerable threat to business that could lead to a potential loss of clientele (Perreault et al., 2014a).

Financial considerations: Updated review to February 2024

One new paper (Slåtsveen et al., 2023) in the updated review examined the critical role of financial considerations in the provision of IPCP in PHC. The study highlighted that financial resources significantly influence the capacity of PHC teams to implement IPCP effectively. For example, funding constraints were perceived to limit the availability and quality of collaborative initiatives, making it challenging to provide care that is both flexible to patient needs and tailored to specific circumstances. Allied health professionals emphasised the importance of aligning financial incentives with collaborative care objectives to enhance the effectiveness and efficiency of IPCP and called for innovative funding mechanisms that can support the complexities and demands of collaborative care models.

2.2.5 Discussion

This is the first methodologically inclusive literature review undertaken to explore AHPs' perceptions of IPCP in PHC. The analysis of included studies revealed five prominent themes that characterised IPCP from the perspective of AHPs in PHC: (a) shared philosophy; (b) communication and clinical interaction; (c) the physical environment; (d) power and hierarchy; and (e) financial considerations.

Opportunities for shared, frequent brief informal communication appeared to be essential for IPCP in PHC to occur. However, IPCP within private PHC facilities was perceived to be indirect and mostly limited to referrals to health practitioners from other professions. Therefore, private sector AHPs' perceptions regarding collaborative care do not match often-found definitions of IPCP that typically involve formal meetings to discuss specific patient cases (Reeves et al., 2010). This highlights the need to investigate the factors influencing IPCP in PHC settings where formal meetings are less likely to occur, such as monoprofessional private practice facilities (Perreault et al., 2014a).

This review demonstrates the importance of task interdependency in PHC. The findings suggest that the extent to which AHPs collaborated with other health practitioners was related to task interdependency. Wageman (1995) describes this concept as the degree to which a task requires collaborative action through the sharing of knowledge and resources. When task interdependency was minimal, the perceived need for AHPs to communicate and collaborate with other health practitioners was low. In some PHC settings, this may be because certain contextual influences, such as organisational policies, patient needs, or resource availability, are more significant than others, leading to different manifestations of role distribution and task interdependency between health practitioners (MacNaughton et al., 2013). Most of the reviewed studies included AHPs who were employed in multiprofessional practice facilities, however little information was provided regarding task interdependency for those practising in the absence of formalised team structures. Understanding how task interdependency is perceived by AHPs in various PHC settings, including monoprofessional clinics and co-located health services, suggests an area for future study.

Many AHPs in PHC perceived themselves as members of a non-hierarchal interprofessional network, practising with considerable autonomy. Within these networks, it would appear that when defined roles and professional respect and trust are present, shared leadership can exist. This professional respect among health practitioners in PHC supports the referral of patients and enhances the collaborative experience for all involved. However, dependent on a patient's unique health care needs, interprofessional network membership will inevitably vary (D'Amour et al., 2008). Establishing who the integral members within an interprofessional network are will enable AHPs to develop greater levels of trust and respect for other health practitioners. These professional virtues will strengthen interprofessional interactions and communication between AHPs and other health practitioners in the PHC setting.

The physical environment was found to play an important role in determining the extent of IPCP for AHPs in PHC. This review argues that AHPs working in close proximity to health practitioners from different professions have more regular interprofessional interactions compared to those who are geographically separated. Allied health professionals widely acknowledged the importance of IPCP in

PHC, however the majority of participants in one study who worked in multiprofessional facilities were not engaged in collaborative practice (Myburgh et al., 2014). Co-location of multiple PHC services within the same physical space has demonstrated the potential to increase the frequency of informal communication patterns between health practitioners, while supporting the shift away from traditional monoprofessional, or sole practitioner, service delivery models (Bonciani et al., 2018). A recent study illustrated that IPCP between GPs and psychologists may not have occurred without the provision and assistance of organisational structure from the onset (Farmanova et al., 2017). However, co-location of multiple health services is unlikely to facilitate IPCP on its own, and it is perhaps a misguided assumption that health practitioners, including AHPs, already possess the necessary skills for collaborative practice in PHC (Szafran et al., 2018).

2.2.5.1 Implications for practice

Findings from this review have the potential to inform changes in practice in PHC that could improve the nature and quality of interprofessional interactions between AHPs and other health practitioners from a range of professional backgrounds. This review highlights the significance of personally knowing health practitioners from different professions in order to create PHC settings that are conducive to interprofessional interactions. Therefore, providing occasions for all health practitioners involved in an individual's care to interact in social contexts could be beneficial. By participating in these informal exchanges, health practitioners can gain more knowledge of other professions' roles and responsibilities and build on their mutual levels of respect, trust and understanding (Doekhie et al., 2017). Moreover, co-location of multiple PHC services within the same physical space appears to positively influence AHPs' interprofessional interactions. Encouraging the close physical proximity of AHPs and health practitioners from different professions could lead to the identification of preferred organisational models in PHC (Perreault et al., 2014a).

2.2.5.2 Implications for education

As PHC continues to develop and health practitioners' scopes of practice expand and evolve, AHPs may benefit from ongoing training. Educational strategies in PHC should deliver specific information related to IPCP in order to optimise the quality of relationships between AHPs and health practitioners from different professional backgrounds. A key focus of such training could involve fostering shared philosophies, including a common understanding of patient-centred care principles, teamwork, and collective responsibility. Embedding these shared values into both formal education and professional development programs may help AHPs work more cohesively within interprofessional teams. Training innovations in PHC could also offer opportunities for AHPs' scopes of practice to be clarified and their roles and responsibilities to be asserted, subsequently stimulating appropriate patient referrals. Additionally, findings from this review may be used by tertiary institutions to inform

curriculum development as it relates to IPCP in PHC. Such preparation and training at entry-level will foster a collaborative clinical environment for allied health graduates to embrace upon entering the health workforce.

2.2.5.3 Implications for research

Allied health professionals are often reported collectively in the literature, as was found in a number of included studies in this review. Consequently, there is a paucity of research concerning individual allied health professions in PHC. Transferability across allied health professions in PHC should not be assumed, therefore future research that isolates data to the specific professions in recommended. Studies that included patients as participants were excluded from the review, omitting an important voice in relation to IPCP. At present, research suggest that patients lack opportunities to provide direct feedback concerning their service needs and preferences in PHC (Soklaridis et al., 2009). Although it was beyond the objective of this review, an in-depth understanding of the patient perspective is required to improve the overall quality of the collaborative process in PHC. Furthermore, it remains largely unknown how privately practising AHPs' experiences of IPCP differ from those employed in PHC settings within the public health care sector. Research is indicated to explore AHPs' self-reported perceptions regarding IPCP in private practice and to document the nature of interprofessional interactions that occur within these facilities.

2.2.5.4 Limitations

There are several limitations of this integrative review. Firstly, the review is limited by the quality of included studies. The CCAT scores indicate that the reviewed studies were of moderate methodological quality, with the average score being 65%. The heterogenous quality and design of the included studies reduces the strength and validity of the conclusions drawn in this review. Next, caution must be applied when interpreting the findings of this review, as some studies did not isolate data to allied health professions. Although every attempt was made to only report findings related to AHPs, it may be possible that some findings incorporate health practitioners from various other professions. To minimise this, two independent reviewers appraised the articles and discussed the findings to reach a consensus that the themes adequately reflected the experiences of AHPs. Additionally, 14 of the reviewed studies relied entirely on self-report to examine IPCP in PHC. Consequently, AHPs' perceptions may be predisposed to elements of personal bias. To overcome the biases and shortcomings apparent in self-reported accounts, direct observational methods have been suggested as more appropriate for understanding complex and difficult to measure phenomena, including IPCP (Morgan et al., 2015). Furthermore, the literature on IPCP is difficult to retrieve given there are no words both sensitive and specific to the subject (Supper et al., 2015). Although this review was detailed, it was not exhaustive, as some papers outside the search strategy may have been

omitted. However, the systematic search, developed in conjunction with a professional librarian and combined with a manual search to identify all essential literature related to the topic, was a strength of this review.

2.2.6 Conclusion

This integrative review has identified diverse key elements related to IPCP in PHC as perceived by AHPs. Future research should employ direct observational methods to investigate whether AHPs' self-reported perceptions of IPCP align with their actual interactions in the PHC setting. The results of such research may guide the development of effective interventions aimed at optimising IPCP between AHPs working in PHC and other health practitioners.

2.3 Chapter Summary

This chapter has presented an integrative literature review examining the perspectives of AHPs on IPCP in PHC settings. The original literature search was conducted in April 2018, identifying 12 articles globally. Due to the limited literature specifically focusing on physiotherapists and to address an evidence gap, the literature search was expanded to include multiple allied health professions. This decision was based on the similarities in practice between these professions, as well as the need to encompass both public and private PHC settings.

In February 2024, the review was updated with an extended search from June 2018 to February 2024, using the original eligibility criteria and search keywords. This update resulted in the inclusion of four additional peer-reviewed articles. Thematic analysis of both the original and updated studies highlighted consistent themes, indicating a continued evidence gap in the literature regarding IPCP. The findings emphasise the need for further research to better understand the implications of IPCP, particularly within the context of physiotherapy private practice.

Chapter 3 will describe the methodology employed in this study, detailing the mixed methods design chosen to explore IPCP from the perspective of Australian physiotherapy private practitioners.

Chapter 3. Methodology and Methods

3.1 Chapter overview

The purpose of this chapter is to explain and justify the research design and philosophical foundations that underpin the study. This includes a discussion on the methodological approach used to guide the investigation into physiotherapists' perspectives on IPCP in private practice settings. The chapter begins with foundational discussions on ontology and epistemology, elaborating on the adoption of social constructivism as the philosophy that underpins the research. Complexity Science (CS) is presented as the theoretical framework and how this theory informs the study is explained. The chapter also justifies the use of a mixed methods explanatory sequential design. It explains and justifies the methods employed in this research, beginning with a summary of the methods, followed by a detailed description of their application in the research. This includes the processes for quantitative and qualitative data collection, analysis and the integration of both methods. Ethical issues considered in the conduct of this research are then discussed. The chapter concludes by discussing the factors that contribute to the quality and rigour of the research, establishing the credibility of the findings.

3.2 Ontological assumptions and epistemological approach

Epistemology is a branch of philosophy concerned with the theory of knowledge, focusing on the nature of knowledge itself, its scope and the validity and reliability of claims to knowledge (Brown, 1993). The epistemological position informs the research methodology and methods of collection and analysis, guiding the strategy and techniques used to answer research questions (Kuhn et al., 2000). Within this framework, the ontological perspective raises fundamental questions about the nature of reality and how we can best learn the truth about this reality, allowing researchers to explore various forms of evidence from different perspectives and experiences (Charmaz, 2011). This interplay between ontology and epistemology suggests that researchers' epistemological beliefs are confined by their ontological beliefs, yet there is flexibility (epistemological latitude) within these confines (Saldana et al., 2011).

The relativist ontology posits that reality is a finite subjective experience, with nothing existing outside of our thoughts (Braun & Clarke, 2013; Denzin & Lincoln, 2018). From this perspective, reality is not distinguishable from the subjective experience of it, leading to the understanding that there are as many different realities as there are people (Braun & Clarke, 2013; Corbin & Strauss, 2008; Mills & Birks, 2014). This aligns with the notion that science's purpose, from a relativist

viewpoint, is to understand the subjective experience of reality and acknowledge multiple truths (Denzin & Lincoln, 2018).

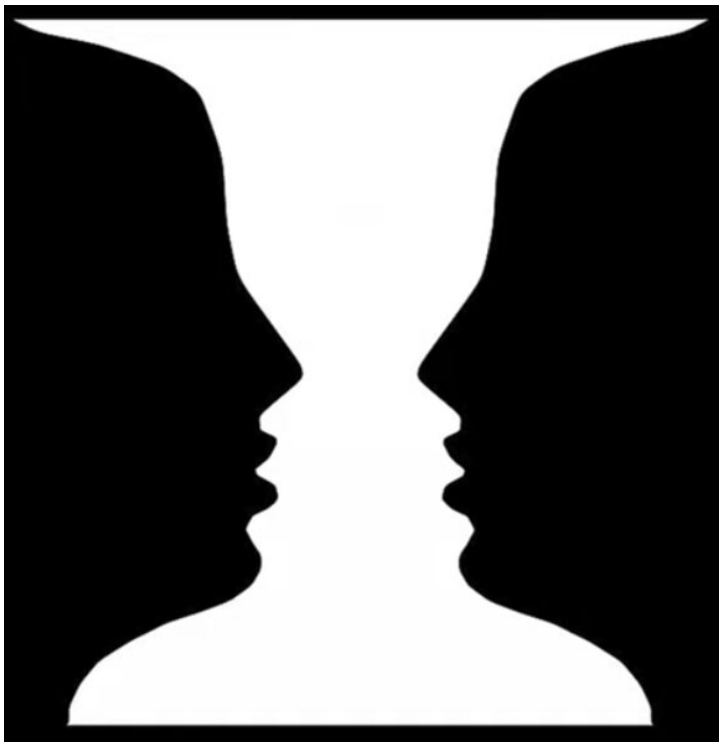
Social constructivism, an epistemological framework, builds on these foundational principles by emphasising that knowledge is constructed through social interactions and cultural experiences (Kukla, 2000; Vygotsky & Cole, 1978). It focuses on understanding how individuals construct their own realities and meanings, contrasting with positivist approaches that seek objective truths (Kukla, 2000). This paradigm supports the idea that research should concentrate on the diverse perspectives and experiences of individuals, acknowledging that knowledge is shaped by cultural and historical contexts (Ernest, 1999; Gredler, 1997). Methodologically, this implies that social constructivist researchers employ methods allowing for a deeper understanding of subjective meanings and realities constructed by individuals within their social contexts.

The social constructivist approach has been specifically adopted for exploring the complexities of IPCP through participants' perceptions, emphasising the close collaboration between the researcher and participants (Kukla, 2000). This approach allows participants to share their stories, linking experience and actions by positing that individuals create meaning through their interactions with the world and others. Understanding peoples' experiences and actions requires acknowledging that what people say and do are both vital components of how they construct and navigate their social worlds (Kukla, 2000). An example illustrating subjective knowledge is the Rubin Vase image (Figure 3), which can be interpreted in multiple ways depending on the observer. This underscores the idea that observations are influenced by the observer, and vice versa, highlighting the subjective nature of knowledge construction.

Potential limitations of social constructivist inquiry include challenges in generalising findings due to the focus on context-specific experiences and the difficulty in ensuring objectivity (Vygotsky & Cole, 1978). The researcher's beliefs and biases can influence data interpretation, and the interpretive nature of this approach can lead to multiple, possibly conflicting, interpretations of the same data. This necessitates a high level of reflexivity from the researcher to manage their influence on the research process effectively (Kukla, 2000). However, the social constructivist paradigm was chosen for this study because of its alignment with the inherently social nature of IPCP. Interprofessional collaboration relies on interactions between people, with shared experiences, perceptions, and communication playing central roles in shaping collaborative practices. By embracing specific assumptions about reality and knowledge, the social constructivist perspective facilitates an exploration of how participants' social interactions and cultural contexts influence their construction of IPCP. This paradigm is particularly suited to understanding the depth and complexity of human experiences, making it an ideal framework for examining the relational and social aspects of IPCP

(Braun & Clarke, 2013). Although quantitative methods were also employed in this study where they served the research objectives effectively, the primary focus was on qualitative approaches consistent with social constructivism, given their capacity to explore the nuanced, socially embedded nature of IPCP.

Figure 3. Rubin's vase – An illustration of subjective knowledge and perception. *Note.* Sourced from Getty Images (2017)



3.3 Mixed methods explanatory sequential approach

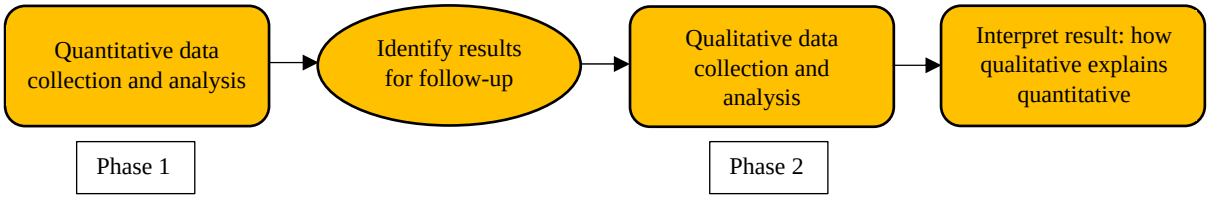
Mixed methods research can be described as a procedure for collecting, analysing and 'mixing' both quantitative and qualitative data at some stage of the research process within a single study to understand a research problem more completely (Morse, 2016). This approach provides a more comprehensive picture, avoids the biases intrinsic to the use of a monomethod design, and builds on and develops initial findings (Feilzer, 2010). This highlights the advantages of a mixed methods approach in exploring complex phenomena in collaboration with research participants in their own context rather than merely assessing or measuring it (Feilzer, 2010). The fundamental principle of mixed methods research asserts that the combination of quantitative and qualitative approaches provides a better understanding of research problems than either single approach alone (Creswell & Plano Clark, 2018; Morse, 2016; Teddlie & Tashakkori, 2020). This belief stems from the notion that

quantitative and qualitative methods complement each other, allowing for a more complete analysis of complex phenomena, including IPCP (Greene et al., 1989).

In mixed methods research, careful consideration of priority, implementation and integration is essential for a robust study design (Creswell & Creswell, 2023). Priority involves deciding whether the quantitative or qualitative components of the study will take precedence, based on the research aim and objectives (Creswell & Creswell, 2023). Implementation refers to the logistical execution of both components, including their sequence and methodology (Creswell & Creswell, 2023). Integration focuses on how the results from both quantitative and qualitative analyses are combined to form a cohesive understanding of the research topic (Creswell & Creswell, 2023). Together, these considerations ensure that a mixed methods study is well-structured, with a deliberate approach that leverages the strengths of both qualitative and quantitative research to provide a comprehensive insight into the research purpose (Creswell & Creswell, 2023; Creswell & Plano Clark, 2018). This study's design reflects a thoughtful approach to these considerations, with a qualitative phase that follows and elaborates on the preliminary findings from the quantitative phase, thereby giving priority to qualitative insights for a more nuanced understanding of the phenomenon.

The explanatory sequential mixed methods design (Figure 4), which involves collecting and analysing quantitative data first, followed by qualitative data, was considered appropriate for this study to examine the nuances of IPCP from the perspective of physiotherapy private practitioners (Creswell & Plano Clark, 2018; Morgan, 1998; Teddlie & Tashakkori, 2020). This two-phase design begins with an initial quantitative phase to explore relationships and patterns, providing a broad overview and identifying trends (Morgan, 1998). The subsequent qualitative phase is then used to explain and elaborate on the quantitative findings, helping to understand the underlying reasons and processes behind those trends (Morgan, 1998). By combining the strengths of both quantitative and qualitative methods, this design allows researchers to gain a deeper understanding of the construct of interest, making it particularly useful for studying complex social phenomena that require a holistic understanding and for instances where the researcher aims to delve deeper into significant, non-significant or surprising quantitative results (Morgan, 1998).

Figure 4. Visual representation of the sequential explanatory mixed methods design.



The explanatory sequential mixed methods design utilised in this study begins with a quantitative phase, where a custom-designed survey instrument collects numerical data on various aspects of physiotherapy private practitioners' interprofessional interactions. This phase aims to identify broad trends and patterns, setting the groundwork for the study. Following this, the qualitative phase employs interviews and observations to explore areas identified in the quantitative findings more deeply, acknowledging the subjective nature of IPCP. This approach ensures a holistic understanding of the phenomenon, leveraging both the broad insights from quantitative data and the rich, contextual understanding from qualitative data.

To operationalise the mixed methods design, researchers typically employ strategies to facilitate the effective integration of quantitative and qualitative data, including merging, connecting and embedding data (Creswell & Plano Clark, 2018). Merging involves combining quantitative and qualitative data to create a unified analysis and embedding consists of incorporating one form of data within another to supplement the primary dataset (Creswell & Plano Clark, 2018). This project predominately engages in the connecting strategy, where quantitative findings inform the development of interview questions and guide the focus of participant observations (Creswell & Plano Clark, 2018). By utilising this approach, the study leverages quantitative data to pinpoint areas requiring further exploration through qualitative methods, ensuring a comprehensive understanding of the research topic by directly linking the two data types for a cohesive analysis.

The flexibility of the explanatory sequential mixed methods design is also exemplified in how the survey findings influenced the design of subsequent qualitative data collection tools. Surprising findings from the survey, such as the discrepancy between the frequency of physiotherapists' interprofessional interactions and their satisfaction levels, prompted a deeper qualitative investigation. This illustrates the study's dynamic approach to adapting its methods based on initial findings, ensuring that subsequent data collection phases build on and enrich the understanding of the research problem.

The study acknowledges the potential for mixed methods designs to yield heterogeneous results, which may initially seem to undermine each other or represent different aspects of the phenomenon under study (Morgan, 1998; Teddlie & Tashakkori, 2020). However, this heterogeneity is seen not as a flaw but as a strength, providing a more nuanced and comprehensive understanding of the research topic. Careful interpretation and integration of these findings are essential to present a fuller picture of the complex reality being studied, where quantitative data reveal broad patterns and qualitative data offer depth and context.

3.4 Theoretical underpinnings

There are calls for better application of theory in health services research (Reeves & Hean, 2013). Theory is critically important to advancing the conceptual, empirical and theoretical work in the interprofessional field. Authors have commented on the limited use of theory in the interprofessional field and its critical importance to advancing work in this field (Hean et al., 2018; Reeves & Hean, 2013). Theory can lead us to question taken for granted assumptions regarding IPCP and to better understand what is happening beyond the surface (Hean et al., 2018). Additionally, using an appropriate theoretical lens can support the transfer of findings to a wide range of contexts (Tsoukas, 2017). Consequently, there have been deliberate moves to increase the theoretical underpinnings of interprofessional research (O'Leary & Boland, 2020). Although social psychological and educational theories in the interprofessional field, including Social Interdependence Theory and Situated Learning Theory, are increasingly popular, the contribution of organisational and systems theories is less well understood (O'Leary & Boland, 2020; Suter et al., 2013).

Many organisational and systems theories focus on the complex and dynamic relations between multiple layers in large systems, including aspects of communication, motivation, negotiation and culture. Some of these theories elaborate how organisational context and structures within an organisation can impact collaboration and practice change (Suter et al., 2013). Tsoukas (2017) argues that to capture the complexity of the real world, complex theories are required which use theoretical concepts to connect distinct aspects of lived experiences (O'Leary & Boland, 2020). These theories are particularly relevant for understanding and improving IPCP, as they provide insights into how systemic and organisational factors shape the interactions and dynamics between health practitioners.

3.4.1 Complexity Science

Complexity Science offers an innovative lens through which to examine the multifaceted phenomena of IPCP, particularly from the perspective of physiotherapy private practitioners. This theoretical framework emphasises the inherently unpredictable, dynamic and interconnected nature of biological, ecological or social systems (Plsek & Greenhalgh, 2001; Zimmerman et al., 1998). Complexity Science posits that complex systems exhibit properties such as emergence, non-linearity and self-organisation that challenge traditional linear and reductionist approaches to understanding organisational and human behaviour (Plsek & Greenhalgh, 2001).

Interprofessional collaborative practice in health care is a quintessential example of a complex adaptive system (Pype et al., 2018). It involves multiple actors (health practitioners from different professions), diverse processes (communication, decision making, patient care practices) and a

dynamic environment (the ever-evolving health care landscape). For physiotherapy private practitioners, navigating this complexity is part of their daily reality. They must adapt to the needs and perspectives of other professionals, negotiate shared goals and contribute their unique expertise, all within the context of providing patient-centred care (Pype et al., 2018). The non-linear interactions among these elements can lead to unpredictable outcomes, making CS an appropriate framework for investigating these phenomena.

A core argument for employing CS as the guiding theoretical framework in research involving complex systems is its emphasis on emergence, which states that the properties and behaviours of the system as a whole cannot be fully understood by examining its parts in isolation (Plsek & Greenhalgh, 2001). In the context of IPCP, this means that the experiences and views of physiotherapy private practitioners are shaped not only by their individual interactions with other health care professionals but also by the broader organisational, cultural and systemic contexts within which these interactions occur (Kukla, 2000; Plsek & Greenhalgh, 2001). A mixed methods approach, combining quantitative and qualitative data, is well-suited to capturing this emergent complexity, providing a more holistic understanding of the phenomena of interest. Furthermore, CS' focus on self-organisation and adaptability offers valuable insights into the mechanisms through which IPCP evolves. Physiotherapists and other health care professionals must continuously adapt to changes in patient needs, health policies and technological advancements (Pype et al., 2018). Consequently, their ability to self-organise, adjusting roles and processes in response to these changes, is crucial for ongoing collaboration. Investigating these adaptive processes through a CS lens may reveal how physiotherapy private practitioners contribute to the resilience and evolution of interprofessional teams.

3.5 Research setting

The geographic area defined by the Northern Queensland Primary Health Network (NQPHN) region was selected as the setting for this study (Figure 5). This region was chosen for the mix of regional, rural and remote physiotherapy private practice facilities within this context, as well as pragmatic considerations including time and financial constraints and the researcher's capacity to gain access to physiotherapy private practice sites in the qualitative phase of the project. The NQPHN region is home to an estimated 730,000 people who live within a 510,000 square kilometre catchment (NQPHN, 2021). Most of the population reside in the regional centres of Cairns, Mackay and Townsville, however approximately 8% of inhabitants live in remote and very remote areas (NQPHN, 2021). Almost 12% of the NQPHN region population identify as Aboriginal and/or Torres Strait Islander (NQPHN, 2021).

Figure 5. Map of the Northern Queensland Primary Health Network region. *Note.* Sourced from NQPHN (2021)

Although the health of people living in the NQPHN region is improving, there are significant ongoing challenges related to chronic conditions, ageing and disability (AIHW, 2024b, 2024c; NQPHN, 2021). The population is characterised by broad cultural and socioeconomic diversity and a range of health care needs (NQPHN, 2021). There are significant challenges in meeting the PHC needs of a population that is regionally dispersed, culturally and socioeconomically diverse, growing in size and affected by a substantial chronic disease and mental health illness burden (AIHW, 2024b, 2024c; NQPHN, 2021). Primary health care workforce shortages in most allied health professions, including physiotherapy, limit the ability of the available health workforce to meet these needs (AHPA, 2023; AIHW, 2024c; APA, 2022).

Despite an increased burden of chronic conditions, physiotherapy services are not accessible for all people across the vast geographical landscape of the NQPHN region (NQPHN, 2021). This disparity in PHC service accessibility warrants an investigation of IPCP from the perspective of physiotherapists. Such a focused inquiry is necessary to understand how these physiotherapists can more efficiently integrate within an interprofessional health care framework to optimise resource allocation and service delivery. By examining the unique experiences of physiotherapists in engaging in IPCP, the study seeks to identify actionable insights that may significantly enhance the delivery of physiotherapy PHC services in the NQPHN region.

The Queensland context provides a unique setting for this study, with its diverse geographic landscape and the presence of numerous regional and rural communities. In these areas, physiotherapy private practitioners are often required to work in isolation from other health practitioners, potentially impacting their ability to engage in IPCP (Brems et al., 2006; Parker et al., 2013). These challenges can be amplified in regional and rural settings, where limited access to resources, professional isolation and the need for practitioners to take on multiple roles can create additional complexities (Wakerman et al., 2008).

To adequately capture the experiences of physiotherapists working in this unique context, the sample space for this study was defined as physiotherapists employed in private practice facilities within the NQPHN region. All participants met the following eligibility criteria:

- Registered physiotherapists with the AHPRA
- Employed (full time, part time, casual or locum) in a physiotherapy private practice facility within the NQPHN region
- Were over the age of 18 years and willing to consent to the study
- Were proficient in spoken and written English.

There were no exclusion criteria.

3.6 Quantitative phase

The quantitative phase of the research plays a key role in the overall methodology of this study, applying quantitative research principles to build a strong empirical base. Quantitative research is characterised by its ability to gather and analyse data numerical data, providing a method for assessing patterns and trends (Creswell & Creswell, 2023). Although often known for its capacity to

test theories and validate relationships between variables, quantitative approaches to research are also highly valuable for tasks such as collecting preliminary data (Creswell & Plano Clark, 2018).

Phase one of this study utilised a cross-sectional survey design involving physiotherapy private practitioners. This method was chosen for its efficiency in gathering data from a large sample at a single point in time, offering a comprehensive picture of the current situation without necessitating a longitudinal analysis. The gathered data provide a solid empirical baseline, essential for understanding the dynamics of IPCP within physiotherapy private practice. This phase was instrumental in laying the groundwork for subsequent qualitative exploration by identifying areas of interest and potential knowledge gaps. The insights gained from the quantitative analysis informed the development of specific research objectives for the qualitative phase.

3.6.1 Participants and recruitment

A range of sampling methods, including random, cluster and stratified sampling were considered to give physiotherapy private practitioners a voice in this study (Liamputtong, 2013). However, these methods were ultimately not used. Instead, it was considered preferable to offer all physiotherapists within the sample space the opportunity to participate. This ensured that any physiotherapists who wished to express their views on IPCP in the context of private practice could do so by completing the survey. Given that this approach to participant recruitment was not expected to provide a representative sample, the intention was to sample in two stages. After reviewing the distribution of responses from the quantitative phase, additional qualitative data would be collected through targeted visits to particular physiotherapy private practice facilities to improve the representativeness of the sample.

To identify participants, Australian postcodes representing every suburb within the NQPHN region were entered into a publicly accessible ‘Find a Physio’ search tool. This search tool is an index of physiotherapy private practice facilities in Australia maintained by the APA (https://choose.physio/findaphysio, accessed 15 May 2019). A list of private practice facilities was generated for each postcode searched and contact details of the private practices were recorded. Online business directories (for example, Yellow Pages®) were also consulted to avoid accidental omission of eligible private practice facilities. Where possible, websites of identified private practices were checked to ensure contact information was current and relevant. This process resulted in the identification of 105 physiotherapy private practice facilities within the NQPHN region.

3.6.2 Data collection

Methods are the tools, procedures, or techniques a researcher uses to generate and analyse data (Crotty, 1998). In any form of data collection, knowing what you want to find out is the impetus behind the initial choice of method (Huberman & Miles, 2002). A preliminary quantitative component, such as a survey, can precede and guide the main qualitative data collection by informing purposive sampling and establishing preliminary results for further in-depth exploration (Creswell & Plano Clark, 2018; Teddlie & Tashakkori, 2020).

In the absence of an appropriate data collection technique to explore interprofessional interactions, a survey instrument was custom designed by the multiprofessional research team. This development is detailed in Chapter 4. The development of the survey instrument also contributed to addressing the current lack of practicable yet theoretically sound instruments available for researchers to document physiotherapists' interprofessional interactions. Prior its dissemination, an expert panel comprised of three members was invited to review the survey instrument (Liamputtong, 2013). The panel members all held doctoral degrees and had over ten years of experience in physiotherapy private practice and interprofessional learning and education. They were asked to review the survey items to ensure clarity and relevance for the Australian health care context, suggest any necessary additions or deletions, and provide recommendations to enhance the overall structure and flow of the questionnaire for its intended use (Liamputtong, 2013).

The final survey instrument (Appendix 8) was primarily quantitative but included an open-ended component to capture qualitative data, aligning with the social constructivist approach of the study (Kukla, 2000). The survey was created using the Qualtrics (www.qualtrics.com) platform and distributed through an anonymous link, minimising the risk of multiple submissions since no incentive was offered for completion. To improve accessibility and response rates, the survey was also optimised for smartphone screens. Ineligible responses (for example, physiotherapists working outside the NQPHN region) and incomplete submissions were removed prior to analysis.

3.6.3 Data analysis

Once the data were compiled, descriptive statistics (frequencies and percentages) were utilised to organise and summarise the information, making it easier to understand and interpret. This step is crucial in quantitative research as it provides a foundational understanding of the data set, including basic patterns and variations within the collected data. Chi-square analysis to examine associations within the data was not possible due to very small cell counts. This type of analysis is particularly useful for identifying the presence of significant relationships between categorical variables (Liamputtong, 2013).

3.7 Qualitative phase

Following the collection of survey data in the initial phase of this study, the second phase delved deeper into the nuanced dynamics of IPCP within physiotherapy private practice through qualitative inquiry. This phase complements and expands upon the findings from the quantitative research, employing qualitative techniques to examine the intricate ways in which physiotherapists interact with, and contribute to IPCP in the private practice setting. Utilising a range of qualitative research methods, such as semi-structured interviews and participant observations, this phase aimed to capture the lived experiences, attitudes and beliefs of physiotherapy private practitioners. These methods are instrumental in understanding social phenomena from the perspectives of those directly involved, allowing for the contextualisation of issues within specific social, cultural or political environments (Charmaz, 2011). Such an approach is essential for understanding the complexity of IPCP, but also for identifying opportunities for transformative practices that could enhance collaborative efforts across diverse professions.

The qualitative phase was designed to explore several key areas identified as gaps or points of interest from the quantitative data (Creswell & Plano Clark, 2018). These included barriers to effective collaboration, the role of communication dynamics in IPCP, perceptions of role clarity and overlap, and the impact of organisational culture on collaborative processes. By engaging directly with physiotherapy private practitioners, the study sought to interpret how participants construct their world of IPCP and how these constructions influence their professional practices and interactions (Charmaz, 2011). This exploration was not necessarily concerned about validating the quantitative findings, but rather aimed to provide a richer, more nuanced understanding of IPCP. Through thematic analysis of the qualitative data, patterns and themes emerged that offered insights into the complexities of IPCP, the value placed on collaborative practice and the challenges faced in achieving optimal IPCP. This analysis highlighted the nuanced ways in which physiotherapy private practitioners navigate, negotiate and operationalise IPCP in their clinical practice.

3.7.1 Design framework

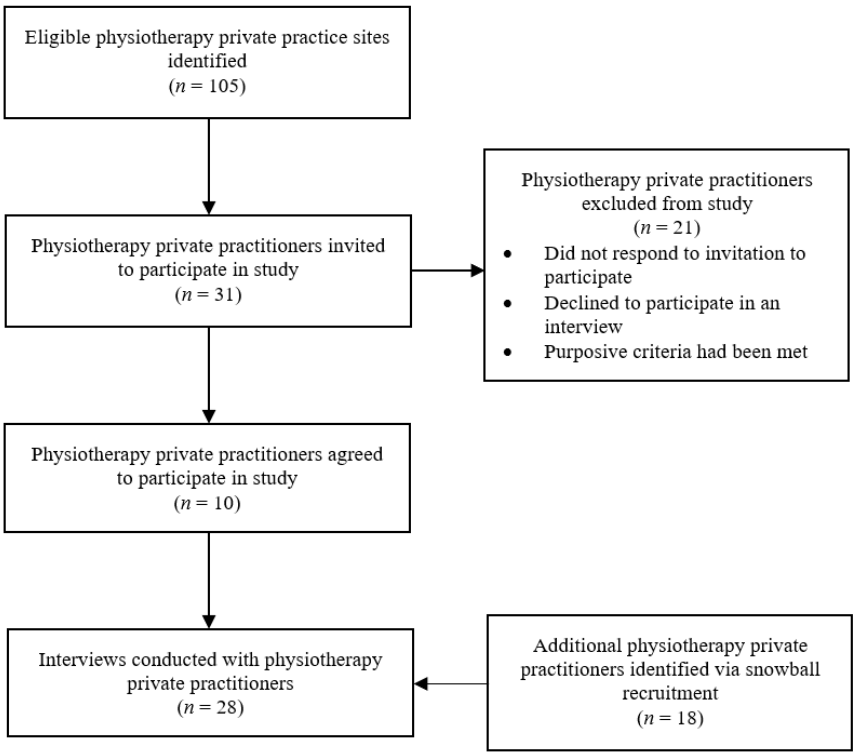
An interpretive descriptive qualitative study design was employed to qualitatively explore and describe the complex phenomenon, IPCP. Interpretive description is indicated when the purpose is to understand a phenomenon and account for its significance, particularly when little knowledge exists on the topic (Thorne, 2016). Interpretive description allows exploration of a phenomenon with the goal of identifying themes and patterns among subjective perspectives, while also accounting for variations between individuals (Hunt, 2009). As an inductive analytic approach, ID is designed to create ways of understanding clinical phenomena that yield practical applications.

3.7.2 Site selection and participant recruitment

In the first phase of the project, an online survey regarding IPCP received responses from a sample of physiotherapists. Based on the responses, potential participants for an in-depth qualitative exploration were identified. This selection process involved analysing the survey data and creating a matrix to identify suitable physiotherapists who were willing to engage in further research. To ensure a comprehensive exploration of IPCP in physiotherapy private practice in the study setting, the qualitative phase incorporated purposive and snowball sampling methods.

Purposive sampling allowed us to target physiotherapy private practice facilities that were considered to provide insight perspectives (Patton, 2015). The deliberate selection of sites for their diversity, aiming to represent different geographical locations, client demographics, team compositions and years of experience within the field was an important aspect of the qualitative phase. Additionally, snowball sampling methods were employed to broaden the participant base and include a wide variety of opinions and experiences from physiotherapy private practitioners (Patton, 2015). This approach ensured that the chosen sites provided a wide representation of voices and perspectives in the context of physiotherapy private practice (Charmaz, 2011). Although the ten organisations included in the qualitative phase represent ten physiotherapists who completed the online survey, it is worth noting that not all interview participants may have taken part in the survey study. They were, however, part of the same sampling frame for the research project as a whole. Figure 6 illustrates the site and participant recruitment process of the qualitative phase.

Figure 6. Flow chart illustrating the recruitment process for the qualitative phase.



3.7.3 Data collection

3.7.3.1 Interviews

The research employed semi-structured interviews as the primary data collection method to explore the experiences of IPCP among physiotherapists in private practice (Patton, 2015). This approach was chosen for its flexibility and depth, allowing the researcher to understand the social world from the participants' perspective and to construct knowledge through the dynamic interaction between the interviewer and interviewee (Braun & Clarke, 2013). The use of semi-structured interviews ensured that the discussions were aligned with the research objectives while allowing open exploration of each participant's unique experiences (Braun & Clark, 2013).

The interview guide was meticulously developed with reference to the project's research objectives and relevant concepts identified in the literature. This guide was subsequently piloted, resulting in minor refinements that enhanced the clarity and relevance of the questions. Feedback from the pilot testing was integral to finalising the interview guide (Appendix 10). This refined guide was employed across all sites, with slight modifications to contextualise questions for each private practice facility, ensuring relevance and comprehensiveness in the data collection process.

The researcher personally conducted all interviews, which mitigated standardisation and inter-rater reliability issues common in semi-structured interviews, but also allowed for a closer engagement with the data (Braun & Clarke, 2013). This approach facilitated the identification of themes and informed the ongoing data collection process, including the determination of when saturation was reached. To ensure accuracy and reliability, all interviews were audio-recorded and promptly backed up to a secure Cloud-based storage site. The recordings were transcribed in full by the researcher, providing an opportunity for immediate reflection on the data collected and informing the direction of future interviews. However, the demanding nature of clinical practice and the scheduling of interviews occasionally prevented immediate transcription of interviews.

This data collection strategy, informed by a matrix developed from the quantitative data, allowed for a detailed exploration of IPCP. Individual interviews were preferred over focus group interviews because it provided a confidential and non-judgmental environment for participants to freely express their views, including potential conflicts with health practitioners from other professions (Patton, 2015). This approach was effective in accommodating participants across varying levels of seniority within their respective private practice settings. For instance, less experienced practitioners may have felt hesitant to share their perspectives openly in a group discussion where more senior colleagues or supervisors were present. Individual interviews ensured that all participants could provide candid and meaningful contributions without concerns about professional dynamics or judgment.

3.7.3.2 Observation

Observational research is valued for its ability to provide firsthand experience and insight into the context and dynamics of health care settings (Mays & Pope, 1995). It allows for the discovery of aspects that may remain unnoticed by participants and offers a chance to learn things that might not be discussed in interviews (Mays & Pope, 1995). Despite the criticism of subjectivity and lack of continuity, field observations can contribute significantly to understanding social phenomena, offering a more complete understanding of complex topics where contextual influences are paramount (Charmaz, 2011).

This study employed direct, non-participant observation as a method to deliberately note the phenomenon under investigation in a field setting. This involved the researcher's immersion in participants' clinical settings for a period of at least one day at each facility. Observations were aimed at understanding the spaces (physical places), actors (the people involved), activities (a set of acts that people do) and goals (the things people are trying to accomplish), with reference to four of Spradley's (1979) nine dimensions of observation. The observation focused on the nature and structures of the communication process, the culture and dynamics that influence IPCP and the co-location or distance between physiotherapists and other health care professionals.

Short informal conversations with physiotherapists and other key staff were conducted regularly, guided by observations and aimed at clarifying emerging questions. These conversations, along with the observations, allowed the researcher to capture nuances of IPCP that may not be apparent in self-reported accounts (Mays & Pope, 1995). The researcher also attended meetings and other events (for example, in-services) as an observer, enhancing the context within which observations were made (Spradley, 1979).

3.7.4 Data analysis

Data analysis was characterised by a rigorous and iterative process, from the initial collection and coding of data to the exploration of themes through reflexive thematic analysis (Braun & Clarke, 2019). The analysis phase meticulously processed the previously collected data, which comprised verbatim interview transcripts, observational fieldnotes and detailed memos. Using NVivo software (QSR International; https://www.qsrinternational.com), this data underwent inductive coding, transforming raw data into descriptive codes and categories. This initial coding phase was crucial, as it established a foundation for identifying interpreted meanings within the data. These identified codes were then organised into broader categories and themes, ensuring they were directly aligned with the study's research objectives. This structured organisation facilitated a thorough and focused examination of the data in relation to the research objectives (Braun & Clark, 2019).

Throughout this process, the reflexivity of the research team was paramount. The iterative coding and theme development were conducted with a strong awareness of the researchers' subjectivity, emphasising that coding is reflective of the researcher's perspective and is not inherently 'right' or 'wrong' (Braun & Clarke, 2019). This reflective stance was crucial for exploring the underlying ideals, assumptions and ideologies within the data, moving beyond a mere descriptive analysis to a more interpretive and insightful examination of IPCP (Braun & Clark, 2019; Charmaz, 2011; Patton, 2015).

3.8 Ethical aspects of the research

Ethical considerations were paramount in the design and execution of the project, focusing on permissions, informed consent and ensuring the accuracy and confidentiality of the information collected. The project was designed to align with the highest standards of research ethics, adhering to the National Health and Medical Research Council (NHMRC) National Statement on the Ethical Conduct of Research (NHMRC, 2023). This commitment to ethical rigour extended to compliance with relevant Australian State and Federal legislation, as well as JCU policies and procedures, ensuring ethical integrity throughout all phases of the project. The study also strictly adhered to NHMRC guidelines, emphasising respect for participants’ autonomy, informed consent based on

adequate information and understanding and voluntary participation (NHMRC, 2023). These principles were integral to the ethical conduct of the research, ensuring the merit, integrity and justice of the study's methodology. Throughout the study, ethical considerations related to participant interaction, including privacy, confidentiality and the avoidance of harm, were diligently addressed.

Human ethics approval for the quantitative phase of the project was granted by the JCU Human Research Ethics Committee (HREC; reference number H7639; approval date 6 December 2018). For the qualitative phase, human ethics approval was similarly received from the JCU HREC reference number H7951; approval date 17 December 2019). Evidence of the ethics approvals is provided in Appendices 11 and 12. No additional ethics or governance approvals were required to gain entry into physiotherapy private practice facilities in the qualitative project phase. The researcher had no prior affiliations with the physiotherapists who participated in the research prior to study's commencement.

The participant recruitment and consent processes were thoughtfully structured to emphasise informed and voluntary participation. The data collection process commenced with an email dispatched to all identified private practice facilities in the NQPHN region, containing a hyperlink to an online survey and an attached participant information form (Appendix 13). This email was intended for practice staff, typically someone in an administrative role, who was then responsible for forwarding the email to all physiotherapists working within the facility. Upon accessing the survey, potential participants encountered detailed on-screen information outlining the research objective, emphasising the voluntary nature of their participation and highlighting their freedom to withdraw at any moment. By proceeding to submit the survey, physiotherapists implicitly consented to participate, signifying their comprehension of, and agreement to, the outlined conditions. This method ensured that engagement in the study was based on a clear and informed choice, reflecting a commitment to ethical research practices while striving to capture diverse perspectives from physiotherapists working in private practice facilities across the NQPHN region.

For those survey respondents interested and willing to contribute to further research, there was an option to provide their contact details. This action shifted their survey responses from being anonymous to confidential and therefore additional measures were taken to preserve the integrity and privacy of the collected data (NHMRC, 2023). The research team then reviewed these physiotherapists' responses, selecting those for potential inclusion in the qualitative phase and sending them an email containing a participant information form (Appendix 14). This document provided a detailed overview of the subsequent study phase, ensuring participants were informed on what their involvement would entail before any formal agreement to participate was made.

Following written agreement in the form of an email from physiotherapists indicating their interest to participate in the qualitative phase, the distinction between the employer and employees became crucial. Practice principals, owners, managers, directors or equivalents could directly consent to their practice's participation, streamlining the recruitment process. However, in the few instances where interested physiotherapists were not in these leadership positions, an additional step was necessary. Their willingness to participate relied on obtaining consent from their employers, underscoring the importance of securing both individual and organisational permissions. This dual consent approach was designed to respect workplace dynamics and ensure that participation was indeed voluntary and based on a full understanding of the study's scope.

Once all physiotherapy private practices had confirmed their willingness to participate in the second research phase, the focus shifted to data acquisition. At the initial visit to each practice, the researcher distributed the participant information form to all staff members in attendance and informed them that the researcher’s presence would involve conducting interviews with physiotherapy staff and observing physiotherapists’ activities and behaviours, which may also include interactions with health practitioners from other professions. Practice staff were then asked to sign a written informed consent form (Appendix 15) for the interviews and observations, as applicable.

A significant ethical challenge emerged when considering the dynamics between practice principals in leadership roles and their employees, particularly when the latter were young, inexperienced and female. The potential for perceived coercion was a concern, with employees possibly feeling compelled to participate due to fears of jeopardising their employment or standing within the practice. To mitigate this risk, the study emphasised the importance of genuine voluntary consent, ensuring that all participants, regardless of their position within the practice, understood that their participation was entirely optional and should not impact their employment status (NHMRC, 2023). Particular attention was given to communicating this to employees, reinforcing the principle that their involvement should reflect a personal interest in contributing to the research rather than feeling pressured by their superiors. This careful consideration of power dynamics and the proactive steps taken to address them were critical in maintaining the ethical integrity of the recruitment process and the study as a whole.

Upon the project's completion, data management was meticulously handled to ensure all collected data was securely stored, adhering to JCU’s ethics requirements. The data has now been securely archived, accurately labelled with research details, and is scheduled for destruction in line with NHMRC standards. This process upholds the confidentiality of participants and maintains the integrity of the data.

3.9 Processes to enhance quality and rigour

Various quality criteria for mixed methods research have been proposed (Creswell & Creswell, 2023; Lincoln & Guba, 1985; Yin, 2018). However, these often reflect a post-positivist worldview in which qualitative and quantitative data are used to develop a single, definitive and generalisable understanding of the research topic. Quality criteria for this study were chosen to align with the principles of a mixed methods research paradigm underpinned by a social constructivist epistemology. The social constructivist epistemology selected for the study discount the traditional empirical criteria of objectivity, reliability, and internal and external validity (Braun & Clarke, 2013; Kukla, 2000). Therefore, in this study, trustworthiness was reflected in five criteria: credibility, reflexivity, reciprocity, voice and praxis, which were woven throughout the research process, from data collection to interpretation.

3.9.1 Credibility

Credibility refers to the degree to which research can be deemed responsible and accurate and is often viewed as the most important aspect or criterion in establishing trustworthiness (Lincoln & Guba, 1985). In this study, credibility was pursued to ensure the findings authentically reflected participant perspectives and realities. This was achieved by a multifaceted strategy comprising member checking, auditability, triangulation and thick description, with each serving a unique role in reinforcing the study's integrity.

Member checking

Member checking is a process that ensures that participants have input into the interpretation of their experiences. As data were collected and analysed, the researcher integrated a process of member checking, where the researchers' interpretations of the data were shared with the participants and the participants had the opportunity to discuss and clarify the interpretation and contribute new or additional perspectives (Patton, 2015).

Auditability

Auditability refers to the 'decision trail' left by the researcher, which allows other to trace the methods used in the study (Rodgers & Cowles, 1993). The documentation in this 'decision trail' included detailed records of study timelines and methodological choices, and the rationale behind these decisions. By making this process accessible, external scrutiny is invited, facilitating a deeper understanding and validation of the research methods and findings (Rodgers & Cowles, 1993).

Triangulation

Triangulation refers to the use of multiple datasets, methods, theories or investigators to address a research question (Carter et al., 2014). In this study, triangulation was addressed by having multiple data sources and recruiting ten physiotherapy private practice sites with diverse organisational characteristics. This approach enriched the project's dataset and contributed to more robust findings by capturing varied perspectives and experiences across different settings. Additionally, investigator triangulation was utilised to minimise individual bias and ensure a broader consensus on the data's interpretation. Investigator triangulation refers to when multiple researchers independently code the data and subsequently collaborate to reach a consensus on emerging codes and categories (Carter et al., 2014). Furthermore, the practise of double coding, revisiting coded data after a period of time, served as a self-check mechanism, enhancing the accuracy of the coding process.

Thick description

Thick description refers to providing detailed, context-rich descriptions in the research findings (Creswell & Miller, 2000; Patton, 2015). It allows for a deeper understanding of the phenomena being studied and assists in transferability of findings, as it gives readers the context needed to determine how findings might apply to other settings or groups (Creswell & Miller, 2000). The goal of thick description is to create a sense of authenticity for the reader (Creswell & Miller, 2000). Detailed and specific amounts of physiotherapy private practitioners' views and experiences of IPCP were captured to help readers determine the extent to which findings were applicable to other settings.

3.9.2 Reflexivity

Reflexivity refers to the examination of one's own beliefs, judgements and practices during the research process and how these may have influenced the research (Huberman & Miles, 2002). Given the emphasis on the researcher's role in co-constructing knowledge in social constructivist research, reflexivity becomes paramount (Braun & Clarke, 2013). Reflexivity is about recognising and actively reflecting on the dynamics between the researcher and participants, including how these dynamics shape the research relationship and the data collected (Lazard & McAvoy, 2020).

Reflexivity was practised through various means in this study. Handwritten memos were a key tool, meticulously recorded after each interview to capture immediate reflections on the interactions, the data and the evolving theoretical understanding (Birks et al., 2008). These memos served as an important audit trail, documenting the researcher's thought processes, decisions and how their interpretations of the data evolved over time. This process ensured that the research remained grounded in the participants' realities and perspectives, while contributing to the study's rigour (Lazard & McAvoy, 2020).

The researcher's social positioning was also critically examined, especially regarding the insider-outsider positionality (Lazard & McAvoy, 2020; Patton, 2015). By navigating these complex identities and acknowledging how they were perceived by participants, it allowed the researcher to mitigate potential biases and foster a more authentic and equitable research relationship. This was further supported by actively engaging with the research team in discussions about fieldwork challenges and data interpretation, providing a space to critically reflect on the research process from a distance (Braun & Clark, 2013). The researcher also took conscious steps to manage their physical appearance to align with the study's methodological and theoretical foundations (Mays & Pope, 1995; Spradley, 1979). Dressing in a manner similar to practice staff, while maintaining clear identification as a researcher, facilitated easier integration into the setting and helped in establishing rapport with participants (Mays & Pope, 1995). This careful negotiation of social positioning underscored the reflexive nature of the study, ensuring that the research environment was conducive to open, honest exchanges and that the data collected truly reflected the participants' experiences and viewpoints (Lazard & McAvoy, 2020).

3.9.3 Reciprocity

Reciprocal relationships between researchers and participants are grounded in the elements of equality and exchange in which power is explicitly addressed and meaningful exchange can take place (Trainor & Bouchard, 2013). Reciprocity is underpinned by a commitment to ethical research practices that respect the dignity, autonomy and value of all participants (Charmaz, 2011). In this study, the principle of reciprocity informed every interaction and decision-making process, creating an environment where participants felt valued and respected as equal partners in the research journey (Trainor & Bouchard, 2013). Within a social constructivist framework this approach is essential to emphasise the co-construction of knowledge and recognise the participants not just as subjects, but as contributors to the research (Kukla, 2000). The study employed strategies that facilitated mutual benefit and respected the participants' knowledge and experiences. This involved engaging with participants in ways that acknowledged their expertise and perspectives, ensuring that their input directly influenced the research outcomes (Trainor & Bouchard, 2013). For example, participatory methods were integrated into the data collection process to allow participants to have a say in how information was gathered, interpreted and presented.

By recognising and mitigating power imbalances, the research also aimed to create a more equitable space for dialogue and collaboration (Trainor & Bouchard, 2013). This was achieved through reflexive practices where the researchers continuously examined their role, assumptions and the impact of their actions on the research process and relationships with participants (Braun & Clark, 2013; Lazard & McAvoy, 2020). Furthermore, reciprocity was reflected in the dissemination of findings. To ensure that the results were accessible and meaningful to participants, efforts were made

to share the research findings in ways that were directly applicable to their professional contexts. A notable initiative in this regard was the publication of a summary of the research findings in the APA's monthly publication, *InMotion* (Appendix 16). This dissemination strategy was chosen for its potential to reach a broad audience within the Australian physiotherapy community, offering insights that could be readily integrated into practice. By doing so, this underscored the practical relevance of the research, aiming to effect change and improvement in the practices studied, but also recognised the contributions of the participants.

3.9.4 Voice

The criterion of voice emphasises the critical importance of authentically and accurately representing diverse views and experiences and is particularly relevant in social constructivist research (Denzin & Lincoln, 2018; Kukla, 2000). Giving power and voice to research participants creates opportunities for them to express their views freely and contribute to research agendas (Denzin & Lincoln, 2018; Lincoln & Guba, 1985). This focus extends beyond merely collecting data to developing a profound understanding of participants' perspectives, ensuring their narratives are central to the research findings (Braun & Clark, 2013).

This study adopted several strategies aimed at amplifying participant voices. For example, during data collection special attention was paid to creating a safe and open environment where participants felt valued and heard (Braun & Clark, 2013). This was achieved through the careful design of interview questions, active listening and the facilitation of dialogues that encouraged participants to share their experiences and insights freely (Charmaz, 2011). Furthermore, data representation techniques were carefully chosen to maintain the richness and complexity of participant contributions (Denzin & Lincoln, 2018). This included the extensive use of verbatim quotes in the research findings to convey the authentic voices of the participants (Lincoln & Guba, 1985). The study provided a detailed account of the themes identified through RTA, emphasising the nuances of physiotherapists' experiences regarding IPCP in the private practice setting (Braun & Clark, 2019). Such detailed representation ensures that the diversity of perspectives is not only acknowledged but celebrated, providing a multidimensional view of the phenomenon under study (Braun & Clark, 2013; Denzin & Lincoln, 2018). The study also engaged in continuous respondent validation, a process where participants were invited to review and provide feedback on how their contributions were interpreted and presented (Lincoln & Guba, 1985; Patton, 2015). This iterative dialogue enhanced the authenticity of the representation and empowered participants, affirming their role as co-creators of knowledge (Braun & Clark, 2013; Kukla, 2000).

3.9.5 Praxis

Praxis refers to the integration of theory and action in a social context (Freire, 2000). It involves the application of knowledge and understanding to practical situations, emphasising the connection between knowing and acting (Freire, 2000). In this study, praxis was not only a procedural commitment but a philosophical commitment to ensuring that the integration of qualitative and quantitative methods enriched the comprehensive understanding of the research aim (Given, 2008). This commitment was rooted in the belief that mixed methods research, especially when underpinned by a social constructivist epistemology, should not only aim to describe and analyse complex phenomena but also strive to apply these insights in practical, transformative ways (Given, 2008; Kukla, 2000). Consequently, the quality of methodological integration was meticulously considered, with strategies employed to ensure that quantitative and qualitative data complemented and informed each other (Braun & Clark, 2013; Creswell & Plano Clark, 2018; Teddlie & Tashakkori, 2020). This involved a deliberate and thoughtful combination of data analysis techniques that allowed for the nuanced exploration of IPCP among physiotherapists, ensuring that each methodological approach contributed to a fuller, more complex understanding of the research topic (Braun & Clark, 2019; Liamputtong, 2013; Saldana et al., 2011).

Central to the notion of praxis was the intention to bridge the gap between theory and practice (Given, 2008). Although the study was designed to generate knowledge, it was also needed to consider the implications of this knowledge for improving IPCP in the physiotherapy private practice setting. This was achieved through meaningful engagement with participants and key stakeholders in the dissemination phase, where findings were presented in a manner that was accessible and actionable, encouraging reflection and dialogue on practical applications (Given, 2008). Additionally, praxis in this study was also about advocating for social change (Freire, 2000). By highlighting the challenges and opportunities associated with IPCP in physiotherapy private practice, the research aimed to contribute to broader discussions on health care delivery. The ultimate goal was to advance academic understanding and influence practice and policy, thereby making a tangible difference in the field of physiotherapy and beyond (Denzin & Lincoln, 2018; Given, 2008).

These five criteria reflect the principles of social constructivism and are designed to ensure that mixed methods research is conducted in a rigorous, ethical and meaningful way, particularly in terms of representing the diverse perspectives and experiences of participants (Braun & Clark, 2013; Kukla, 2000).

3.10 Chapter Summary

This chapter outlined the methodology employed in the study, starting with an explanation of the epistemological approach and the research design adopted. Following this, the chapter detailed the three primary data collection methods used in the study: surveys, interviews and observation. The rationale behind selecting these methods was explained and the processes employed to collect data systematically were described. The chapter also discussed the analytical strategies applied to the collected data, highlighting how these methods contribute to a robust understanding of the research aim and objectives. Ethics approvals obtained for the project were then presented. The chapter concluded with a summary of the processes used in the study to enhance the quality and rigour of the research.

Chapter 4 will present the findings from the quantitative phase of the project, including detailing the results derived from the cross-section survey study and illustrating how these findings contribute to addressing research objective 1.

Chapter 4. Phase One: Quantitative Findings

4.1 Chapter overview

This chapter presents the findings from the phase one quantitative study, addressing research objective 1. Two papers were published from this phase, and they form the basis of this chapter. Each paper includes its own introduction, methods, results, discussion, and conclusion sections. The chapter begins by describing the development of a survey instrument designed to explore the interprofessional interactions of physiotherapy private practitioners in the Australian context. Details are provided on the survey instrument development, including the literature review, survey item development, expert review, and pilot testing. The chapter then discusses the findings from the cross-sectional survey study.

4.2 Development of a survey instrument to explore the characteristics of physiotherapy private practitioners' interprofessional interactions

This section is based on a publication in the *Internet Journal of Allied Health Sciences and Practice*:

Seaton, J. A., Jones, A., Johnston, C. L., & Francis, K. (2020b). Development of a survey instrument to explore the characteristics of Australian physiotherapy private practitioners' interprofessional interactions. *The Internet Journal of Allied Health Sciences and Practice, 18*(4), 2. https://doi.org/10.46743/1540-580X/2020.1919

This article outlines the development of a survey instrument to explore the characteristics of physiotherapy private practitioners' interprofessional interactions, including the frequency, modes of communication and level of satisfaction associated with such interactions. Prior to this study, no published tool existed to collect data regarding the characteristics of interprofessional interactions from health practitioners working in clinical settings that may not adhere to formal team-based processes, including physiotherapy private practice. Information obtained from this survey may guide the development of effective interventions aimed at enhancing the nature and quality of interprofessional interactions between physiotherapy private practitioners and other health professionals in Australia.

The paper has been reformatted to be consistent with thesis formatting and is contained below. The published paper is also attached in Appendix 2.

4.2.1 Introduction

Physiotherapy represents one of the largest allied health professions in Australia, accounting for more than 40,000 qualified practitioners (AHPRA, 2023; DoHAC, 2023). Physiotherapists are responsible for the provision of services to people across the lifespan in the management of various health issues (APA, 2022). In Australia, physiotherapists are employed in both the public and private sectors and in metropolitan, regional, rural and remote locations (AHPRA, 2023; DoHAC, 2023). Most physiotherapists work primarily as clinicians and practise in a range of settings including hospitals, private practice, community and rehabilitation centres, residential aged care and sporting organisations (APA, 2022; DoHAC, 2023). The remainder of physiotherapists assume roles in areas such as management, research and tertiary education (DoHAC, 2023).

There has been a significant rise in the proportion of physiotherapists working in private practice in recent decades (Anderson et al., 2005; DoHAC, 2023). Physiotherapy private practices are described as professional businesses or for-profit organisations that are not funded through government departments (Engel et al., 2014; Perreault et al., 2014b). Private physiotherapy services are predominately funded by the individual in a FFS environment, with rebates or fee supports available through various insurance schemes (Adams et al., 2016; Duckett & Willcox, 2015). Health workforce data indicates that less than one third of physiotherapists worked in the private sector in 1975, while it was reported that seventy per cent of Australian physiotherapists were employed in private practice in 2022 (AHPRA, 2023; Anderson et al., 2005; DoHAC, 2023). This changing demographic of primary workplace may be indicative of the increasing demand for access to physiotherapy in the community (Pretorious, 2016).

Physiotherapists, including those employed in private practice, are encouraged to collaborate with health practitioners from various professional backgrounds to enhance the quality of patient care (D'Amour et al., 2008; Reeves et al., 2010). This process of IPCP refers to the interactions and relationships between and among health practitioners from different professions (WHO, 2010). The features of successful IPCP include sharing a holistic view on patient care, working together to achieve common goals and mutual respect, trust and understanding (D'Amour et al., 2005; WHO, 2010). Interprofessional collaborative practice facilitates the provision of cost-effective health care and contributes to superior patient outcomes and enhanced patient and practitioner satisfaction (Reeves et al., 2017b). Additionally, a collaborative health workforce has been shown to be more responsive and efficient and is linked to improved staff retention in rural and remote areas (Brems et al., 2006; Parker et al., 2013; Perron et al., 2022).

Interprofessional collaborative practice is best observed when formal team structures exist and opportunity for frequent, informal communication is high (Morgan et al., 2015). However, occasions

for physiotherapists to interact with health practitioners from other professions are potentially limited in physiotherapy private practice by the dominant service delivery model which is commonly a small monoprofessional clinic (DoHAC, 2023). According to a recent study, physiotherapy private practitioners in Canada perceived IPCP to be indirect and mostly limited to referrals to and from other health practitioners (Perreault et al., 2014a). As such, the nature and quality of physiotherapy private practitioners' interprofessional interactions may not align with often-found definitions of IPCP that typically involve formal meetings to discuss specific patient cases (Reeves et al., 2010). In regional and rural areas, geographic isolation, workforce shortages and service centralisation may also present as additional barriers to effective IPCP (AIHW, 2024c).

The experiences of health practitioners regarding IPCP in PHC has attracted previous attention in the literature, however most of this research concerns the professions of medicine and nursing (McInnes et al., 2015; Morgan et al., 2015; Schadewaldt et al., 2013). Despite the documented benefits of IPCP, it remains a poorly understood process in some PHC settings, such as physiotherapy private practice (Körner et al., 2016). It is unclear to what extent physiotherapy private practitioners in Australia engage in IPCP as part of their clinical practice and if they perceive to be adequately trained in this area. Furthermore, there is little information regarding physiotherapy private practitioners' clinical interactions with health practitioners from different professions, specifically the frequency, modes of communication and perceived level of satisfaction associated with these interactions.

In order to guide the development of effective interventions aimed at promoting and improving IPCP in physiotherapy private practice, it is necessary to gain a current understanding of physiotherapy private practitioners' interactions and relationships with health practitioners from various professional backgrounds. At present, no published survey instrument exists to obtain information regarding IPCP from the perspective of health practitioners, including physiotherapists, working in clinical settings that do not necessarily adhere to formal team-based processes in an Australian context.

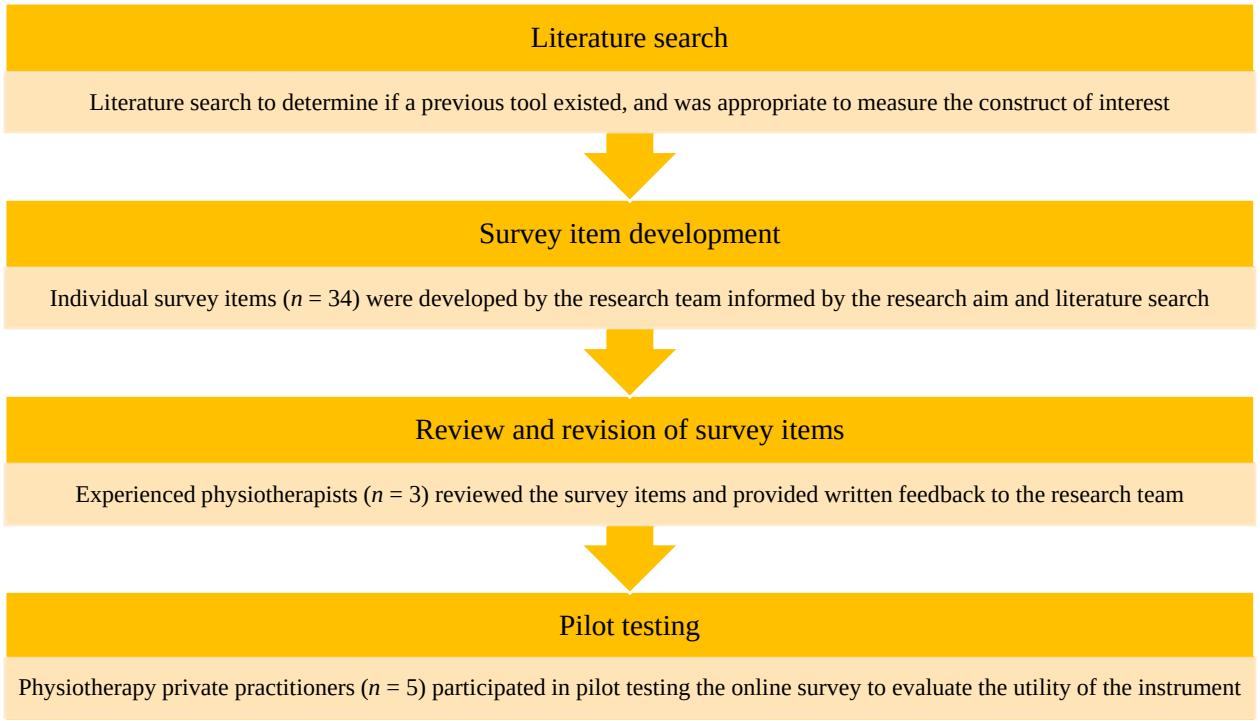
4.2.1.1 Research aim

The aim of this study was to develop a survey instrument that can be used to explore the characteristics of Australian physiotherapy private practitioners' interprofessional interactions.

4.2.2 Methods

Development of the survey instrument involved a multiphase process (Figure 7): (a) literature search; (b) survey item development; (c) review and revision of survey items; and (d) pilot testing with a sample of physiotherapists employed in private practice. Ethical approval was received from the JCU HREC (Appendix 11).

Figure 7. Phases of survey instrument development.



4.2.2.1 Literature search and survey item development

The multiprofessional research team, with professional backgrounds in physiotherapy and nursing, conducted an extensive literature search in order to identify existing surveys or questionnaires that could be used as a frame of reference for constructing a new survey instrument. Most of the measures of interprofessional interactions identified focused on the professions of medicine and nursing and many tools were designed for data collection within specific health care settings (Careau et al., 2015; Oliver et al., 2007; Shortell et al., 1991; Weiss & Davis, 1985). The search found only one published instrument used to collect data pertaining to interprofessional interactions specifically for the physiotherapy profession, however the content lacked relevance to the physiotherapy private practice workforce in Australia due to differences in service delivery (Perreault et al., 2016b).

From the literature search, and further informed by the study aim and an integrative literature review conducted by the research team (Seaton et al., 2021), a list was created containing factors that were previously cited as important when examining interprofessional interactions in other clinical

environments (Goldman et al., 2015; Reeves et al., 2009). The list was then adapted to account for the proportion of physiotherapy private practitioners in Australia who may not participate in formal interprofessional teamwork but could still have frequent interactions with health practitioners from other professions. This process resulted in the generation of 34 individual survey items, which the research team deemed adequate to represent the construct of interest.

4.2.2.2 Review and revision of initial survey items

After the initial pool of survey items was developed, three experienced physiotherapists were selected to review the items. The physiotherapists were known to the research team and were chosen due to their past clinical experience of greater than 10 years in physiotherapy private practice. One of the physiotherapists had specific experience in IPCP, while the others provided valuable insights based on their private practice experience. This range of perspectives ensured that the survey items were accessible and relevant to physiotherapy private practitioners with varying levels of IPCP familiarity. The selected physiotherapists reviewed the individual survey items to ensure they were accurate, free of item construction flaws (vulnerabilities that may make survey items subject to misinterpretation) and grammatically correct. They were also asked to identify missing elements which may influence interprofessional interactions for physiotherapy private practitioners, discern whether any items were redundant and to nominate items for deletion. The physiotherapists' responses were reviewed and consensus of all members of the research team was required prior to excluding or amending any individual survey item.

4.2.2.3 Survey instrument pilot testing

The draft survey instrument was subject to online testing to evaluate utility of the instrument. The objective of this evaluation was to ascertain whether the survey instrument functioned as intended and could be completed in a time efficient manner. A sample of physiotherapists (n = 37) employed in physiotherapy private practice facilities were invited to participate in pilot testing the online survey instrument. Purposeful sampling was used to select physiotherapy private practice facilities from one region of New South Wales, Australia. The contact details of physiotherapists were obtained via the publicly accessible 'Find a Physio' search tool (https://choose.physio/findaphysio, accessed 15 May 2019). The search tool is an index of Australian physiotherapy private practice facilities maintained by the APA. One physiotherapist at each private practice facility was sent an invitation to participate in pilot testing of the anonymous survey instrument. Each email invitation contained a participant information statement and a hyperlink to the survey instrument, hosted online using Qualtrics (www.qualtrics.com). A reminder email was sent to all participants two and four weeks following the initial invitation. Completion and submission of the online survey constituted informed participant consent.

4.2.3 Results

4.2.3.1 Review and revision of initial survey items

All three experienced physiotherapists invited to review the initial pool of survey items provided written feedback to the research team. The recommendations provided mostly related to the addition and deletion of individual survey items and minor suggestions were given to improve the clarity of the wording. One physiotherapist questioned the appropriateness of the term 'collaboration' in survey items asking participants about their day-to-day clinical interactions without reference to the relationships that they share with health practitioners from other professions and how these are formed and maintained over time. Instead, the use of the term 'interprofessional interactions' was suggested as an alternative and changes were made to the relevant survey items accordingly. Another participant recommended revising the sequence of individual survey items to ensure the survey structure was logical.

Based on the physiotherapists' feedback, two additional survey items were developed, and seven individual survey items were removed. One survey item was added to elicit further information about the clientele physiotherapy private practitioners provide services to, while another question was introduced to ask participants to rate their perceived level of satisfaction regarding their previous interprofessional interactions. A collective decision was made by the research team to delete survey items that the physiotherapists deemed to be redundant and not adequately assessing the construct of interest.

The revised draft survey instrument consisted of 29 questions in six sections: participant characteristics; workplace information; previous training regarding IPCP; clinical interactions with other health practitioners; opinions towards IPCP; and general comments. Survey item responses included a combination of closed categorical questions, Likert scale items and free text response options.

4.2.3.2 Survey instrument pilot testing

Five physiotherapists participated in pilot testing the survey instrument, with an overall response rate of 14%. The mean age of participants was 51 years (standard deviation (SD) = 11 years) and all participants reported that they had more than 10 years of clinical experience working as a physiotherapist in private practice. Every participant indicated that they were the principal physiotherapist at their respective private practice facilities. In the Australian physiotherapy private practice setting, a principal physiotherapist is typically the owner or director of the clinic. Principal physiotherapists are responsible for the overall management and administration of their practice, which includes overseeing the financial aspects of the business, as well as hiring and managing other

physiotherapists and support staff. All participants stated that they had previously been employed as a physiotherapist in other clinical settings, mainly public hospitals.

Pilot testing indicated that approximately 10 minutes (range 6 minutes, 39 seconds – 12 minutes, 25 seconds) was required to complete the survey, demonstrating that the survey length was appropriate. Review of participant responses revealed that the survey instrument was functioning as intended in its online format with respect to access via the survey hyperlink, data format rules and 'skip logic' functions. Across all questions requiring a closed categorical response, only one question yielded missing data (question 12, asking participants how often they would treat people across a range of physiotherapy clinical areas within their private practice caseload). Written responses were provided by the majority of participants (n = 4; 80%) for each question requiring a free text response.

4.2.4 Discussion

To the authors' knowledge, this is the first published survey instrument developed to allow for the collection of data regarding the characteristics of interprofessional interactions involving physiotherapy private practitioners in Australia. The survey instrument was developed with input from a multiprofessional research team, based on gaps in current literature and utilising published recommendations for survey instrument development (Liamputtong, 2013; Tsang et al., 2017). The project occurred in several well-defined stages including a literature search, survey item development, review and revision of survey items and pilot testing with a sample of physiotherapy private practitioners prior to the formulation of a final survey instrument. Individual survey items and corresponding response options were extensively reviewed and revised to minimise measurement error, with careful consideration given to the overall survey length and structure in order to enhance utility. The final survey instrument (Appendix 8), consisting of 29 questions in six sections, is user-friendly, easily comprehendible and of appropriate length and content for use with physiotherapy private practitioners in Australia.

Although the survey instrument has been developed for dissemination amongst physiotherapy private practitioners in Australia, globally IPCP is an expected standard of care for all health practitioners (D'Amour et al., 2008; WHO, 2010). Therefore, the results of this research may be of interest to physiotherapy private practitioners internationally, as well as health practitioners from different professions who work in similar clinical settings with similar clientele. This survey instrument could be adapted in the future to explore the characteristics of interprofessional interactions in various geographical locations and involving health practitioners from diverse professional backgrounds. Collecting information regarding the characteristics of interprofessional interactions from different health professions across a range of geographical contexts would enable comparison of documented clinical interactions and may offer opportunities for scopes of practice to be clarified and roles and

responsibilities to be asserted. Furthermore, this acquired knowledge could assist in the development of training strategies and practical recommendations to enhance the nature and quality of health practitioners' interprofessional interactions.

4.2.4.1 Limitations

The main limitation of this study was that a small sample of physiotherapy private practitioners from only one Australian region were invited to pilot test the survey instrument. The physiotherapists involved in pilot testing the survey instrument had a range of clinical experience, were working in a variety of physiotherapy private practice settings and their characteristics (including gender, physiotherapy qualification, location and primary scope of practice) are comparable to publicly available data on the Australian physiotherapy workforce (DoHAC, 2023). Therefore, they would appear to be generally representative of physiotherapy private practitioners currently working in Australia. Given the small sample size, no statistical or cognitive pre-testing measure could be applied to the survey instrument to assess the validity or reliability of the tool. Despite this, the survey instrument was deemed to have adequate depth and detail to represent the construct of interest, informed by written feedback provided by three experienced physiotherapists who reviewed the survey items. Although the reviewers had extensive clinical experience, only one physiotherapist had subject matter expertise in IPCP. This may be considered a potential limitation, as variations in IPCP understanding might have influenced the feedback provided. However, the inclusion of a reviewer with specific IPCP expertise ensured that the survey captured a broad range of interprofessional interactions and key dimensions of IPCP, reflecting the realities of physiotherapy private practice. An additional limitation of the study may be a response bias due to surveys only being completed by one physiotherapist at each private practice facility. However, many of the questions required factual answers rather than personal opinion, therefore it is likely that responses among physiotherapists working at the same facility would generally be consistent.

4.2.5 Conclusion

The outcome of this study is the development of a survey instrument with input from a multiprofessional research team and following detailed review by a range of physiotherapists. The survey instrument can be used to explore the characteristics of Australian physiotherapy private practitioners' interprofessional interactions, including the frequency, modes of communication and level of satisfaction associated with such interactions. Information obtained from future research utilising this survey may guide the development of effective interventions aimed at enhancing the nature and quality of clinical interactions between physiotherapy private practitioners and other health professionals in Australia.

4.3 The characteristics of physiotherapy private practitioners' interprofessional interactions: A cross-sectional survey study

This section is based on a publication in the *Australian Journal of Primary Health*:

Seaton, J. A., Jones, A. L., Johnston, C. L., & Francis, K. L. (2020a). The characteristics of Queensland private physiotherapy practitioners' interprofessional interactions: A cross-sectional survey study. *Australian Journal of Primary Health*, *26*(6), 500–506. https://doi.org/10.1071/PY20148

Physiotherapists have been described as critical to the success of PHC and have significant potential to reduce the burden on GPs with their expertise in various fields. Given that physiotherapy private practitioners make up a growing proportion of Australia's PHC workforce, yet remain understudied in the literature, research in this area was warranted.

To the best of the authors' knowledge, this is the first Australian study to explore the characteristics of physiotherapy private practitioners' interprofessional interactions, including their experiences and perceptions regarding IPCP. The findings from this study have revealed that physiotherapists employed in private practice reported their overall interprofessional interactions to be infrequent and many indicated a need for additional training related to IPCP.

This paper has been reformatted for consistency with thesis formatting and is contained below. The published paper is also attached in Appendix 3.

4.3.1 Introduction

Interprofessional collaborative practice refers to the interactions and relationships between and among health practitioners from different professional backgrounds (WHO, 2010). There is strong evidence that effective IPCP contributes to superior patient outcomes, facilitates cost-efficient health care and increases patient and practitioner satisfaction (Reeves et al., 2017b). Additionally, IPCP may address the difficulties associated with recruitment and retention of rural health practitioners by alleviating professional isolation (Brems et al., 2006; Parker et al., 2013; Perron et al., 2022). There are numerous challenges however to achieving effective IPCP in clinical practice. Communication problems, power imbalances and a lack of awareness of other health professions' expertise have the potential to hinder IPCP (Rawlinson et al., 2021; Seaton et al., 2021). Team functions such as sharing a holistic view of patient care, working towards common goals and mutual trust are symbolic of a collaborative health workforce and may overcome barriers to IPCP (D'Amour et al., 2005).

Interprofessional collaborative practice is best observed when formal team structures exist and the opportunity for frequent, informal communication is high (Morgan et al., 2015). Consequently, there is concern that IPCP may be difficult to implement in clinical settings that do not conform to formal team-based processes (Oandasan et al., 2009; Perreault et al., 2014a; Szafran et al., 2019). In physiotherapy private practice, patient care is delivered through a variety of practice models (DoHAC, 2023; Perreault et al., 2014b). These range from the sole or monoprofessional practitioner model to a multiprofessional team model of care. In Australia, the small-scale, monoprofessional clinic is the dominant service delivery model in physiotherapy private practice (DoHAC, 2023). Due to this practice model, opportunities for physiotherapists to interact with health practitioners from different professions within these facilities may be limited. Physiotherapists' knowledge, attitudes and opinions regarding what constitutes IPCP may therefore not align with models of best practice that, for example, recommend regular multiprofessional team meetings to discuss specific patient cases (D'Amour et al., 2008; Reeves et al., 2010). In clinical environments such as physiotherapy private practice, where formal team-based structures are often absent, interprofessional interactions serve as the building blocks of IPCP. These interactions include referrals and informal communication with health practitioners from other professions, offering insight into how IPCP can be operationalised in less integrated settings.

There has been a significant rise in the proportion of Australian physiotherapists working in private practice in recent decades (Engel et al., 2014). In 1975 less than one third of all physiotherapists were estimated to work in the private sector (Anderson et al., 2005), however by 2022 this had more than doubled, with private practitioners accounting for 70% of the total physiotherapy workforce in Australia (AHPRA, 2023; DoHAC, 2023). This changing demographic may reflect financial constraints on the public health system, as well as an increasing demand for access to physiotherapy

in the community (Pretorius et al., 2016). Despite the growing number of Australian physiotherapy private practitioners and the expectation for all health professionals to work collaboratively (WHO, 2010), IPCP in the physiotherapy private practice setting remains poorly understood (Körner et al., 2016).

Most of the research regarding IPCP in PHC has emanated from the professions of medicine and nursing (McInnes et al., 2015; Schadewaldt et al., 2013; Xyrichis & Lowton, 2008). Subsequently, there is a paucity of information concerning other health professions, including physiotherapy. It is unclear as to what extent physiotherapy private practitioners engage in IPCP as a part of their clinical practice and/or if they perceive themselves as adequately trained in this area. There is also minimal published information about physiotherapy private practitioners' day-to-day interactions with other health professionals, especially the frequency, modes of communication and level of satisfaction associated with these interactions.

Interprofessional collaborative practice is widely acknowledged to have positive effects on patient outcomes and the broader health system (Reeves et al., 2017b). Despite the documented benefits, little is known about IPCP from the perspective of physiotherapists and models of IPCP in the physiotherapy private sector are ill-defined. Research investigating how IPCP is influenced and operationalised for physiotherapy private practitioners working in isolation from other health professions, or clinical settings that do not conform to formal team-based structures is also scarce. In order to inform the development of robust strategies that will support sustainable models of IPCP in physiotherapy private practice, a thorough understanding of physiotherapists' interactions and relationships with health practitioners from different professional backgrounds is necessary.

4.3.1.1 Research aim

The aim of this study was to describe the characteristics of Australian physiotherapy private practitioners' interprofessional interactions, including their experiences and perceptions regarding IPCP.

4.3.2 Methods

4.3.2.1 Study design

This study was a cross-sectional survey design involving physiotherapy private practitioners in Queensland, Australia. Ethical approval for the study was granted by the JCU HREC (Appendix 11).

4.3.2.2 Survey instrument

Data were collected using a survey instrument custom developed to document information regarding IPCP from the perspective of Australian physiotherapy private practitioners. The survey instrument was developed with input from the multiprofessional research team, based on gaps in available literature and utilising published recommendations for survey item development and evaluation (Liamputtong, 2013; Tsang et al., 2017). The survey consisted of 29 questions in closed categorical, Likert scale and free text response formats. Survey content was divided into six sections: participant demographics; workplace information; previous training regarding IPCP; interprofessional interaction characteristics; experiences and perceptions of IPCP; and general comments. The survey was administered online and hosted via Qualtrics (www.qualtrics.com).

4.3.2.3 Participants and recruitment

Participants were physiotherapists employed in private practice facilities within the NQPHN area. Geographically, the NQPHN region spans over 510,000 square kilometres and is home to approximately 730,000 people (NQPHN, 2021). The majority of the population are located within the regional centres of Cairns, Mackay and Townsville, but a significant amount of the population lives in rural and remote areas (NQPHN, 2021). To be eligible for inclusion, participants were required to be registered as a physiotherapist with the AHPRA. There were no exclusion criteria.

To identify participants, Australian postcodes representing every suburb within the NQPHN region were entered into a publicly accessible 'Find a Physio' search tool. This search tool is an index of physiotherapy private practice facilities in Australia maintained by the APA (https://choose.physio/findaphysio, accessed 15 May 2019). A list of private practice facilities was generated for each postcode searched and contact details of the private practices were recorded. Online business directories were also consulted to avoid accidental omission of eligible private practice facilities. Where possible, websites of identified private practices were checked to ensure contact information was current and relevant. This process resulted in the identification of 105 physiotherapy private practice facilities within the NQPHN region.

4.3.2.4 Data collection

Once eligible private practices had been identified, all physiotherapists at each facility were emailed an invitation to participate in the study. Invitations contained a participant information statement and hyperlink to the online survey. When physiotherapists' email addresses were not known, an invitation to participate was sent to the practice manager or administrative personnel, who were asked to forward the email invitation to physiotherapists on behalf of the research team. To calculate a response rate, these personnel were also requested to inform the research team of the number of

physiotherapists at their private practice facility who were emailed an invitation. In total, 243 physiotherapy private practitioners employed within the NQPHN region were invited to participate in the survey. A single reminder email was sent three weeks after the initial invitation. Completion and submission of the online survey constituted informed participant consent.

4.3.2.5 Data analysis

Data for the closed categorical and Likert scale questions were coded numerically and input into SPSS version 25.0 (IBM, Armonk, NY, USA), while free text responses were extracted into a Microsoft® Excel spreadsheet. All closed categorical responses were analysed descriptively using frequencies and percentages. Responses to Likert questions whereby participants were asked to report the frequency of patient presentation for different physiotherapy clinical areas at their private practice facility, as well as their frequency of interaction with particular health professionals, were collapsed into two categories. All 'never' and 'rarely' response options were combined and relabelled 'less frequent', whereas all 'sometimes' and 'often' response options were combined and relabelled 'more frequent'. Responses to the open-ended questions were collated and thematic analysis was performed (Braun & Clark, 2006). The primary researcher (JS) read the information presented multiple times to make preliminary observations before initiating open coding of all the data. The entire research team then compared the codes to derived insights from the literature on IPCP. Specific attention was paid to participants' perceived benefits of, and barriers to IPCP in physiotherapy private practice. Next, the codes obtained from the open coding process were categorised into sub-themes, which were later regrouped into a final set of themes. To ensure reliability, the themes were discussed among all members of the research team until consensus was reached (Braun & Clark, 2006; Creswell & Plano Clark, 2018).

4.3.3 Results

4.3.3.1 Participant demographics and workplace information

Forty-nine responses were received from the 243 invited to participate, a response rate of 20%. The mean age of survey participants was 36 years (range 22–60, SD = 11 years) and they obtained their entry-level physiotherapy qualification approximately 14 years prior (range 1 – 38 years ago, SD = 11 years). A majority of respondents (n = 36; 73%) reported that they had previously been employed as a physiotherapist in another clinical setting, including public hospitals (n = 24; 49%), private hospitals (n = 14; 29%) and community health centres (n = 12; 24%). The demographic data and professional characteristics of respondents are presented below in Table 4.

Table 4. Survey respondents' demographics and professional characteristics.

Participant characteristics	*n* (%)
Sex	
Female	30 (61)
Male	19 (39)
Entry-level physiotherapy qualification	
Bachelor degree	35 (71)
Bachelor (Honours) degree	8 (17)
Graduate-entry Masters degree	6 (12)
Location of entry-level training	
Australia	40 (82)
Overseas[A]	9 (18)
Years of clinical physiotherapy experience	
< 10 years	26 (53)
11 – 20 years	11 (22)
> 20 years	12 (25)
Years of private practice experience	
< 10 years	29 (59)
11 – 20 years	15 (31)
> 20 years	5 (10)

[A]Overseas = Canada, New Zealand, Netherlands, United Kingdom.

For the purposes of this study, a monoprofessional practice refers to a sole practitioner model of care or a facility only employing one professional group (for example, physiotherapists), whereas a multiprofessional practice incorporates health practitioners from two or more professional groups. Co-location refers to health services that are situated in the same physical space (for example, an office, building or campus), but operate independently. This means co-located services may share physical proximity but typically maintain separate organisational structures, policies, and clinical systems, such as patient records or treatment protocols. Over half of the respondents (n = 27; 55%) reported that their physiotherapy private practice setting was a monoprofessional clinic, with 45% (n = 22) indicating that they worked in a multiprofessional private practice. Less than half of participants (n = 18; 36%) reported that their private practice was co-located with at least one other health service. Many participants (n = 27; 55%) indicated that they were the principal physiotherapist at their private practice facility.

Respondent workplace information, including data regarding participants' reported frequency of patient presentation across different physiotherapy clinical areas, is provided below in Table 5.

Table 5. Survey respondents' work type and place.

Participant workplace information	n (%)
Type of private practice setting	
Sole mono-professional facility	18 (37)
Sole multi-professional facility	13 (27)
Co-located mono-professional facility	9 (18)
Co-located multi-professional facility	9 (18)
Clinical area of patient presentation[A]	
Cardiorespiratory	8 (16)
General rehabilitation	38 (78)
Musculoskeletal	48 (98)
Neurological	20 (41)
Occupational rehabilitation	26 (53)
Orthopaedics or trauma	39 (80)
Sports	40 (82)
Vestibular rehabilitation	15 (31)
Women's health	19 (39)
Classification of workplace location (MMM)[B]	
MMM 1	0 (0)
MMM 2	35 (72)
MMM 3	0 (0)
MMM 4	8 (16)
MMM 5	5 (10)
MMM 6	1 (2)
MMM 7	0 (0)

[A]Based on the recoded Likert response variable 'more frequent'
[B]MMM = Modified Monash Model classification system that categorises different areas in Australia based on population and geographical location. It consists of seven categories, with MMM Category 1 representing metropolitan areas and MMM Category 7 representing very remote communities.

4.3.3.2 Previous training in interprofessional collaborative practice

Most respondents (*n* = 34; 69%) reported having received some form of training regarding IPCP in their entry-level physiotherapy qualification. A small proportion (*n* = 10; 20%) had subsequently participated in additional training. Entry-level training was delivered in the form of clinical placements (*n* = 31; 63%), lectures or seminars (*n* = 29; 59%), practicum or tutorials (*n* = 20; 41%), online learning modules (*n* = 9; 18%) and simulation-based learning environments (*n* = 8; 16%). Nearly half of all participants (*n* = 23; 47%) indicated that they required more training regarding IPCP.

4.3.3.3 Interprofessional interactions characteristics

Information relating to the frequency, modes of communication and level of satisfaction associated with participants' interprofessional interactions is provided below in Table 6.

Table 6. Characteristics of survey respondents' interprofessional interactions.

Interprofessional interaction characteristics	n (%)
Overall frequency	
Daily	14 (29)
More than once a week	19 (39)
Once a week	5 (10)
Less than once a week	11 (22)
Means of communication	
Email	44 (90)
Face-to-face planned meeting	15 (31)
Face-to-face unplanned meeting	22 (45)
Joint evaluation or intervention	6 (12)
Letter or from sent by fax or mail	37 (75)
Letter or form sent through patient	24 (49)
Telephone	39 (80)
Verbal message through patient	19 (39)
Videoconference	1 (2)
Overall level of satisfaction	
Very satisfied	12 (25)
Moderately satisfied	25 (51)
Slightly satisfied	10 (20)
Not at all satisfied	2 (4)

Participants were asked to indicate their frequency of interactions with various health professionals. Data pertaining to participants' 'more frequent' interprofessional interactions are presented below in Table 7.

4.3.3.4 Experiences and perceptions of interprofessional collaborative practice

Most physiotherapy private practitioners (n = 48; 98%) considered IPCP necessary to provide adequate patient care. The majority of physiotherapists (n = 46; 94%) provided responses to the open-ended survey questions. Thematic analysis of open-ended responses identified four major themes in relation to the benefits and challenges associated with IPCP in physiotherapy private practice and are described below.

Table 7. Survey respondents' 'more frequent' interactions with various health professionals.

Type of health professional	n (%)
Chiropractors	5 (10)
Dieticians	10 (20)
Exercise physiologists	32 (65)
General practitioners	47 (96)
Massage therapists	29 (59)
Medical specialists	39 (80)
Nurses	9 (18)
Occupational therapists	29 (59)
Osteopaths	2 (4)
Pharmacists	6 (12)
Podiatrists	24 (49)
Psychologists	12 (25)
Speech pathologists	3 (6)

*Based on the recoded Likert response variable 'more frequent'

Theme 1: Superior patient outcomes

Respondents commented that IPCP has significant potential to contribute to superior patient outcomes and that effective IPCP ensures that all health practitioners involved in a person's care are communicating and working towards common goals to achieve the best outcomes.

> *"Optimal patient outcomes depend on numerous perspectives, not just those of physiotherapy."* (Participant 9)

> *"It is vital that we maintain timely, accurate and open communication between treating health professionals and refer as necessary for best possible outcomes."* (Participant 44)

> *"It … helps clients achieve their [the clients'] goal with consistency between all key stakeholders."* (Participant 6)

Theme 2: Holistic patient care

The need for IPCP in the provision of holistic, person-centred care was acknowledged by many respondents and the value of input from health practitioners across various professional backgrounds to obtain a broader understanding of a patient's clinical picture was highlighted.

> *"Without a holistic picture and a collaborative approach, you cannot treat as efficiently and effectively."* (Participant 6)

"… many medical and psychological co-issues cannot be managed by physiotherapy, and as such it is important to have good working communication with the relevant professionals to address these." (Participant 9)

"Everyone has individual skills, bring them all together we have a multitude of skills likely to effectively help the patient." (Participant 37)

Theme 3: Time constraints and caseload demands

Most respondents stated that busy clinical schedules were a significant barrier to participation in IPCP. Finding the time to complete written communication was difficult due to high caseload requirements. Of those respondents who reported taking the time to write letters to other health professionals, many viewed this process as one-sided with replies to the original physiotherapy correspondence rarely received. Several respondents stated that discussing specific patient cases with health practitioners from other professions relied on clinical availability. This was considered an onerous task as it required coordination between all health practitioners involved in a client's care.

"Time is often a barrier to quick response from other clinicians due to heavy workloads." (Participant 44)

"… time sending doctors letters but never knowing if they read them or actually take on board any ideas or recommendations." (Participant 19)

"I sometimes need to discuss cases with treating orthopaedic surgeons who are busy and difficult to get a hold of." (Participant 49)

Theme 4: Awareness of the physiotherapy profession

This theme pertains to the importance of recognising the contributions of health practitioners from diverse professional backgrounds in order to facilitate effective IPCP. Many respondents remarked that health practitioners from other professions appeared to lack knowledge and understanding of the physiotherapy profession and the services that physiotherapy private practitioners provide to people across the lifespan. However, some respondents affirmed that they felt it was their responsibility to educate other health professionals regarding the role of physiotherapy and that this, in turn, would stimulate appropriate referral patterns.

"I feel collaboration within allied health is fine however the main limitations are dealing with the medical profession due to their incredibly poor awareness of what our treatment actually is." (Participant 39)

"Others are not aware of that I do so I spend a lot of my time trying to market my role." (Participant 1)

"I find it worth the time in educating other professionals on what our role is and spreading the word about what we can offer our clients." (Participant 11)

4.3.4 Discussion

This is the first known study to document the characteristics of Australian physiotherapy private practitioners' frequency of interprofessional interactions and the modes of communication and perceived level of satisfaction associated with these interactions. Several main findings from the study emerged: (a) physiotherapists employed in private practice acknowledged the importance of IPCP in providing holistic client care, but reported their overall interprofessional interactions to be infrequent; (b) they utilised various communication methods to facilitate interprofessional interactions; (c) most possessed a moderate to high degree of satisfaction regarding their interprofessional interactions; and (d) many physiotherapy private practitioners indicated a need for more training related to IPCP.

Thematic analysis of responses to the open-ended survey items revealed that physiotherapists were aware of the value of IPCP in the provision of holistic client-centred care. However, quantitative survey data showed that interprofessional interactions took place less than once a week for nearly one quarter of all study participants and were a daily occurrence for about a third of physiotherapy private practitioners. This study suggests that small monoprofessional clinics remain a common physiotherapy service delivery model in private practice, which may explain these findings. By virtue of the practice model, monoprofessional private practice facilities may not offer physiotherapists adequate ability to engage in IPCP. Co-location and integration of health professionals within the same organisation or physical space is proposed to increase the frequency and intensity of IPCP in PHC by increasing opportunity for brief, informal face-to-face communication (for example, corridor discussions) (Bonciani et al., 2018; Morgan et al., 2015; Wener & Woodgate, 2016). Despite an increased shift towards a co-located PHC model (Bonciani et al., 2018), the extent to which this has been implemented in the Australian physiotherapy private practice setting remains largely unknown. More research is needed to understand the context-specific organisational and system-level factors that influence the nature and quality of IPCP in physiotherapy private practice.

Physiotherapy private practitioners interacted most often with medical practitioners, exercise physiologists (EPs), massage therapists and podiatrists, but rarely or never interacted with osteopaths, speech pathologists or chiropractors. A number of reasons may explain this variability. Physiotherapists working in private practice are likely to receive a significant amount of client referrals from GPs and medical specialists (Dennis et al., 2017). As such, medical professionals may

be considered central participants in physiotherapy private practitioners' interprofessional service delivery. However, previous studies have shown that private practitioners predominately interacted with health professionals employed at their facility (Myburgh et al., 2014; Perreault et al., 2014a). Given that many survey respondents worked in multiprofessional private practice facilities, this could explain why physiotherapists reported frequent interactions with EPs, massage therapists, OTs and podiatrists. Physiotherapy private practitioners who employ other health professionals within their clinic have regarded this as a strategy to overcome a potential loss of clientele (Perreault et al., 2014a). For example, a physiotherapist working in a monoprofessional private practice setting may refrain from referring to an OT employed at a multiprofessional clinic if physiotherapy services are also offered, thereby limiting interprofessional contact due to financial considerations (Perreault et al., 2014a). Furthermore, physiotherapists working in private practice may have limited interaction with health practitioners from some professions because the nature of their clientele may not warrant initiation of IPCP.

Email, telephone and facsimile were the most reported means of communication that physiotherapy private practitioners used to facilitate their interprofessional interactions. Most respondents did not participate in scheduled, face-to-face interprofessional team meetings, which may reflect their workplaces' organisational structure. Physiotherapy private practitioners may not consider formal, time-intensive meetings to be viable in the absence of financial incentives to support their application in clinical practice. Perhaps surprisingly, the majority of respondents had not utilised videoconferencing methods to support their interprofessional interactions. The role of technology in supporting IPCP for privately practising health professionals remains unexplored, suggesting a direction for future research.

A need for further training in the area of IPCP was identified by approximately half of all survey respondents. The assumption that health professionals, including physiotherapy private practitioners, understand what constitutes IPCP and intuitively know how to work collaboratively is perhaps a misconception (Reeves et al., 2010; Szafran et al., 2018). Given that nearly all respondents reported frequent interactions with medical practitioners, physiotherapists may have overstated various activities (for example, receiving a client referral letter) to denote IPCP. However, it is also possible that physiotherapy private practitioners do not possess adequate understanding of certain professions and may lack awareness of the services they provide. Training needs assessments are required to explore physiotherapy private practitioners' knowledge, skills and level of competency regarding IPCP. Conducting these assessments may enable the development of interventions that are appropriately tailored to meet the specific training needs of physiotherapists in private practice, including those employed in facilities that may not conform to formal team-based structures.

4.3.4.1 Limitations

The main limitations of the present study are the low response rate and the inclusion of participants from only one region in Australia. The respondents had a range of clinical experience, were working in a variety of physiotherapy private practice settings and their characteristics (including gender, physiotherapy qualification and primary scope of practice) are comparable to publicly available data on the Australian physiotherapy workforce (AHPRA, 2023; DoHAC, 2023). Therefore, they would appear to be generally representative of physiotherapy private practitioners currently working in regional, rural and remote Australia. The use of a non-validated survey instrument is an additional study limitation. However, the survey instrument was deemed to have adequate depth and detail to represent the construct of interest upon review by a range of physiotherapists (Seaton et al., 2020b). Furthermore, principal physiotherapists mostly completed the survey, and it is possible that responses received from other physiotherapists working at the same practice could have differed. As senior members of staff, practice principals may have considered themselves the most appropriate person to provide information regarding IPCP at their respective facilities. A final limitation of the study may be the reliance on physiotherapy managers and administration staff of identified private practice facilities to distribute email invitations to participants on behalf of the research team. However, the distribution of reminder emails at three weeks following the initial invitation was sufficient in ensuring invitations were distributed and all relevant gatekeepers provided the research team with the number of physiotherapy private practitioners invited to participate, as requested.

4.3.5 Conclusion

This study has described the characteristics of physiotherapy private practitioners' interprofessional interactions, including their experiences and perceptions regarding IPCP. Although physiotherapists recognised the importance of IPCP in holistic client care, their reported frequency of interprofessional interactions in the form of face-to-face meetings, shared consultations and videoconferencing technologies was low and it is possible that they overstated IPCP to constitute tasks such as receiving referrals and sending client correspondence. The incongruence between qualitative and quantitative data in this study emphasises the need for more rigorous research. The specific training needs of physiotherapy private practitioners in the field of IPE and practice also warrants further investigation. Future studies should consider the use of qualitative design frameworks to examine how the nature of IPCP in physiotherapy private practice is influenced by various context-specific financial, organisational and structural factors. Such research may lead to the implementation of flexible, robust strategies that will support sustainable models of IPCP in physiotherapy private practice.

4.4 Chapter Summary

Chapter 4 has presented and discussed the quantitative findings of the study. The chapter contained two published manuscripts that addressed objective 1. The first paper detailed the development of a survey instrument to explore IPCP in physiotherapy private practice in the Australian context, and the second paper outlined the characteristics of interprofessional interactions among physiotherapy private practitioners in the NQPHN region.

Consistent with a mixed method sequential explanatory design, the results of the quantitative data were used to inform the qualitative phase of the study. Chapter 5 will therefore present the qualitative data from the study. In particular, the chapter presents four published articles drawn from the interview and observation data.

Chapter 5. Phase Two: Qualitative Findings

5.1 Chapter overview

This chapter presents the findings from the second phase of the study, which qualitatively explores IPCP from the perspective of Australian physiotherapy private practitioners to address research objectives 2, 3 and 4. Four papers were published from this phase, and they form the basis of this chapter. Each paper includes its own introduction, methods, results, discussion, and conclusion sections. The chapter begins by presenting information regarding physiotherapy private practitioners' perceived benefits and disadvantages of IPCP. It then provides a comprehensive discussion of the facilitators of, and barriers to, IPCP among physiotherapy private practitioners. The chapter concludes by presenting strategies endorsed by physiotherapy private practitioners to enhance IPCP in the Australian context.

5.2 Physiotherapy private practitioners' perceived effects of interprofessional collaborative practice

This section is based on a publication in the *Journal of Interprofessional Care*:

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2024a). Physiotherapy private practitioners' opinions regarding interprofessional collaborative practice: A qualitative study. *Journal of Interprofessional Care*, *38*(1), 10–21. https://doi.org/10.1080/13561820.2023.2221687

To the best of the authors' knowledge, this is the first qualitative study to examine the views and experiences of Australian physiotherapy private practitioners regarding IPCP. The findings from this research have revealed that physiotherapy private practitioners value IPCP because it can deliver superior patient outcomes, strengthen interprofessional relationships and has the potential to enhance the professional reputation of the organisations within which they work. Physiotherapists also claimed, however, that IPCP can contribute to poor client outcomes when performed inappropriately and may occasionally result in lost clientele.

The paper has been reformatted for consistency with thesis formatting and is contained below. The published paper is also attached in Appendix 4.

5.2.1 Introduction

There are calls for changes to models of care internationally to reduce fragmented health care systems (WHO, 2010). Such systems are characterised by structural flaws in funding and governance and contribute to inefficiencies and inequities in health care provision (Organisation for Economic Co-operation and Development, 2015). Implementing collaborative care models is widely recognised as a key strategy in moving health care systems from fragmentation to positions of strength (WHO, 2010). Interprofessional collaborative practice has been defined as "a situation when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers and communities to deliver the highest quality of care across settings" (WHO, 2010, p.13). Physiotherapists have been recognised as crucial members of collaborative practice models in PHC due to their potential to address issues associated with an increased chronic disease burden, an ageing population, rapidly rising health care costs and human resource shortages (Adams et al., 2014; Maharaj et al., 2018; Sangaleti et al., 2017). Despite making up a growing proportion of Australia's PHC workforce (Anderson et al., 2005; DoHAC, 2023), there is limited published information pertaining to physiotherapy private practitioners' opinions of IPCP.

5.2.2 Background

When IPCP is employed, the full scope of knowledge, skills and abilities of available health practitioners can be utilised and the provision of patient care is more likely to be safe, timely, efficient, effective and equitable (IPEC, 2016). Effective IPCP creates positive interaction, engenders mutual trust and support, encourages communication between professions and limits demand on a single profession (Reeves et al., 2017b). Organisational improvements are facilitated by enhancing care coordination and continuity, promoting equality of status between professionals, increasing job satisfaction and engagement and creating a healthy workplace (Gilles et al., 2020). however, interventions carried out by a team that is not functioning well can be less effective than those professionals working independently and in some practice contexts the implementation of IPCP could be unnecessary (Körner et al., 2016; Perreault et al., 2014a).

In the Australian physiotherapy private practice context, the small-scale, monoprofessional clinic is the dominant service delivery model (DoHAC, 2023). These single specialty clinics refer to a sole practitioner model of care or a facility only employing one professional group. Opportunities for unplanned informal contact and spontaneous interaction with health practitioners from different professions may be scarce for physiotherapists working within these practice models (Bennett-Emslie & McIntosh, 1995). Physiotherapy private practitioners' perceptions regarding what constitutes IPCP may therefore not align with models of best practice that, for example, promote regular

multiprofessional team meetings to discuss specific patient cases (D'Amour et al., 2008; IPEC, 2016; Reeves et al., 2010).

Concerns have been highlighted regarding the feasibility of engaging in IPCP when health practitioners work in isolation from one another, or in clinical settings that do not conform to formal team-based processes (Oandasan et al., 2009; Perreault et al., 2014a; Szafran et al., 2019). Most research documenting IPCP in PHC, however, has focused on collaboration between medical and nursing practitioners (McInnes et al., 2015; Schadewaldt et al., 2013). Subsequently, published models of IPCP in the physiotherapy private practice setting are ill-defined (Seaton et al., 2021). Furthermore, failure to acknowledge the complexity and specificity of the PHC context, such as differences in the public and private health sectors, may lead to poor practices and misunderstandings regarding IPCP (Barrow et al., 2015). To inform the development of practical fit-for-purpose strategies which can support sustainable models of collaborative practice in the physiotherapy private sector, it is essential to understand physiotherapy private practitioners' perceptions of IPCP.

5.2.2.1 Research aim

The aim of this study was to investigate physiotherapy private practitioners' attitudes and opinions regarding the proposed effects (positive and negative) of IPCP.

5.2.3 Methods

5.2.3.1 Study design

A qualitative research design oriented toward ID was employed to enable physiotherapists to share their views and experiences regarding IPCP in the private practice setting (Thorne et al., 1997). As an inductive analytical approach explicitly built on constructivist epistemological assumptions, ID asserts that knowledge is not absolute, but is "socially constructed through the subjective person who experiences it" (Thorne, 2008, p. 49). Interpretive description draws on experiences and evidence from the clinical setting leading to findings with clear implications for practice, rather than research that aims to theorise (Thorne et al., 2016). Ethics approval was obtained from the JCU HREC (Appendix 12).

5.2.3.2 Study setting

Participants were physiotherapists from private practice facilities in the region covered by the NQPHN. Spanning an area of 510,000 square kilometres, this tropical environment is home to an estimated 730,000 people (NQPHN, 2021). Most of the population are located within the major regional centres of Cairns, Mackay and Townsville, while approximately 8% of inhabitants live in remote and very remote areas (NQPHN, 2021).

5.2.3.3 Site selection and participant recruitment

Site selection was informed by the findings of the online survey conducted in the first phase of the study. Eligible sites (*n* = 105) were identified from the publicly accessible 'Find a Physio' search tool, an index of physiotherapy private practice facilities in Australia maintained by the APA (https://choose.physio/findaphysio, accessed 15 May 2019), as well as online business directories (for example, Yellow Pages®).

Recruitment was conducted using a combination of email with telephone follow-ups. All physiotherapy private practitioners (*n* = 31) who expressed interest in further participation by providing contact information on their submitted survey were emailed. The initial email invitation included a participant information sheet, containing detail of the study purpose, the role and experience of the first author and interviewer as a male physiotherapist and current doctoral candidate. Recruitment was predominately convenience based, in that participants were selected on a first-come-first-served basis (Robinson, 2014). This approach was used to efficiently recruit participants who were readily available and willing to participate in the study. A semi-purposive stratified element was also used to ensure physiotherapists worked at a range of private practice sites, varying with respect to organisational model, service provision, team composition and geographic location (Robinson, 2014). Physiotherapy private practitioners who agreed to participate in the study (*n* =10) were then asked to identify physiotherapists employed at their facility to take part in an interview through a process of snowball sampling. Invitations to participate in an interview were sent to all additionally identified individuals (*n* = 18).

To be included in the study, participants were required to be: (a) registered physiotherapists with the AHPRA; (b) employed in a physiotherapy private practice facility within the NQPHN region for no less than one month; (c) over the age of 18 years and willing to consent to the study; and (d) proficient in spoken and written English. No study participants had a working relationship with the research team. Figure 6 (refer to section 3.7.2) illustrated the recruitment process for the qualitative phase of the project.

5.2.3.4 Data collection

Semi-structured face-to-face interviews were carried out by the first author at physiotherapy private practice sites within the NQPHN region between March 2020 and February 2021. Semi-structured interviews ensure that the data from each interview align with the research aim yet allows open exploration of each participant's unique experiences and views of IPCP (Braun & Clark, 2013; Patton, 2015). An interview guide was developed by the multiprofessional research team and informed by the findings from phase one, which were used to frame the questions and serve as stimulus material for

the interviews. The interview guide was piloted with two physiotherapists who had greater than ten years clinical experience in private practice to ensure that questions and exploratory probes elicited responses with the intended focus on participants' opinions regarding IPCP in the physiotherapy private sector. The final interview guide is available in Appendix 10.

As interviews commenced, demographic information was collected in the form of a brief paper-based questionnaire to provide context for participants' experiences (Appendix 9). Interviews were conducted individually in private consultation rooms at each facility and duration ranged from 16 to 117 minutes (mean = 39 minutes). Interviews continued until each participant indicated that they did not have anything else to share. Memos were immediately recorded after each interview to ensure that a reflexive stance was maintained in relation to the research and participants (Birks et al., 2008). All participants provided written informed consent and agreed to the interview being audio-recorded and transcribed. Audio-recorded interviews were transcribed verbatim with the assistance of secure online transcription software (www.otter.ai). Each participant was provided with a copy of the interview transcription and an opportunity to correct or remove any data before the analysis (Patton, 2015).

5.2.3.5 Data analysis

Reflexive thematic analysis (RTA) was used to facilitate the identification of patterns or themes in the data (Braun & Clarke, 2019). This inductive, iterative approach allowed for flexibility in the interpretation of the data and investigation of both surface meanings and underlying assumptions. Reflexive thematic analysis aligns well with ID because both prioritise reflexivity and aim to understand the contextual meanings that individuals attached to their lived experiences (Braun & Clarke, 2019; Thorne, 2008).

The first step in the data analysis process was familiarisation with the data through careful and repeated reading of transcripts and memos, noting casual observations of initial trends. Open coding was subsequently performed which involved a line-by-line examination of the data to identify preliminary codes. For the first five transcripts, coding was completed independently by two authors (JS and AJ) to sense-check ideas and explore multiple assumptions of the data in a reflexive manner. Crucial to this process was the authors' shared understanding of terminology and concepts relevant to IPCP (Braun & Clarke, 2019). After this step, codes were gradually consolidated and grouped into themes relating to participants' opinions regarding IPCP. Themes were then refined and named collectively by the research team. Endorsed themes were worked into a comprehensive description and populated with quotes to ensure grounding in the data and representation across participants to provide an integrated account of participants' views and experiences of IPCP. Data were managed using NVivo software (QSR International; https://www.qsrinternational.com).

5.2.4 Results

5.2.4.1 Participants

Physiotherapists from a total of ten different private practice sites within the NQPHN region agreed to participate in the qualitative phase of the project. The characteristics of the participating sites are presented in Table 8 below. Six of the ten clinics were co-located with at least one other health service.

Individual interviews were conducted with 28 physiotherapists (Table 9). The mean age of interview participants was 33 years (range 21–61 years) and they had approximately nine years of clinical experience (range 1–38 years).

5.2.4.2 Themes

Reflexive thematic analysis of the data produced five overarching themes: (a) quality of care considerations; (b) not a one-size-fits-all approach; (c) the need for effective interprofessional communication; (d) fostering a positive work culture; and (e) fear of losing clientele.

Theme 1: Quality of care considerations

This theme describes the perceived effects of IPCP on quality of care. Nearly all participants explained that IPCP has the potential to significantly enhance the quality of client care: *"I think it's extremely important to have interprofessional collaboration in place for the client to address their needs comprehensively."* (Participant 1, Site 10) Participants associated IPCP with the notion of the right care in the right place at the right time with the right practitioner: *"… there's lots of benefits of interprofessional collaboration. In terms of positives for the patient, they probably get the best care from the best provider for that particular problem or area."* (Participant 15, Site 4) Interprofessional collaborative practice was likened to providing optimal care from the most appropriate practitioner for a given complaint.

> *"It might be someone starts with intervention from a physio for something that's quite specific, and then through that it's recognised that actually we need to address some of your chronic health issues to maybe reduce your risk of future problems and … the best person for you now is the exercise physiologist."* (Participant 28, Site 9)

Table 8. Characteristics of the participating private practice sites in the qualitative phase.

Site number	Organisational model	Primary physiotherapy clinical area	Physiotherapy services provided*	Health professions employed	Co-located health services	Classification of facility location (MMM)
1	Multiprofessional	Neurological	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology (*n* = 2) Nursing (*n* = 1) Nutrition and dietetics (*n* = 4) Occupational therapy (*n* = 8) Physiotherapy (*n* = 6) Psychology (*n* = 4) Social work (*n* = 1) Therapy assistant (*n* = 5)	Nil	MMM 2
2	Monoprofessional	Paediatrics	NDIS Telehealth	Physiotherapy (*n* = 1)	Nil	MMM 2
3	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Physiotherapy (*n* = 3)	Dental clinic GP clinic Pathology Pharmacy Podiatry	MMM 2
4	Multiprofessional	Musculoskeletal	DVA Medicare CDM NDIS Work injury compensation	Exercise physiology (*n* = 1) Physiotherapy (*n* = 4)	Occupational therapy Speech pathology	MMM 4
5	Monoprofessional	Musculoskeletal	DVA Medicare CDM Work injury compensation	Physiotherapy (*n* = 1)	Massage therapy Podiatry	MMM 5
6	Multiprofessional	Pain	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Exercise physiology (*n* = 1) Medicine (*n* = 1) Occupational therapy (*n* = 1) Physiotherapy (*n* = 2) Psychology (*n* = 1)	Ear, nose and throat surgery clinic Obstetrics and gynaecology clinic Ophthalmology clinic Optometry Private hospital Psychology Speech pathology	MMM 2

Site number	Organisational model	Primary physiotherapy clinical area	Physiotherapy services provided[A]	Health professions employed	Co-located health services	Classification of facility location (MMM)
7	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Physiotherapy (*n* = 9)	Exercise physiology GP clinic Massage therapy Orthopaedic surgery clinic Pathology Pharmacy Podiatry Psychology	MMM 2
8	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Work injury compensation	Nursing (*n* = 3) Medicine (*n* = 9) Physiotherapy (*n* = 1) Psychology (*n* = 1) Social work (*n* = 1)	Nil	MMM 5
9	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology (*n* = 3) Occupational therapy (*n* = 1) Physiotherapy (*n* = 6)	Audiology Cardiology clinic GP clinic Paediatric clinic Pharmacy Private hospital Psychology	MMM 2
10	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Massage therapy (*n* = 1) Physiotherapy (*n* = 6)	Nil	MMM 2

[A]As denoted on Australian Physiotherapy Association 'Find a Physio' search tool.

CDM, Chronic Disease Management; DVA, Department of Veterans' Affairs; GP, general practice; MMM, Modified Monash Model; NDIS, National Disability Insurance Scheme.

Table 9. Demographic and workplace information of the interview participants.

Participant number	Gender	Highest tertiary qualification	Location of entry-level training	Physiotherapy experience (years)	Classification of workplace location (MMM)	Principal physiotherapist	Organisational model	Co-located
1	Female	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	No
2	Female	Bachelor degree	New Zealand	3	MMM 2	No	Multiprofessional	No
3	Male	Bachelor degree	Australia	9	MMM 2	No	Multiprofessional	No
4	Female	Bachelor degree	Australia	2	MMM 2	No	Monoprofessional	Yes
5	Female	Masters degree	Australia	10	MMM 2	No	Multiprofessional	No
6	Female	Bachelor degree	Argentina	3	MMM 2	No	Multiprofessional	No
7	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
8	Male	Bachelor degree	Australia	7	MMM 2	No	Multiprofessional	No
9	Female	Bachelor degree	Australia	11	MMM 2	Yes	Monoprofessional	No
10	Female	Masters degree	Australia	13	MMM 2	Yes	Monoprofessional	Yes
11	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
12	Male	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	Yes
13	Female	Bachelor degree	Australia	25	MMM 2	No	Monoprofessional	Yes
14	Male	Bachelor degree	Australia	2	MMM 4	No	Multiprofessional	Yes
15	Male	Graduate certificate	Australia	10	MMM 4	No	Multiprofessional	Yes
16	Male	Masters degree	Australia	12	MMM 2	Yes	Monoprofessional	Yes
17	Male	Bachelor degree	Australia	6	MMM 2	No	Multiprofessional	Yes
18	Male	Bachelor degree	Australia	5	MMM 2	No	Multiprofessional	Yes
19	Female	Masters degree	Estonia	5	MMM 2	No	Multiprofessional	No
20	Female	Bachelor degree	New Zealand	19	MMM 2	No	Multiprofessional	No
21	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
22	Male	Graduate diploma	Australia	38	MMM 5	No	Multiprofessional	No
23	Male	Masters degree	Australia	15	MMM 4	Yes	Multiprofessional	Yes
24	Male	Masters degree	Australia	21	MMM 5	Yes	Monoprofessional	Yes
25	Female	Masters degree	Ireland	14	MMM 2	Yes	Multiprofessional	No
26	Female	Bachelor degree	Australia	1	MMM 2	No	Monoprofessional	Yes
27	Male	Masters degree	Australia	1	MMM 2	No	Monoprofessional	Yes
28	Male	Masters degree	Australia	15	MMM 2	Yes	Multiprofessional	Yes

MMM, Modified Monash Model.

Most participants stressed that given the increasing complexity of client care underpinned by a growing burden of chronic conditions and an ageing population, IPCP should play a larger role in their clinical practice than it was currently doing: *"Now that we're talking about [IPCP], I definitely think I could be doing more to collaborate with other professions … especially given that working in the community means treating people with complex conditions."* (Participant 6, Site 10) Among the population groups that were identified by participants to benefit most from an interprofessional approach to care were people with persistent pain and those living with disability: *"… for people who are suffering from chronic pain, it would then be beneficial to have an interdisciplinary team in place to deal with all aspects of their condition."* (Participant 1, Site 10) Australia's NDIS provides access to, and planning and funding, supports for people with disability: *"I think it's an amazing thing to have all these people weigh in on, especially complex management. So, say for [NDIS] participants, I think it's imperative because they've got a lot going on"* (Participant 4, Site 7)

Several participants stated that explaining the reasons behind why IPCP is needed for certain clients was highly important in gaining their respect and trust. Although this was occasionally met with resistance from clients, participants shared the view that it was their responsibility to advocate for and clearly articulate why an interprofessional approach was indicated.

> *"If you're not getting the outcome you want, or you feel that there is extra information that you are lacking that could be facilitated by another health professional, you better be referring. Sometimes you get resistance from your patient on referring, but we need to communicate why that's a good thing"* (Participant 5, Site 10)

Theme 2: Not a one-size-fits-all approach

This theme describes how IPCP, if not performed effectively and efficiently, can unnecessarily complicate care and potentially result in adverse clinical outcomes. Participants argued that some clientele groups, by nature of their presenting condition, often do not require resource-intensive interprofessional teamwork. In the management of most acute musculoskeletal conditions, participants felt that IPCP was not necessarily needed: *"I think a lot of people do just get better from one approach if their injury is one-dimensional. Say, for example, an ankle sprain."* (Participant 1, Site 10)

Involving the services of multiple professions shortly after a client commences physiotherapy was also viewed in a negative light. Participants maintained that some clients can be overwhelmed if confronted by a team of health practitioners during the early intervention stage. The participants clarified that this was particularly the case for clients who presented with more acute complaints that were generally considered to respond well to physiotherapy treatment alone: *"I think by involving too*

many people too early on, it might be a bad thing… I think that having too many people weigh in on a situation that's not exactly complex … I just don't think it's necessary sometimes." (Participant 4, Site 7) The principal physiotherapist of a multiprofessional clinic claimed that interprofessional referral can sometimes send the wrong message to clients, who may become despondent because they feel like their needs have been neglected.

> *"… we're identifying people … but instead of managing themselves, we're over-referring. So, we're sending people off where they feel pathologised. I think with experience, you get better at not referring too quickly. I think where that backfires, tends to be when people feel like they've been fobbed off. So, it depends on how you frame things"* (Participant 25, Site 10)

The principal of another multiprofessional practice added that IPCP can be perceived as doing the 'right thing', which may contribute to unnecessary over-referral: *"I think we like the idea of interdisciplinary care because it's a nice idea, but sometimes … only one person is needed to provide all the care for a patient."* (Participant 28, Site 9) Such statements raise questions in relation to when IPCP is indicated in the clinical setting.

Theme 3: The need for effective interprofessional communication

This theme describes the importance of effective interprofessional communication to facilitate optimal client outcomes. Participants considered that good interprofessional communication had positive effects on physiotherapists' clinical practice, which in turn, resulted in better outcomes for their clients: *"If there's better communication between all the clinicians involved in a patient's care, I tend to find I can be better at what I do and I can probably provide better education, or better treatment to patients"* (Participant 15, Site 4) Participants described effective interprofessional communication as ensuring that the client journey is more streamlined and efficient.

> *"… if you've got the communication between different health professionals, it's going to make a patient's health treatment … a lot easier for them. They're going to have a lot better intertwined treatment between professions and it just makes the whole process a lot smoother for them as well."* (Participant 26, Site 3)

Several participants however asserted that when clinical discussion is low, this can produce negative effects, highlighting the importance of IPCP that goes beyond mere coordination of tasks often seen in multiprofessional practice.

> *"I think that sometimes there can be confusion if there's not enough discussion, or the quality of discussion between professionals isn't appropriate, or as much as it needs to be. So, then*

> *there can be a profession … doing a certain intervention for the patient that might not line up exactly with what another professional is doing. If that creates confusion for the patient, that can be detrimental."* (Participant 17, Site 6)

One physiotherapist held the opinion that when there are multiple practitioners involved in a client's care, this will inherently lead to communication issues: *"The more providers involved, of course the more difficult the communication problems are."* (Participant 28, Site 9) Although increased provider involvement can create additional challenges, such as misunderstandings or fragmented communication, the impact largely depends on the skills of the individual practitioners and their ability to include clients in decision-making processes. For example, one participant reported that physiotherapists are well positioned to clarify messages for clients that have had difficulty interpreting from other health practitioners, namely medical specialists: *"I've had people that have been seeing specialists for several years, and they'll come in and you'll explain to them what is going on and then it will be like, 'Really? That's what's wrong with me?'"* (Participant 22, Site 8)

Theme 4: Fostering a positive work culture

This theme explains how effective IPCP builds camaraderie between practitioners from multiple professions that can lead to the development of an interprofessional network with reciprocal benefits. For sole practitioners or participants employed in single specialty clinics, engaging in IPCP meaningfully resulted in stronger rapport and relationships with health professionals from various external organisations within the region. Participants working in multiple specialty clinics likened IPCP to feeling valued as a team member, whereby conflict was largely non-existent. Although participants acknowledged that there are situations when the role of one practitioner is more dominant, they also described instances where all clinicians involved were given equal opportunity to contribute and provide input to a client's care. Such occasions were associated with high levels of practitioner satisfaction.

> *"Often with patients there's a particular profession that isn't as necessary as it might otherwise be. But I can recall for this particular patient, everyone was essentially playing a significant part, which made the collaborative process truly collaborative, in that when we would have a team meeting, everyone had an equal amount to say. It was quite enjoyable professionally to bounce things off everyone else"* (Participant 17, Site 6)

Physiotherapy private practitioners who did not adopt an interprofessional approach to care were perceived by interview participants to be potentially missing out on opportunities to learn and develop as practitioners. Several physiotherapists held the belief that working in an interprofessional manner was much more professionally rewarding and personally satisfying when compared to practising in

isolation from other professions: *"… it's definitely more rewarding. It's eye opening. You find out about your other clinicians and other professions in a more intimate way, and it's actually quite rewarding in that aspect too. It's definitely more interesting."* (Participant 3, Site 1)

Several participants felt that interprofessional team environments could alleviate professional isolation. One physiotherapist, who had several years' experiences working as a sole practitioner in a rural town, believed that some private practice facilities promote a stronger sense of collegial team culture than others – a factor which could be highly desirable for prospective employees.

> *"I worked for myself … and it was a very successful clinic. I was booked solid for months and months. However, I began to feel it would be nice to have more professional collaboration with people. So, it was one of the reasons that I moved. When I came to [this town], I didn't look for a job on offer, I targeted this place, and came in and saw [the practice principal] for that exact reason. So, talking to me about interprofessional collaboration, you're pretty well singing to the choir."* (Participant 5, Site 10)

Most study participants identified as being a member of an interprofessional team and were appreciative to work as part of one. A physiotherapist with a strong sense of interprofessional identity issued a call to action inviting all health practitioners working in their respective silos to become more collaborative.

> *"I love working in an interdisciplinary practice. I feel very lucky, and I love that I've got access to lots of brains in lots of different areas … and if you have never worked in an interdisciplinary team, you don't know what you're missing out on."* (Participant 20, Site 1)

Theme 5: Fear of losing clientele

This theme describes physiotherapy private practitioners' opinions regarding whether interprofessional referral practices resulted in a loss of clientele. This issue was perceived to be largely specific to private practice and may not be observed in other settings. Many participants believed that by referring a client to a health practitioner at another organisation who happened to work in close proximity with other physiotherapists, the client would recognise this act of good faith and repay them with their ongoing loyalty.

> *"… they will not lose the patient by referring them to someone else for something else. They'll gain their trust because that person knows that you have their best interests at heart. You send the person to somebody else, they'll come back to you because they know you want the best for them."* (Participant 5, Site 10)

Principal physiotherapists asserted that engaging in IPCP meaningfully enabled the establishment of a stable referral base, as one explained: *"We rely on and utilise our relationships with local GPs and specialists to generate a large portion of our referral base."* (Participant 28, Site 9) Another practice principal argued that participating in IPCP resulted in more appropriate referrals from a greater number of practitioners.

> *"I just think it's a really important part of what we do. Even if you don't want to justify it from a patient continuity of care perspective, I think the biggest thing is it's really good for your business model. In private practice, you get more referrals, you get better referrals … you get more timely referrals, and you get more appropriate referrals."* (Participant 23, Site 4)

Some participants, however, recalled the negative effects of IPCP in physiotherapy private practice, whereby referrals to health practitioners at different private sector organisations had resulted in the client being redirected away from them for that episode of care.

> *"We've had people redirected from us. So, that's a bit disappointing. So, we've recommended a surgeon to somebody, they've had surgery and they've got a physio in their rooms. And that surgeon has recommended that physio because they have a mateship or an agreement. So, that's just a disappointing part of the job that exists."* (Participant 16, Site 7)

Even participants who had not experienced occasions whereby clientele had been diverted away from their care following a well-intentioned interprofessional referral regarded the act as a possible unintended consequence of IPCP that would leave them feeling relatively confused and frustrated.

> *"If by me sending them to the doctor they were then referred away from me, I'd be pretty p…ed off. That's a bit of bad faith and I don't operate like that. So, if it did happen to me, it would very much leave a sour taste."* (Participant 18, Site 6)

One participant stressed that physiotherapy private practitioners should not take it personally when clients do not return after accessing the services of another health profession, assuming client goals are being met.

> *"I'd be concerned if they didn't come back to see me, but as long as they're reaching their goals with … other [health professions] like exercise physiologists and OTs… and they're still being treated and going in the right direction. I think that's the most important thing."* (Participant 27, Site 9)

Many participants strongly believed that the client-related benefits of IPCP should be the primary motivating factor to engaging in collaborative processes and fearing loss of income should not underpin such decisions.

> *"If that's their view, then they're in private practice for the wrong reasons."* (Participant 1, Site 10)

> *"It should always be what's best for the patient. So, if we've acknowledged that [interprofessional] collaboration is best for the patient, we can't possibly say it's not going to do us any favours."* (Participant 9, Site 2)

5.2.5 Discussion

The aim of this study was to investigate physiotherapy private practitioners' attitudes and opinions regarding the proposed effects (positive and negative) of IPCP. This study builds on, and explores, preliminary findings from an online survey with a sample of physiotherapists employed in private practice sites within the NQPHN region. Five main themes characterised physiotherapy private practitioners' attitudes and opinions regarding the proposed effects of IPCP: (a) quality of care considerations; (b) not a one-size-fits-all approach; (c) the need for effective interprofessional communication; (d) fostering a positive work culture; and (e) fear of losing clientele.

Interprofessional collaborative practice was considered to be an approach to clinical care that better meets the needs of people with chronic and complex health conditions given that no single health profession has all of the skills and expertise required to intervene adequately and holistically (Andermann, 2016). Increasingly, people are experiencing multiple chronic conditions and frequently present to PHC practitioners, including physiotherapists (Australian Bureau of Statistics, 2022; AIHW, 2024b; APA, 2022). The sharp rise in multimorbidity within the community is contributing to increased complexity of care which, in turn, is often associated with an increase in the number of health practitioners involved in a person's care (Jansen et al., 2015). These patients may express concerns about multiple appointments, a loss of continuity of care, inadequate and conflicting information, and communication issues with and among treating clinicians (Adeniji et al., 2015; Boeckxstaens et al., 2020). Although the results of this study provide evidence in support of IPCP models of care as best practice for people with multiple comorbidities, the value of receiving care from a single health practitioner who has an established rapport with clients was considered an appropriate service delivery model for less complex conditions. At present, research suggests that care recipients lack opportunities to provide direct feedback concerning their service needs and preferences in PHC (Soklaridis et al., 2017). Further research to gain an in-depth understanding of the client perspective is required to improve the overall quality of IPCP in PHC.

According to study participants, individuals with acute presentations requiring rapid intervention are less likely to benefit from intensive IPCP compared to people with chronic and complex conditions. Most physiotherapists stressed that acute musculoskeletal problems can be appropriately managed by physiotherapy alone, without compromising quality of care. Experienced clinicians argued that IPCP does not necessarily eliminate the need for single specialty care, nor should it be discouraged. There is strong evidence demonstrating that excellent clinical outcomes for musculoskeletal conditions, such as knee osteoarthritis, can be achieved by one profession (Barton et al., 2021).

The critical role of effective communication to facilitate successful IPCP in PHC was highlighted in this study. However, physiotherapy private practitioners also had concerns that involving too many practitioners from various professions in a client's care can lead to communication issues. Although this may be a misguided assumption based on anecdotal evidence, it is important to acknowledge that health practitioners, including physiotherapists, may not always possess the requisite communication skills for IPCP in PHC (Szafran et al., 2018). Health practitioners remain primarily educated in silos with an emphasis on uniprofessionalism despite most of clinical practice requiring collaboration (Health Professions Accreditors Collaborative (HPAC), 2019). These findings suggest that bridging the gap between siloed education and real-world collaborative demands is a necessary step for enhancing IPCP in physiotherapy private practice.

Interprofessional collaborative practice was perceived to break down traditional silos and reduce the burden on individual practitioners. Participants reported that effective IPCP resulted in feeling valued as a part of a PHC team, where significant autonomy was given to them, and conflict was largely non-existent. It is possible that physiotherapy private practitioners' service delivery model may have influenced their attitudes towards IPCP. More than half of study participants worked in multiprofessional clinics, which were regarded as supportive team environments where shared decision-making could be achieved. Among participants working in single specialty clinics, most were co-located with other health services. Co-location has been found to intensify interprofessional interactions and consequently informal and formal communication and knowledge exchange (Bonciani et al., 2018). Physiotherapy private practitioners working in isolation from other health professions may therefore not report the same effects of IPCP as those who work in close physical proximity to clinicians from different professional backgrounds. Future research should investigate the facilitators and barriers to IPCP across a diverse range of physiotherapy private practice contexts. Such research will allow the identification and development of practical strategies to improve, where needed, IPCP for private sector physiotherapists.

Physiotherapy private practitioners, especially those who had a financial stake in their respective clinics, acknowledged that participation in IPCP helped build a referral network to generate client

referrals, and can enhance professional reputation. However, for some physiotherapy private practitioners prioritising the benefits of IPCP for clients came at a financial cost. The act of referring clients to medical specialists, namely orthopaedic surgeons working at other private sector facilities, occasionally resulted in a loss of clientele. Participants attributed this observation to the growing trend of specialists employing a physiotherapist in their clinic. Similarly, referring clients to health practitioners at another private practice facility where physiotherapy services were also offered was viewed as a potential threat to business. Previous research suggests that it is perhaps in the financial interests of principal physiotherapists to employ practitioners from the professions that are frequently referred to within their facility, rather than continuing to seek the services of these health professionals at external organisations (Myburgh et al., 2014; Perreault et al., 2014a).

5.2.5.1 Limitations

There are limitations of the present study. One limitation of this study is a potential volunteer bias. Although physiotherapy private practice sites were carefully selected to ensure that recruited participants were 'information-rich' (Patton, 2015), those eligible for study inclusion were chosen from a list of phase one survey respondents who expressed interest in further research. Physiotherapy private practitioners may have therefore agreed to participate in the qualitative study phase because they were either interested in engaging in, or held strong opinions towards, IPCP. This study, however, deepens our understanding of IPCP from the perspective of an understudied population, physiotherapists working in private practice in regional and rural Australia. Additionally, no health practitioners from other professions were included in the study. Although this might be viewed as a limitation because it may not fully capture how IPCP comprises multiple health practitioners from different professions, it was considered a strength of this study. In line with social constructivism, the objective was to bias and privilege the accounts of physiotherapy private practitioners, whose voice is largely omitted from the published literature despite comprising a growing proportion of the Australian PHC workforce (Anderson et al., 2005; DoHAC, 2023).

5.2.6 Conclusion

This study provides new and relevant information pertaining to physiotherapy private practitioners' attitudes and opinions regarding the proposed effects of IPCP. The findings from this study suggest that physiotherapy private practitioners value IPCP because it can deliver superior client outcomes, strengthen relationships with practitioners from other professions by nurturing a positive work environment and create a competitive advantage for practice owners through enhancing their professional reputation. Participants also claimed that when performed inappropriately, IPCP can contribute to potentially over-complicated management, which may contribute to poor client outcomes, and some reported approaching interprofessional referrals to practitioners at other private

sector facilities with caution due to past experiences that resulted in a loss of clientele. The mixed views towards IPCP in this study highlight the need to explore the facilitators and barriers to IPCP in the Australian physiotherapy private practice setting. Future researchers should consider employing direct observational methods to compare whether physiotherapy private practitioners' self-reported accounts align with their actual interactions. Such research may inform the development of flexible and practical strategies that will support sustainable models of IPCP in physiotherapy private practice.

5.3 Facilitators of effective interprofessional collaborative practice for physiotherapy private practitioners

This section is based on a publication in the *Journal of Interprofessional Education & Practice*:

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2023b). Facilitators of effective interprofessional collaborative practice for physiotherapy private practitioners: An interpretive descriptive study. *Journal of Interprofessional Education & Practice, 33*, 100671. https://doi.org/10.1016/j.xjep.2023.100671

To the best of the authors' knowledge, this is the first qualitative study to explore the facilitators of IPCP from the perspective of Australian physiotherapy private practitioners. The findings from this study suggest that emphasising close physical proximity of multiple health practitioners, leveraging technological innovations, recognising the value of IPCP for clients with chronic and complex care needs and cultivating positive professional reputations can promote effective IPCP involving physiotherapy private practitioners. By identifying these facilitators, this study sheds light on how contextual factors, including the organisational characteristics of physiotherapy private practices, influence and shape the process of IPCP. Ultimately, embracing these facilitators will contribute towards strengthening IPCP within the Australian physiotherapy private practice setting, which, in turn, may enhance client-centred care, improve health outcomes and optimise resource utilisation.

The paper has been reformatted for consistency with thesis formatting and is contained below. The published paper is also attached in Appendix 5.

5.3.1 Introduction

Interprofessional collaborative practice is an integral component of modern health care delivery (Reeves et al., 2010; WHO, 2010). Interprofessional collaborative practice refers to cooperation and communication among health practitioners from diverse professional backgrounds (WHO, 2010). The combination of health practitioners' collective knowledge, skills and expertise provides safe, timely, efficient, effective and equitable patient care (IPEC, 2016; Reeves et al., 2017b). Effective IPCP contributes to positive patient outcomes, cost-effective health care and higher levels of satisfaction levels for both patients and practitioners (Reeves et al., 2017b). However, despite its many benefits, IPCP can be difficult to implement in clinical practice. Communication problems, power imbalances and a lack of understanding of other professions' expertise may present challenges to successfully implementing IPCP in the clinical setting (Reeves et al., 2017b; Seaton et al., 2021).

Physiotherapy represents one of the largest allied health professions in Australia, accounting for more than 40,000 qualified practitioners (AHPRA, 2023). In Australia, most physiotherapists work primarily as clinicians in private practices, which are professional businesses, or for-profit organisations, that are not directly funded through government departments (DoHAC, 2023; Engel et al., 2014; Perreault et al., 2014b). Physiotherapy services in private practice are typically administered to consumers via PHI packages through a FFS model (APA & Nous Group, 2020). Physiotherapists working in private practice are reported to account for 70% of the total physiotherapy workforce in Australia (AHPRA, 2023; DoHAC, 2023) and it is estimated that physiotherapy private practice is a $2.2 billion (AUD) industry made up of more than 7,000 businesses (APA & Nous Group, 2020). The strong growth of the physiotherapy private practice industry in Australia may reflect financial constraints on the public health care system, as well as increasing demand for access to physiotherapy in the community (Pretorius et al., 2016).

The availability of information regarding how IPCP is influenced and operationalised for physiotherapy private practitioners is scarce (Perreault et al., 2014a, 2016a, 2018). The factors facilitating effective IPCP have been previously reported in the literature, however much of this research has emanated from acute inpatient settings where formalised team environments are common and predominately focused on perspectives from medical and nursing professions (Etherington et al., 2021; Paradis et al., 2014; Vatn & Dahl, 2022). In formal team-based settings, collaborative practice is most successfully achieved when opportunities for unplanned informal contact and spontaneous interaction with health practitioners from other professions are high (Bennett-Emslie & McIntosh, 1995; Morgan et al., 2015). Given that physiotherapy private practices often only employ one professional group or rely on a sole practitioner model of care, physiotherapists working in these clinics may experience facilitators of IPCP that differ from health professionals practising in other clinical contexts. Research is therefore needed to examine the facilitators of IPCP from the

perspective of physiotherapy private practitioners, especially those working in isolation from other health professions.

Physiotherapists are crucial members of collaborative models of care due to their skills in addressing issues associated with an increased chronic disease burden, an ageing population, rapidly rising health care costs and human resource shortages (Adams et al., 2014; Maharaj et al., 2018; Sangaleti et al., 2017). However, little is currently known about IPCP from the perspective of physiotherapy private practitioners. A comprehensive understanding of the perspectives of physiotherapy private practitioners, including information regarding how collaborative practice models can be implemented in the absence of integrated multiprofessional team environments, is required to inform the development of innovative strategies to promote successful IPCP in the physiotherapy private sector. This knowledge will ensure that strategies developed are tailored to the specific needs of physiotherapy private practitioners, but also contribute to the provision of high-quality patient care and increased efficiency in health care delivery (IPEC, 2016; Reeves et al., 2017b).

5.3.1.1 Research aim

The aim of this study was to explore the facilitators of IPCP from the perspective of physiotherapy private practitioners.

5.3.2 Methods

5.3.2.1 Study design

Interpretive description was chosen as the methodological framework for this study due to its unique ability to facilitate the exploration and interpretation of complex social phenomena, particularly in health care settings (Thorne, 2008). As an inductive analytical approach underpinned by constructivist epistemological assumptions, ID asserts that knowledge is not absolute, but is socially constructed through the subjective person who experiences it (Thorne, 1997). This aligns closely with the phenomenon under investigation, as IPCP in physiotherapy private practice settings involves multifaceted social interactions that are shaped by individual experiences and contextual factors. Interpretive description minimises the distance between researcher and participant, allowing those closest to the phenomenon under investigation to share their experiences and interpretations of their lived reality, while emphasising the significance of context in shaping participants' behaviours (Thorne et al., 1997). Ethics approval was obtained from the JCU HREC (Appendix 12).

5.3.2.2 Study setting

Participants were physiotherapists from private practice facilities in the region covered by the NQPHN. Spanning an area of 510,000 square kilometres, this region is home to an estimated 730,000

people (NQPHN, 2021). Most of the population are located within the major regional centres of Cairns, Mackay and Townsville, while approximately 8% of inhabitants live in remote and very remote areas (NQPHN, 2021).

5.3.2.3 Site selection and participant recruitment

Site selection was informed by the findings of the online survey conducted in the quantitative study phase. Eligible sites (*n* = 105) were identified from the publicly accessible 'Find a Physio' search tool, an index of physiotherapy private practices in Australia maintained by the APA (https://choose.physio/findaphysio, accessed 15 May 2019), as well as online business directories. For inclusion in the study, participants were required to be: (a) registered physiotherapists with the AHPRA; (b) employed in a physiotherapy private practice within the NQPHN region for no less than one month; (c) over the age of 18 years and willing to consent to the study; and (d) proficient in spoken and written English.

Physiotherapy private practitioners (*n* = 31) who were interested in participating in further research provided their contact information on their submitted online survey. These physiotherapists were subsequently emailed and provided with a participant information sheet detailing the study purpose. Recruitment was predominately convenience based, in that participants were selected on a first-come-first-served basis (Robinson, 2014). This approach was used to efficiently recruit participants who were readily available and willing to participate in the study. A semi-purposive stratified element was also used to ensure participating physiotherapists worked at a range of private practice sites, varying with respect to organisational model, service provision, team composition and geographic location (Robinson, 2014). Site sampling was ceased once these purposive criteria were met.

Physiotherapists (*n* = 10) from a total of ten private practice sites within the NQPHN region agreed to participate in the study. The characteristics of the participating sites were presented in Table 8 above (refer to section 5.2.4). The physiotherapy private practitioners who agreed to participate in the study were then asked to identify other physiotherapists employed at their clinic to take part in an interview through a process of snowball sampling. Invitations to participate in an interview were sent to all identified individuals, of which an additional 18 physiotherapists agreed. Figure 6 (refer to section 3.7.2) illustrated the recruitment process for the qualitative study phase.

5.3.2.4 Data collection

Interviews

Individual interviews were conducted with 28 physiotherapists between March 2020 and February 2021. Demographic and workplace information of the interview participants was presented in Table 9

(refer to section 5.2.4). Semi-structured interviews allowed for the exploration of each participant's individual unique views and experiences of IPCP, while ensuring that the data collected were relevant to the research objectives (Braun & Clark, 2013). The interview guide utilised in the study was developed by the multiprofessional research team and its contents were informed by the findings from the online survey conducted in phase one. The interview guide was piloted with two physiotherapists who had greater than ten years clinical experience in private practice to ensure that questions and exploratory probes elicited responses with the intended focus on the perceived facilitators of IPCP in the physiotherapy private sector. The final interview guide is available in Appendix 10.

As interviews commenced, demographic information was collected from the participants via a paper-based questionnaire (Appendix 9). The demographic data was collected to provide context for participants' responses. Interviews were conducted individually in private consultation rooms at each private practice site, with an average duration of 39 minutes (range 16 – 117 minutes). Memos were immediately recorded after each interview to ensure that a reflexive stance was maintained in relation to the research and participants (Birks et al., 2008). All participants provided written informed consent and agreed to the interview being audio-recorded and transcribed. Audio-recorded interviews were transcribed verbatim with the assistance of secure online transcription software (https://otter.ai). Each participant was provided with a copy of the interview transcription and an opportunity to make any necessary corrections or omissions before the analysis (Patton, 2015).

Observation

To better understand and capture the context within which IPCP occurs in physiotherapy private practice, overt non-participant observational data was collected (Spradley, 1979). This involved the researcher (JS) attending study sites and observing the activities, events and interactions taking place, without participating in them (Mays & Pope, 1995; Sagasser et al., 2017). At each initial visit to participating physiotherapy private practice sites, an informal meeting was held to explain the purpose of the research to all staff members. Private practice staff, including physiotherapists, were informed that they could decline participation or ask the researcher to leave the site at any time during the fieldwork. Verbal consent for observations was obtained from all participating staff members at each site by the first author. To protect client confidentiality and privacy, consultations between health practitioners and clients were not observed, and the research team did not collect any individual client information or access client charts.

In total, 64 hours of observational data were collected, with JS spending one to four days at participating sites. The observations were conducted at different times of the day and included various structured and unstructured events. Activity was observed in public and staff-only shared spaces throughout the sites, including conference rooms, offices, and hallway corridors. The distance

between the observer and the observed was unobtrusive but allowed for clear audibility of conversations involving physiotherapists and other practice staff. Direct observation of IPCP at one study site was not possible because the physiotherapist was providing services in various outreach locations, rather than working from a single, stationary workplace. Outreach services are designed to provide health care services and supports to communities who may not have access to health care facilities or resources locally (Battye & McTaggart, 2003). As a result, it was difficult to monitor and observe their interprofessional interactions with other health practitioners.

The process of recording preliminary fieldnotes during each observation session involved jotting down brief notes by hand, which were later transcribed in more detail into a Microsoft® Word document (Emerson et al., 2011). The fieldnotes captured the observed interactions, including the type of interaction, participants involved, location and duration of time spent in each environment. The researcher also engaged in brief, informal conversations with physiotherapists to explore any questions and ideas that emerged during the observations. These conversations ranged from seeking clarification on certain events to asking for an explanation of specific tasks undertaken by physiotherapy private practitioners during their administrative and professional responsibilities, such as managing practice staff, coordinating schedules, and communicating with health care providers from external organisations through phone calls or email. Audio-recording of informal conversations did not take place. Instead, upon conclusion of the conversation, the researcher recorded the key points exchanged. Fieldnotes incorporated reflections by the first author that included personal feelings, actions and responses to the situations observed (Mays & Pope, 1995) and were peer-reviewed by the research team. Reviewing the fieldnotes collectively allowed the researchers to obtain a broader understanding of the events and interactions that occurred, enhancing the trustworthiness of the data (Lincoln & Guba, 1985).

5.3.2.5 Data analysis

Reflexive thematic analysis was employed to facilitate the identification of patterns or themes in the pooled interview and observation data (Braun & Clarke, 2019). Reflexive thematic analysis is an iterative approach that emphasises the importance of reflexivity and critical reflection throughout the process to ensure that the researcher's biases and assumptions are acknowledged and accounted for in the analysis (Braun & Clarke, 2021). Reflexive thematic analysis aligns well with ID as both approaches prioritise the researcher's active engagement with the data and the need for a nuanced and contextually sensitive analysis (Braun & Clarke, 2019; Thorne et al., 1997).

The first analytic step was familiarisation with the data through careful and repeated reading of interview transcripts, memos and fieldnotes (including observational and informal conversation notes) to gain a sense of the content and identify any initial impressions. Next, the data were analysed line-

by-line to generate initial codes that represent patterns and themes in the data. This involved searching for recurring patterns, concepts, and ideas in the data in a process of open coding. After this, codes were consolidated and grouped into themes relating to the facilitators of IPCP. Once the identified potential themes had been reviewed and refined, clear and concise descriptions accurately capturing the meaning of each theme were created and then named. Finally, endorsed themes were incorporated into a comprehensive description and populated with relevant quotes that were carefully selected to ensure they accurately represented the themes. By incorporating these quotes, the resulting account provided a robust and authentic representation of the participants' perspectives regarding the facilitators of IPCP. Data were managed using NVivo software (QSR International; https://www.qsrinternational.com).

5.3.3 Results

5.3.3.1 Themes

Reflexive thematic analysis of the data produced four overarching themes and three sub-themes that characterised physiotherapy private practitioners' perspectives on the facilitators of IPCP: (a) close physical proximity (integrated team membership; co-location; interior architecture); (b) technological advancements; (c) complex client presentations; and (d) positive professional reputation.

Theme 1: Close physical proximity

Sub-theme 1.1: Integrated team membership

This sub-theme describes how the workforce composition of private practice sites contributes to the promotion of IPCP. Participants employed in multiprofessional sites reported having more opportunities to interact with clinicians from other health professions than physiotherapists working as sole traders or in monoprofessional private practices.

> *"We're lucky here because we see that interdisciplinary approach a formality. It's easy for us because we have so many different professions under the same roof. I guess it's a lot trickier for smaller private practices that only have [employ] physios [physiotherapists]."*
> (Participant 8, Site 1, Interview)

Participants working at monoprofessional sites argued that multiprofessional private practice models provided opportunities to engage in interprofessional teamwork that were not afforded to them.

> *"… if you've literally got a team that has OTs, physios [physiotherapists], exercise physiologists … they're literally in the practice, so you can talk to them as required and you*

> *can … discuss what options are available from their ends. So, it's a lot easier and … a lot less time consuming … to be able to do that."* (Participant 26, Site 3, Interview)

The principal physiotherapist of a multiprofessional private practice recognised the benefits of employing multiple health professions at their organisation, including the ability to develop a better understanding of other professions' roles and responsibilities: *"I probably make a point of spending time with our OTs and EPs … because I learn things about their professions and that's actually really good for interdisciplinary practice."* (Participant 28, Site 9, Interview) Participants at site one regarded their community outreach service to a be a major facilitator of IPCP because it provided an opportunity to learn with, and from, other health professionals. This type of learning aligns closely with the principles of IPE, which fosters mutual understanding and collaboration between professions as a foundation for effective IPCP.

> *"… we go on outreach locations where one person from each discipline will go in the car together … and that's probably where a lot of our interdisciplinary work occurs. I feel like I've learnt more about the other disciplines on outreach than anything else I've done before."* (Participant 2, Site 1, Interview)

Physiotherapists employed in multiprofessional clinics considered themselves fortunate to have unrestricted access to health practitioners from a range of professions. These participants had the freedom to choose when a client may be better serviced by one profession and not the other.

> *"We've got access to so many allied health professions here, so we can pick each other's brains. For example, someone might have a hand injury. If I'm not quite sure how to manage it, we've got one of the OTs that's worked a lot in hands, so we can immediately access her experience with dealing with that."* (Participant 20, Site 1, Interview)

Sub-theme 1.2: Co-location

Physiotherapy private practitioners who worked at sites that were co-located with other health services considered this arrangement to help facilitate IPCP. Participants who worked in close physical proximity to health practitioners from other professions through co-location declared that it was a convenient way of sharing knowledge and resources with each other: *"We've got professions like dietetics and psychology in our complex … so we invite them over and have lunch and we do in-services with them."* (Participant 28, Site 9, Interview) Many participants reported that they were more inclined to refer their clients to health practitioners with whom they were co-located, rather than seek that profession's services from another clinic.

> *"I think you're certainly far more likely to use or refer to health services that are co-located … because they're right at your doorstep. I suppose you've got that trust with them … and … I suppose you make an active effort to build that relationship a little bit more."* (Participant 11, Site 7, Interview)

Many participants acknowledged that some interprofessional relationships may not have developed if they were not co-located with other health practitioners.

> *"We've got a really good relationship with the pharmacist in the shop next door. To be honest, he's probably one of my most commonly used other health professionals that I would ask opinions for. I know way more about medications now than I would have ever … known. It's helped so many patients as well. I wouldn't have ever learnt or known about half the medications if I'd never really talked to him … a lot about it. That relationship probably wouldn't have developed if we weren't co-located."* (Participant 10, Site 3, Interview)

Participants explained how when health practitioners work in the same location, client care can be more easily coordinated. Most participants indicated that referrals between co-located health professionals were common practice.

> *"In my previous workplace, I was co-located with a podiatrist and an osteopath. It was awesome. Sometimes … I would send business to the podiatrist, the podiatrist would send business to me, and the osteopath and I would talk, and send business back and forth to each other."* (Participant 5, Site 10, Interview)

Although most participants regarded co-location as having the potential to facilitate IPCP, many physiotherapists asserted that close physical proximity alone was not enough to ensure effective IPCP: *"I'm sure co-location would help facilitate interprofessional collaboration. It wouldn't be the only step, but it would definitely help and go a long way, I think."* (Participant 1, Site 10, Interview) Several participants working at sites co-located with other health services that employed clinicians from different professions claimed this had little influence on their IPCP.

> *"I don't think being co-located with other health services has made a difference to my practice to be honest. It probably should, but I don't think it has for me. I don't think I've … felt like if … someone needed psychology, I haven't … just gone around the corner and chatted to the psychologists right next door. Same goes for podiatry. I know there's podiatrists just a stone's throw away across the road, but I think … even if it's a short*

distance, as soon as it's … outside the practice, it's a completely different story." (Participant 12, Site 9, Interview)

Observation of physiotherapy private practitioners suggested that co-location of study sites with other health services had a varying influence on IPCP. Some private practice sites appeared to work closely with health practitioners to whom they were co-located, while other sites did not seem to utilise the co-located health services to their full potential. Site seven was located on a designated health campus, situated between an exercise physiology clinic on one side and a podiatry service on the other. Internally, two sliding doors had been constructed, facilitating convenient access between the physiotherapy and exercise physiology clinics and the physiotherapy and podiatry clinics. The passageway between physiotherapy and exercise physiology was open during operating hours and routinely used to facilitate informal interprofessional interaction.

"It's really beneficial having them [the EPs] in-house here so that you can have that face-to-face interaction and actually … see what patients have been up to in the gym. So, even if it's … casual communication in passing, just checking in on how someone's going or even walking through … and watching someone [a patient] for a little bit and speaking to whoever's working in there." (Participant 13, Site 7, Interview)

The internal door between physiotherapy and podiatry, however, remained closed and the passageway had been obstructed by objects placed on the floor in front of it within the physiotherapy clinic. As a possible consequence of this action, no face-to-face interprofessional contact was observed between physiotherapists at site seven and the podiatrists in the adjoining clinic during fieldwork. It was unclear why, and for how long, these objects had been placed in front of this passageway.

Sub-theme 1.3: Interior architecture

The interior architecture of private practice sites was observed to influence the ease and frequency of interprofessional communication. At several sites, the use of informal shared spaces was high. These spaces were seen to enhance IPCP by promoting socialisation and building rapport among team members. The break room at site one was a medium-sized space where many staff, including physiotherapists, would attend to complete non-clinical tasks, such as typing notes on their laptop computers. The room had plenty of seating capacity in the form of stools and lounges.

"I really like going there [the break room] to do charts because it's a … quiet space away from patients where I can … focus and get my work done without interruption. It's also nice to have the opportunity to interact with colleagues in a more relaxed setting … where we can

> *chat about cases, bounce ideas off each other and … take a break from the intensity of the clinical environment."* (Participant 2, Site 1, Interview)

Although the break room at site one created an informal interprofessional team environment, using this space for work-related duties was strongly discouraged by senior staff at a formal practice meeting. The chairperson of the meeting indicated that the stools and lounges in the break room did not have sufficient ergonomic clearance from a work health and safety perspective and advised all health practitioners to complete computer tasks in profession-specific areas, potentially limiting subsequent opportunities for IPCP.

Several multiprofessional sites included open-plan workspaces, such as gyms, that had potential to bring multiple health practitioners together in closer proximity for IPCP. At most sites however, physiotherapists were predominately confined to their individual treatment spaces with the curtains or office doors closed when they were in client consultations. Often, physiotherapists emerged only temporarily from their treatment area when there was a need to acquire specific items, such as a printed exercise handout. At site four, the EP frequently brought clients to the shared gym area; the physiotherapists however, used this space with a comparably smaller proportion of their clientele. At site one, physiotherapists, EPs and OTs mostly used the large therapy gym, while psychologists, dietitians and social workers tended to access enclosed offices, thereby limiting visibility and making it difficult for other health practitioners to connect with them.

Theme 2: Technological advancements

This theme describes how advancements in information technology can support IPCP. These factors were perceived to help physiotherapy private practitioners secure more time to engage in collaborative processes. Clinical information systems, such as Medical-Objects (https://www.medicalobjects.com/), were perceived to facilitate communication and coordination among health practitioners from different professions and organisations. Medical-Objects enables health practitioners to send and receive client information securely and in compliance with Australian privacy and security standards. Client records and clinical data can be accessed and shared electronically between health practitioners via Medical-Objects.

> *"When you have to fax and upload and restore documents, it is time consuming. The Medical Objects system is a game changer. When you can press one button and it imports all that patient's data, I think there's no reason why we can't make time for that. The introduction of Medical-Objects I think has been great for interdisciplinary collaboration."* (Participant 23, Site 4, Interview)

Similarly, shared radiology portals were perceived to increase efficiency by reducing the need for duplicate imaging studies. These portals allowed a wide range of health practitioners access to existing images, rather than ordering new ones, which saved time and reduced costs. Physiotherapists reported that such tools enhanced communication and coordination among practitioners, particularly when managing shared clients across different professions or practices.

> *"They've recently created a big … private radiology portal, where you can log in and access client x-ray reports and scans so that you don't have to call around to each practice trying to chase where they are. It all just gets uploaded onto one system. So, I find that that's really good to have access to all the reports that you need to. It's a massive time saver."* (Participant 1, Site 10, Interview)

Internal communication systems were also used at multiprofessional sites to facilitate time-efficient interprofessional communication among team members: *"The internal memo system is great. I can just send an internal message to the GP next door to me rather than barge into their office because sometimes I can hear that they're busy with a client."* (Participant 22, Site 8, Interview) Some physiotherapists claimed that IPCP can be effective regardless of other health practitioners' location or time zone because technological advancements have made communication easier and more efficient.

> *"You can work along with as many other disciplines as you want … but it doesn't mean that we all have to be in the same physical space. Interprofessional communication can be over … Skype or Zoom or Teams … and you're still working with other disciplines. It shouldn't matter where you work."* (Participant 19, Site 10, Interview)

Theme 3: Complex client presentations

This theme explores how complex client presentations in physiotherapy private practice can facilitate IPCP. Some client presentations, such as those involving multiple chronic conditions, were perceived to be more amendable to an interprofessional management approach, thereby promoting IPCP: *"… there are certainly situations where a really coherent and collaborative approach is needed to help the patient recover, especially where someone's got a very complex situation, or they have complex physical and psychiatric illnesses."* (Participant 28, Site 9, Interview) A client's presentation was considered to impact participants' scope of practice by influencing what interventions physiotherapy private practitioners are permitted to perform, which, in turn, may promote IPCP. Participants reported that when a client's condition was outside their scope of practice, they often needed to refer the client to another health professional who had the necessary training and expertise: *"When our*

resources and knowledge is exhausted, we need to be referring to … a specialist or someone else who has a bit more experience in that field." (Participant 26, Site 3, Interview)

One participant stressed the importance of physiotherapy private practitioners assessing their knowledge and skills before providing care to ensure that it falls within their professional boundaries: *"Good interprofessional practice is just being mindful and always questioning whether it's something that's within our scope, or if it is something that someone in another profession is better to offer."* (Participant 13, Site 7, Interview) The principal physiotherapist of a monoprofessional private practice suggested that experienced clinicians are more likely to have a better understanding of their practice parameters compared to less experienced clinicians.

> *"… different people have different capabilities, and everyone's got slightly different scopes. I think the very mature clinician knows very much what their scope is and where their boundaries are and where someone else's expertise is probably necessary. So, that group of clinicians knows exactly the right time when interdisciplinary practice is required."* (Participant 28, Site 9, Interview)

Theme 4: Positive professional reputation

This theme describes how the desire to develop and sustain a positive professional reputation in private practice influences the degree of IPCP between physiotherapists and other health practitioners. A good professional reputation had the potential to strengthen relationships with local health practitioners and attract more client referrals. This was also recognised as having financial implications for physiotherapy private practitioners.

> *"The thing with private practice is … your name is on the line. As a sole trader there's no one else to blame either. You have to do everything and anything to keep the hand that feeds happy. I want to have a good reputation. I want to keep him [the paediatrician] happy, so I make probably more of a concerted effort … to feed back. It sounds bad, but it's business."* (Participant 9, Site 2, Interview)

Several participants also highlighted the importance of client word-of-mouth to enhance physiotherapy private practitioners' professional reputation and promote IPCP. Participants claimed that when clients have positive dealings with physiotherapy, they are more likely to share their experiences with their GP, which can lead to increased client referrals.

> *"A truly positive GP-physio link is your patient. If the patient has a good experience, they're going to tell the GP. That's your best option for improving collaboration. If you don't treat*

> *your patient well, they'll tell their doctor. That word-of-mouth is really critical because the GP keeps hearing the same clinic name spoken of positively and then you get referrals."* (Participant 5, Site 10, Interview)

The growing role of social media in building brand awareness and enhancing professional reputation was highlighted by some participants. The social media presence of a physiotherapy private practice clinic was understood to positively influence IPCP by reaching more health practitioners from more professions, but also improving revenue streams by driving more referrals to physiotherapy.

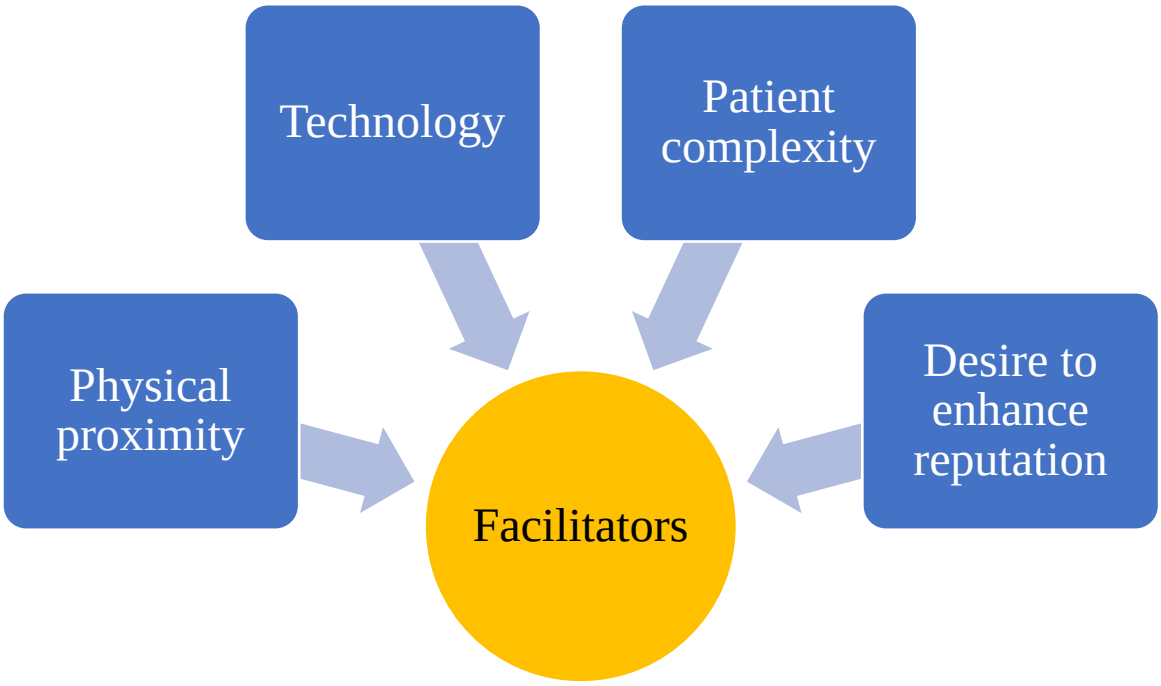
> *"Health professionals in this community know [our clinic] as an entity. [The principal physiotherapist] has been very good at promoting the place on social media. I think that's the future. Getting your name out there on social media is definitely going to become more common practice … and I think not only will that be good for your business … but it will be good for interprofessional collaboration."* (Participant 6, Site 10, Interview)

5.3.4 Discussion

The aim of this study was to explore the facilitators of IPCP from the perspective of Australian physiotherapy private practitioners and expand on preliminary findings from phase one with a sample of physiotherapists employed in private practice sites within the NQPHN region. Four main themes characterised physiotherapy private practitioners' perspectives regarding the facilitators of IPCP: (a) close physical proximity; (b) technological advancements; (c) complex client presentations; and (d) positive professional reputation (Figure 8).

This study highlights the significance of multiprofessional private practices in enabling IPCP for physiotherapists in these clinics. Participants employed in multiprofessional private practice sites reported having more opportunities to interact with health practitioners from other professions than those working as sole traders or in monoprofessional clinics. The presence of practitioners from multiple professions working together in the same practice facilitate interprofessional learning, which can lead to better understanding and appreciation of the roles and responsibilities of different professions (Carney et al., 2019). When health practitioners from different professional backgrounds have a better understanding of each other's roles and responsibilities they are better able to work together to provide comprehensive and coordinated client care, which in turn may produce superior outcomes (IPEC, 2016). However, given that many physiotherapy private practitioners in Australia do not work in multiprofessional clinics (DoHAC, 2023), it is necessary to explore the barriers of IPCP from the perspective of this group within the physiotherapy workforce.

Figure 8. Facilitators of interprofessional collaborative practice for physiotherapy private practitioners.



Co-location of health services was regarded to be an efficient means of facilitating IPCP for physiotherapy private practitioners. The close physical proximity of health practitioners from different professions in one location intensifies informal interprofessional interactions and provides convenient opportunities to share knowledge and resources and discuss clinical cases (Bonciani et al., 2018). However, this study suggests that co-location alone is not enough to achieve successful IPCP, as effort and intentionality are required. The effectiveness of co-location in influencing IPCP may depend on various factors, such as the nature of relationships between health practitioners, workplace culture and the willingness of individual practitioners to engage in collaborative practice (Schot et al., 2020). The nature of health services available in a building or campus may have also influenced the degree of IPCP in this study. For example, although co-location increased the frequency of interprofessional interactions between physiotherapists at site seven and the EPs with whom they were co-located, this arrangement did not appear to improve IPCP with the podiatrists working at the other adjacent clinic. It is possible that the limited interprofessional contact between physiotherapists and podiatrists could be attributed to various factors, including philosophical differences towards treatment orientation or individual factors such as personality conflicts or challenges arising from busy schedules, which might have hindered engagement and prioritisation of IPCP (Bridgen et al., 2008). A more thorough examination of co-located health services is warranted before practical advice can be provided to current or prospective physiotherapy private practice owners who may be considering this option as a viable method to improve their collaborative arrangements.

The built environment, including the physical infrastructure and design of buildings, and the surrounding spaces, such as the arrangement of rooms, furniture and equipment, can have a significant impact on IPCP in health care (Morgan et al., 2021). The interior architecture of private practice facilities was observed to influence physiotherapists' ability to communicate and collaborate. In some clinics, the physical layout of the practice setting contributed to increased informal interaction between team members, regardless of professional background. Careful consideration should therefore be given to the design of physiotherapy private practices and other health care settings to facilitate IPCP. Providing shared spaces and open-plan workspaces may promote socialisation and increase visibility between health practitioners, potentially leading to improved IPCP (Morgan et al., 2021).

The findings from this study raise awareness of the potential for health information technology to facilitate IPCP. Many study participants indicated that IPCP can be successful despite other health professionals' geographic location or time zone due to recent technological innovations that have strengthened clinical information systems. Although health professionals working in regional, rural and remote areas may report more barriers to participating in IPCP than their urban counterparts (Brems et al., 2006; Parker et al., 2013; Perron et al., 2022), this study provides preliminary evidence in support of information technology software platforms to overcome some of these challenges. Technological innovations in health care were perceived by physiotherapy private practitioners to facilitate more efficient communication and support coordination of care efforts within and between health care organisations. Technologies used to manage and share health information allowed physiotherapists in private practice to securely send and receive client communication, access and share clinical data and records electronically, and reduce the need for duplicate investigations and imaging studies. Digital technology has the capacity to transform IPCP by improving communication, facilitating shared decision-making and joint consultations, and increasing access to health care services (Robertson et al., 2022). As digital technologies continue to advance and become more integrated into health care systems, they may play an increasingly prominent role in the development of future health policies and programs aimed at enhancing IPCP and optimising client outcomes (Australian Digital Health Agency (ADHA), 2018).

Physiotherapists in the present study regarded IPCP as essential in the management of clients with chronic and complex care needs. Senior physiotherapists in this study reported possessing a greater understanding of their scope of practice and considered themselves more likely to recognise the need for the initiation of interprofessional contact. When clients' health care needs were perceived to be beyond a physiotherapists' scope of practice or their capabilities and competencies, participants often referred these clients to other health professionals with the necessary training and expertise, thus promoting IPCP. For IPCP to be successful, health practitioners, including physiotherapists, must be

responsive to the unique needs and circumstances of each individual client (Soklaridis et al., 2019). These findings may highlight a need for ongoing PD to expand the knowledge and skills of less experienced physiotherapists to enable them to better recognise when to seek IPCP for their clients. Gaining a deeper understanding of the client perspective is critical to improving the overall quality of IPCP in physiotherapy private practice.

The current study suggests that establishing a positive professional reputation strengthens interprofessional relationships, which ultimately attracts more client referrals and subsequently increases business revenue. The importance of building strong connections with other health practitioners such as GPs, who are often a major source of referrals to physiotherapy (Dennis et al., 2018), was also highlighted. Physiotherapists working in private practice need to navigate a delicate balance between prioritising client-centred care and fostering effective interprofessional communication, to produce positive client outcomes, with the need to remain financially viable as a business entity. Examining whether financial considerations, such as competition for clientele or the rules of funding schemes, present barriers to IPCP for physiotherapy private practitioners is an area worthy of future study.

5.3.4.1 Limitations

The main limitation of the current study is a potential volunteer bias. Although physiotherapy private practice sites were carefully selected to ensure that recruited participants were 'information-rich' (Patton, 2015), those eligible for study inclusion were chosen from a list of survey respondents who expressed interest in further research (Seaton et al., 2020a). Physiotherapy private practitioners may have therefore agreed to participate in the current study because they were either interested in engaging in, or held strong opinions towards, IPCP. This study, however, deepens our understanding of IPCP from the perspective of an understudied population, physiotherapists working in private practice in regional and rural Australia.

The presence of the Hawthorne effect (HE) may be considered an additional study limitation. The HE refers to the phenomenon whereby study participants modify their behaviour in response to being observed or studied, which can bias the collected data (Oswald et al., 2014). However, several steps were taken to ensure that the data collected was a true reflection of the participants' behaviour and experiences, rather than being influenced by the HE. For example, unobtrusive observation methods, such as dressing and behaving in ways that aligned with the observed setting, were used to reduce the impact of the observer on the behaviour of research participants (Mays & Pope, 1995; Spradley, 1979). Additionally, the researcher built strong rapport with the participants and ensured they were aware of the study purpose and informed that their behaviour was being observed. This may have helped to reduce any pressure to conform to the expectations of the researcher.

A final limitation of the study is that observations did not include consultations between health practitioners and clients due to privacy concerns. This approach, while necessary to protect confidentiality, limits the study's ability to fully capture the client's role in IPCP, as defined by the WHO (2010), which highlights the integral involvement of patients and their families in collaborative care. Without direct observation of these interactions, the study focused on practitioner perspectives, which may only capture part of the collaborative process. Future research should explore these perspectives, incorporating client and family experiences, to provide a more comprehensive understanding of IPCP in physiotherapy private practice settings.

5.3.5 Conclusion

This study provides valuable insights into the facilitators of IPCP from the perspective of physiotherapy private practitioners. By identifying these facilitators, this study sheds light on how contextual factors, including the organisational characteristics of physiotherapy private practices, influence and shape the process of IPCP and contributes towards strengthening IPCP within the Australian physiotherapy private practice setting. Emphasising close physical proximity of multiple health practitioners, leveraging technological innovations, recognising the value of IPCP for clients with chronic and complex care needs and cultivating positive professional reputations can promote effective IPCP involving physiotherapy private practitioners. Ultimately, embracing these facilitators can enhance client-centred care, improve health outcomes and optimise resource utilisation. The findings from this research may be used to guide the development of innovative strategies that will support robust and sustainable models of IPCP in the physiotherapy private practice setting.

5.4 Barriers to effective interprofessional collaborative practice for physiotherapy private practitioners

This section is based on a publication in the *Journal of Research in Interprofessional Practice and Education*:

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2023a). The barriers to interprofessional collaborative practice: Perspectives from Australian physiotherapy private practitioners. *Journal of Research in Interprofessional Practice and Education, 13*(1). https://doi.org/10.22230/jripe.2023v13n1a361

The impetus for this research stems from the increasing role of physiotherapy private practitioners in Australia's health care workforce, yet a significant gap in understanding their perspectives on IPCP. As the first qualitative study of its kind, this work delves into the barriers that hinder the implementation of IPCP in the Australian physiotherapy private practice setting. The findings reveal five key themes characterising the barriers to IPCP from physiotherapy private practitioners' perspectives. Importantly, the study does not only identify the barriers but also implies viable solutions to overcome these, such as financial incentives and the adoption of alternative payment models.

The paper has been reformatted for consistency with thesis formatting and is contained below. The published paper is also attached in Appendix 6.

5.4.1 Introduction

Interprofessional collaborative practice refers to the interactions and relationships between, and among, health practitioners from differing professional backgrounds (WHO, 2010). Utilising IPCP enables health practitioners to fully apply their knowledge, skills and abilities, increasing the likelihood of safe, timely, efficient, effective and equitable patient care provision (IPEC, 2016; Reeves et al., 2017b). Effective IPCP contributes to superior patient outcomes, facilitates cost-efficient health care, and increases patient and practitioner satisfaction (Reeves et al., 2017b). Additionally, IPCP may address the difficulties associated with recruitment and retention of rural health practitioners by alleviating professional isolation (Brems et al., 2006; Parker et al., 2013; Perron et al., 2022). There are numerous challenges, however, to achieving effective IPCP in clinical practice. Communication problems, power imbalances, and a lack of awareness of other health professions' expertise have the potential to hinder IPCP (Reeves et al., 2010; Seaton et al., 2021).

Physiotherapy represents one of the largest allied health professions in Australia, accounting for more than 40,000 qualified practitioners (AHPRA, 2023). In Australia, physiotherapists are employed in both the public and private sectors and in metropolitan, regional, rural, and remote locations (APA, 2022; DoHAC, 2023). Most physiotherapists work primarily as clinicians and practice in a range of settings including hospitals, private practice, community and rehabilitation centres, residential aged care, and sporting organisations (APA, 2022; DoHAC, 2023). The remainder of Australian physiotherapists assume principal roles in areas such as academia and management (DoHAC, 2023).

In recent decades, there has been a significant rise in the proportion of Australian physiotherapists working in private practices, which are professional businesses, or for-profit organisations, that are not directly funded through government departments (Engel et al., 2014; Perreault et al., 2014b). Estimated to be less than one-third of all physiotherapists in 1975 (Anderson et al., 2005), those working in private practice are now reported to account for 70% of the total physiotherapy workforce in Australia (AHPRA, 2023; DoHAC, 2023). Since 2013, the physiotherapy private practice industry has grown from being a $1.5 billion (AUD) industry made up of approximately 4,200 businesses (APA & Nous Group, 2013) to a nearly $2.2 billion (AUD) industry made up of more than 7,000 businesses (APA & Nous Group, 2020). Physiotherapy services in private practice are predominately administered to consumers via PHI packages in a FFS environment and supplemented by the Australian Government's MBS and OOP payments (APA & Nous Group, 2020). The strong growth of the physiotherapy private practice industry in Australia may reflect financial constraints on the public health care system, as well as increasing demand for access to physiotherapy in the community (Pretorious et al., 2016).

The predominant service delivery model in the Australian physiotherapy private practice setting is the small-scale monoprofessional clinic (DoHAC, 2023; Seaton et al., 2020a). These clinics typically employ only one professional group or rely on a sole practitioner model of care. Collaborative practice, which is crucial for optimal care, is most effectively achieved through formal team structures and frequent informal communication (Morgan et al., 2015; Reeves et al., 2010; Xyrichis & Lowton, 2008). However, physiotherapists working in monoprofessional clinics may have limited opportunities for unplanned informal contact and spontaneous interaction with health practitioners from different professions (Bennett-Emslie & McIntosh, 1995). Although physiotherapy private practitioners consider IPCP to be necessary to provide adequate patient care, their interprofessional interactions have been reported as infrequent and mainly limited to tasks such as receiving referrals from, and sending client correspondence to, a small number of other health professionals (Perreault et al., 2014a; Seaton et al., 2020a). Physiotherapy private practitioners' understanding of what constitutes IPCP may therefore not align with models of best practice that, for example, advocate for regular multiprofessional team meetings to discuss specific patients (Reeves et al., 2010). This lack of formal participation in IPCP may lead to fragmented care and poor patient outcomes (IPEC, 2016; Reeves et al., 2017b).

Physiotherapists have been recognised as crucial members of collaborative models of care due to their skills in addressing issues associated with an increased chronic disease burden, an ageing population, rapidly rising health care costs, and human resource shortages (Adams et al., 2014; Maharaj et al., 2018; Sangaleti et al., 2017). However, research investigating IPCP from the perspective of physiotherapists, particularly those working in private practice, is scarce (Seaton et al., 2021). Given that health practitioners, including physiotherapists employed in monoprofessional private practices, may work in isolation from other clinicians, or in workplaces that do not conform to formal team-based processes, engaging in IPCP may not be feasible (Oandasan et al., 2009; Szafran et al., 2019). Failure to acknowledge the complexity and specificity of the physiotherapy private practice context may lead to poor practices and misunderstandings regarding IPCP. To inform the development of effective and sustainable strategies for promoting successful IPCP in the physiotherapy private practice setting, it is essential to gain a comprehensive understanding of the perspectives of physiotherapists working in this sector, including information regarding the barriers to implementing collaborative practice models. This knowledge will ensure that strategies developed are tailored to the needs of this growing cohort within the Australian physiotherapy workforce.

5.4.1.1 Research aim

The aim of this study was to explore the barriers to IPCP from the perspective of physiotherapy private practitioners.

5.4.2 Methods

5.4.2.1 Study design

Interpretive description was chosen as the methodological framework for this study due to its unique ability to facilitate the exploration and interpretation of complex social phenomena, particularly in health care settings (Thorne et al., 1997). As an inductive analytical approach explicitly built on constructivist epistemological assumptions, ID minimises the distance between the researcher and participant and allows for the participants closest to the phenomena to share their voices, experiences, and interpretations of their lived reality (Thorne, 2008). Ethics approval was obtained from the JCU HREC (Appendix 12).

5.4.2.2 Theoretical framework and researcher positionality

The study was conducted from a social constructivist perspective, recognising that knowledge pertaining to IPCP emerges through the interaction and shared experiences of physiotherapy private practitioners (Kukla, 2000). Complexity science provided the structural lens to facilitate understanding of the intricate, non-linear interactions and emergent outcomes within the multifaceted environment of physiotherapy private practice in Australia (Zimmerman et al., 1998). This scientific approach offers a framework to examine how diverse stakeholders, adaptive processes and fluctuating conditions collectively influence the dynamics of IPCP (Plsek & Greenhalgh, 2001). The first author's professional background as a registered physiotherapist brought to the study an emic perspective, enabling an enriched analysis through firsthand knowledge of the inherent challenges in private practice and the complex forces shaping the provision of physiotherapy services in this setting (Finlay, 2002). This dual role as a researcher and a practitioner cultivated an empathetic understanding and personal motivation to see improvements in interprofessional collaborative processes in physiotherapy private practice.

5.4.2.3 Participants

Participants were physiotherapists registered with the AHPRA working at private practice facilities in the region covered by the NQPHN. Spanning an area of 510,000 square kilometres, this region is home to an estimated 730,000 people (NQPHN, 2021). Most of the population are located within the major regional centres of Cairns, Mackay and Townsville, while approximately 8% of inhabitants live in remote and very remote areas (NQPHN, 2021). Study participants were required to be: (a) employed in a physiotherapy private practice facility within the NQPHN region for no less than one month; (b) over the age of 18 years and willing to consent to the study; and (c) proficient in spoken and written English.

Participant recruitment was informed by the findings of the online survey conducted in the first phase of this mixed methods project. Physiotherapy private practitioners (n = 31) who expressed interest in participating in further research by providing their contact information on their submitted online survey were emailed and provided with a participant information sheet detailing the study purpose. Recruitment was predominately convenience based, in that participants were selected on a first-come-first-served basis (Robinson, 2014). This approach was used to efficiently recruit participants who were readily available and willing to participate in the study. A semi-purposive stratified element was also used to ensure physiotherapists worked at a range of private practice sites, varying with respect to organisational model, service provision, team composition and geographic location (Robinson, 2014). Participant recruitment was ceased once these purposive criteria were met.

Physiotherapists (n = 10) from a total of ten different private practice sites within the NQPHN region agreed to participate in the study. The physiotherapy private practitioners who agreed to participate in the study were then asked to identify other physiotherapists employed at their facility to take part in an interview through a process of snowball sampling. Invitations to participate in an interview were sent to all identified individuals, of which an additional 18 physiotherapists agreed. The recruitment process for the qualitative study phase is illustrated in Figure 6 (refer to section 3.7.2).

5.4.2.4 Data collection

Participant demographics

Demographic information was collected from the participants via a paper-based questionnaire as interviews commenced (Appendix 9). The demographic data was collected to provide context for participants' responses and included details on their age, gender, entry-level physiotherapy qualification and years of clinical experience as physiotherapists.

Interviews

Semi-structured interviews were conducted face-to-face individually in private consultation rooms at each private practice facility and duration ranged from 16 to 117 minutes (mean = 39 minutes). Individual semi-structured interviews allowed for the exploration of each participant's experiences and perspectives on IPCP, while ensuring that the data collected were relevant to the research objectives (Braun & Clark, 2013). The interview guide (Appendix 10) utilised in the study was developed by the multiprofessional research team and its contents were informed by the insights gained from the online survey conducted in phase one. To ensure that the interview guide effectively focused on the perceived barriers to IPCP in the physiotherapy private sector, the interview questions and exploratory probes were pilot tested with two physiotherapy private practitioners with over ten years of clinical experience. Memos were immediately recorded after each interview to ensure that a reflexive stance was maintained in relation to the research and participants (Birks et al., 2008).

All participants provided written informed consent and agreed to the interview being audio-recorded and transcribed. Audio-recorded interviews were transcribed verbatim with the assistance of secure online transcription software (https://otter.ai). Prior to analysis, participants were given the opportunity to review and make corrections or omissions to the transcripts to ensure the accuracy and authenticity of the data (Patton, 2015).

Observation

Non-participant, observational data was collected to better understand and capture the context within which IPCP occurs in physiotherapy private practice. This involved the researcher (JS) attending study sites and observing the activities, events and interactions taking place, without participating in them (Sagasser et al., 2017). Upon the initial visit at each physiotherapy private practice site, an informal meeting was held to describe the study to all staff members. Physiotherapists and other private practice staff (for example, health practitioners from other professions, administrative assistants) were informed that participation was voluntary and at any point during the fieldwork, they could decline to participate or ask the researcher to leave the site. All staff at each site were verbally consented by the first author for observations. Consultations between practitioners and clients were not observed to ensure client privacy. The research team strictly adhered to ethical guidelines and did not record individual client information or have access to client charts.

In total, 64 hours of observational data were collected, with JS spending one to four days at participating sites. Observation occurred at different times of the day and encompassed a range of structured and unstructured events. Activity was observed in public and staff-only shared spaces throughout the facility, including conference rooms, offices, and hallway corridors. Observations were made at an unobtrusive distance, but close enough to clearly hear conversations between physiotherapists and other practice staff. Direct observation of IPCP at one study site was not possible because the physiotherapist was operating as a mobile sole practitioner with no fixed workplace address. The primary purpose of these observations was not to obtain direct data, but rather to inform subsequent participant interviews. The observations were important for capturing the workplace environment, understanding the context of physiotherapy private practice and identifying evidence of IPCP in routine practices.

Preliminary fieldnotes were handwritten in the form of jottings (Emerson et al., 2011) during the observations at each site, which were typed into a Microsoft® Word document in more detail as soon as possible after each fieldwork session. Observed interactions, including the interaction type and who was involved, where the interaction occurred and how long the interaction lasted, were noted. During periods of observations, JS also held brief, informal conversations with physiotherapists to explore emerging questions and ideas. For example, physiotherapists were sometimes asked to clarify what

had just happened or to explain their actions as they were carrying out a task. Informal conversations were not audio-recorded. Instead, JS wrote down the main messages from these conversations. Fieldnotes incorporated reflections by the first author that included personal feelings, actions, and responses to the situations observed (Lincoln & Guba, 1985; Mays & Pope, 1995) and were peer-reviewed by the research team.

5.4.2.5 Data analysis

Reflexive thematic analysis was employed to facilitate the identification of patterns or themes in the pooled interview and observation data (Braun & Clarke, 2019). Reflexive thematic analysis is an inductive, iterative approach that allows for flexible interpretation of the data, enabling investigation into both surface-level meanings and underlying assumptions.

The first analytic step was familiarisation with the data through careful and repeated reading of interview transcripts, memos and fieldnotes (including observational and informal conversation notes), recording casual observations of initial trends. Next, the data were analysed line-by-line to identify initial codes during an open coding process. For the first five interview transcripts, coding was completed independently by two authors (JS and AJ) to sense-check ideas and explore multiple assumptions of the data in a reflexive manner. Crucial to this process was the authors' shared understanding of terminology and concepts relevant to IPCP (Braun & Clarke, 2019). After this, codes were consolidated and grouped into themes relating to the barriers to IPCP. Themes were refined and named collectively by the research team. Endorsed themes were incorporated into a comprehensive description and populated with relevant quotes to ensure grounding in the data and representation across participants. This approach provided an integrated account of IPCP from the participants' perspective. Data were managed using NVivo software (QSR International; https://www.qsrinternational.com).

5.4.3 Results

5.4.3.1 Participants

Individual interviews were conducted with 28 physiotherapists between March 2020 and February 2021. The mean age of interview participants was 33 years (range 21–61 years) and they had approximately nine years of clinical experience (range 1–38 years). Demographic and workplace information of the interview participants was presented in Table 9 (refer to section 5.2.4).

Participants worked across ten private practice facilities within the NQPHN region. Six of these facilities were co-located with at least one other health service. Seven participants identified as the

principal physiotherapist at their private practice facility. The characteristics of the participating sites were presented in Table 8 (refer to section 5.2.4).

5.4.3.2 Themes

Reflexive thematic analysis of the data produced five overarching themes pertaining to physiotherapy private practitioners' perspectives on the barriers to IPCP: (a) competition for clientele; (b) personal attitudes and beliefs; (c) time constraints and work schedules; (d) geographic location; and (e) rules of funding schemes.

Theme 1: Competition for clientele

This theme describes how physiotherapy private practitioners' perceived need to protect their income can present barriers to IPCP. Many participants admitted that protecting and preserving their income was often a higher priority than IPCP. Referring clients to health professionals working at external organisations was perceived to result in lost clientele.

> *"… it's private practice, it's a competition. If you don't see people … and if they want to go to someone else instead of you, then you're not making money and you don't have a job and you can't employ other people. So, do we really want to involve … other professions?"* (Participant 9, Site 2, Interview)

> *"Very few people willingly hand over their patient … and refer them to another clinic because we're regarded as competition for each other sometimes unfortunately, so then nothing collaborative happens."* (Participant 5, Site 10, Interview)

General practitioners' referral practices were perceived to have significant bearing on physiotherapy private practitioners' ability to generate income. Hence, there was a perceived need for physiotherapists to be mindful of how they conveyed information to GPs.

> *"… because we get that steady stream of patients being referred from doctors, you don't want to annoy them or call them out for things that they shouldn't be doing. If I send an email or send a letter to a doctor telling them all the things that I think they've done wrong, do … they then refer patients to another physio clinic? If I call them out for giving a patient poor advice, I might lose the next patient … so it's a tough balance."* (Participant 14, Site 4, Interview)

Various participants postulated that IPCP may be strengthened between physiotherapists and GPs if the two professions worked in the same clinic. However, some participants believed this would have significant financial implications. These participants argued that other GPs in the community would

not refer to a physiotherapist working at a general practice clinic due to their own perceived fears that referred clients would begin seeing a GP who worked with the physiotherapist.

> *"I had a doctor surgery approach me and say, 'we would love you to come and work for us in our practice as our … physio', but I knew I would immediately eliminate people who didn't like that doctors' surgery … or didn't agree with it. They wanted their doctors to be able to refer directly to me in the clinic, but that would mean any other clinic would not refer to me. Guaranteed. They would not. They won't refer to an allied health professional in another doctor practice. No way. They'd rather farm it out to … a physio group … rather than risk losing the patient to a doctor in that practice."* (Participant 5, Site 10, Interview)

Several physiotherapists working in multiprofessional centres believed that their site employed enough health practitioners from different professions to demonstrate effective IPCP without the need for collaboration with external agencies. Some participants who worked in multiprofessional private practices considered referrals to health professionals outside of their clinic to constitute unnecessary and avoidable financial risk.

> *"In private practice it's all about keeping the business afloat. You need to earn your way here, so you can't be sending people willy-nilly [haphazardly] to other practices because they may not come back to you. I think having so many professions under the one roof here … helps prevent that from happening too much."* (Participant 20, Site 1, Interview)

Despite working alongside an EP in a multiprofessional clinic, one physiotherapist indicated they occasionally withheld referrals from the in-house exercise physiology service to personally reap the financial benefits.

> *"It's probably a little bit of a control freak point of view, but I'd rather take someone to the pool or to the gym myself rather than refer them to exercise physiology. The financial benefits are obviously there if I take someone myself."* (Participant 18, Site 6, Interview)

Other participants outlined personal reasons that may influence low levels of collaboration with health practitioners from other professions in the private health sector.

> *"I think we don't use other professions in private practice as much as we could because you're trying to keep that client base in your own clinic and not refer away from yourself. Most physios in private practice will be paid on a percentage of … billings basis, so as much as that doesn't sound ethically … or morally correct, people have bills to pay, and they're not*

> *inclined to empty a spot in their diary to divert that income out of your practice to someone somewhere else. It's definitely the elephant in the room. You're not taught to think like that, but … people have mortgages, people have kids. In the end, if you're worried that you're not going to make a good enough income … you're going to do everything you can to try and keep that income."* (Participant 15, Site 4, Interview)

> *"I think there's financial reasons that people work in silos … for physios [physiotherapists], especially. Sure, you can work for somebody in a big multidisciplinary clinic and have better collaboration, but you might not get paid very much because your boss takes a percentage of your billings. Whereas working for yourself and running your own business, you can run it exactly how you want … and make more money."* (Participant 5, Site 10, Interview)

Theme 2: Personal attitudes and beliefs

This theme explores how personal attitudes and beliefs towards health practitioners from different professions can create barriers to effective IPCP. Several physiotherapists were critical of the way medical practitioners carried out their duties. Participants reported that this contributed to a lack of respect for, and trust in, their colleagues from the medical profession.

> *"I've worked with doctors who don't seem to take musculoskeletal conditions seriously and … they don't order the right tests and they don't listen to patients' concerns and they're … quick to dismiss any advice from … physios [physiotherapists]. It's frustrating because we're all working towards the same goal of helping the patient, but it feels like we're not on the same page."* (Participant 18, Site 6, Interview)

During an in-service at site ten, whereby a senior physiotherapist was presenting information on men's health, the urologist who had performed surgery on the physiotherapist's client was heavily criticised for their perceived lack of communication with the client. This physiotherapist expressed frustration that the urologist had not informed the individual undergoing surgery of the potential complications and risks: *"That information needs to be disclosed from the outset … before the patient even consents to the procedure. It's part of a surgeon's job to outline all the risks."* (Participant 5, Site 10, Fieldnote) The physiotherapist appeared to place sole responsibility on the treating medical specialist in delivering the client this information, rather than suggest the need for IPCP, and did not indicate whether other health practitioners may have been able to perform this task.

The perceived lack of competence of some health practitioners from other professions contributed to a reluctance to engage in IPCP for many participants. At several study sites, medical mismanagement of clinical cases strongly featured in practice meetings or educational in-services. Medical officers

working in the emergency department at the local public hospital near site four were condemned at a weekly in-service for discharging a person who presented with posterior neck pain following a sporting trauma, in which an unstable cervical spine fracture was confirmed on imaging the next day: *"It's totally unacceptable to send a patient home with that mechanism of injury and those signs and symptoms, without a proper work-up. I was shocked when I heard about it."* (Participant 23, Site 4, Fieldnote) Consequently, participants perceived some medical practitioners to lack proficiency in the diagnosis and management of musculoskeletal conditions. Many participants regarded physiotherapists to be better placed than medical practitioners to arrange appropriate investigations for musculoskeletal concerns: *"I think we're definitely in a much better position than … GPs in knowing when a patient does need a scan and when they don't need a scan. I think a lot of GPs … over scan"* (Participant 7, Site 7, Interview)

Implicit biases held by participants about other health professions were also considered to present challenges to effective IPCP. According to several study participants, health practitioners from some professions, such as chiropractic and osteopathy, adopted a reactive approach to health care, rather than working within a client-centred care paradigm that prioritises health promotion and prevention. Participants were reluctant to collaborate with health practitioners from these professions due to these ideologically opposed differences regarding treatment orientation: *"I'm less inclined to communicate with chiros [chiropractors] and osteos [osteopaths] … because they're … more focused on passive treatment and less about patient-driven outcomes."* (Participant 23, Site 4, Interview) A minority of study participants therefore asserted that services delivered by physiotherapy private practitioners were superior to those provided by other professional groups. For example, the principal physiotherapist of a monoprofessional private practice believed that chiropractic and osteopathy were not evidence-based professions.

> *"We need to get to a point where 99.9% of the population have an injury and they think about a physio [physiotherapist]. That's what I want. I don't want them to even entertain chiros [chiropractors] and osteos [osteopaths] … because they're not evidence-based professions."* (Participant 16, Site 7, Interview)

Theme 3: Time constraints and work schedules

This theme describes how time constraints and workload schedules can present challenges to effective IPCP. A perceived lack of time was reported as a significant barrier to IPCP by most study participants: *"To me, interprofessional collaboration fluctuates depending primarily on how busy people are. The biggest barrier to interprofessional collaboration is definitely the lack of time needed to perform it."* (Participant 17, Site 6, Interview) Several study participants stated that there was not sufficient time during work hours to engage meaningfully in IPCP. These physiotherapists insisted

that treating clients during this time was their highest priority, rather than participating in interprofessional work.

> *"I think the most important thing about clinic time is treating people. Taking however many hours to … write an email … a letter, you're taking that time away from treating patients and if you've got 50, 60, plus patients a week, there's very little time for anything else."* (Participant 14, Site 4, Interview)

A number of participants subsequently contended that interprofessional communication, such as writing referrals and reports to other health practitioners, must be performed in physiotherapy private practitioners' own time outside of clinical hours: *"Your best bet is do … that collaboration … work in your unpaid time. That's when you have to write something up and send it off. I do a tonne of unpaid work doing exactly that."* (Participant 5, Site 10, Interview)

Conflicting work schedules were identified as an additional barrier to IPCP. Participants highlighted the challenges of coordinating collaborative efforts among health practitioners working across multiple locations. Although participants perceived medical practitioners as particularly difficult to reach, they acknowledged the time constraints under which they operated.

> *"I do understand that GPs are busy. My brother's a GP and I know how busy he is and how difficult it can be to find the time to write a detailed handover to a physio or anyone else. GPs are people who are time poor and have not just physios who want a piece of their attention. They have inputs coming from everywhere."* (Participant 15, Site 4, Interview)

The principal physiotherapist of a monoprofessional private practice explained how a general practice clinic conducted regular PD workshops with local health professionals before the COVID-19 pandemic. Although the workshops were well attended, they were discontinued without notice and this participant questioned whether the intensive time requirements to host the event may have precipitated their conclusion.

> *"… a GP [general practice] clinic … was hosting interprofessional PD days and we had our physios attend those, but they just die out. You can drive something that's motivating and amazing and has great buy in, but nothing is sustainable because people are too busy."* (Participant 16, Site 7, Interview)

Theme 4: Geographic location

This theme considers how physiotherapy private practitioners' geographic location impacts IPCP by influencing the ease and frequency of communication and access to resources. Participants who were physically separated from other health professions due to their workplace location reported barriers to IPCP. For example, many participants emphasised how workforce shortages in regional and rural areas made it challenging to collaborate effectively: *"Working regionally, it's very difficult not to be siloed … because Australia … has a very small number of health professionals in regional areas. So, it's difficult to find somebody … to collaborate with in regional Australia."* (Participant 5, Site 10, Interview) In the absence of health practitioners with specialised skills in regional and rural areas, many physiotherapists assumed expanded scope of practice roles.

> *"… what ends up happening in regional and rural areas, is that you treat what comes through the door because the patient might be … post-surgery and have been brought back from [an urban area], and so, you're it. You're now looking after that patient completely. They're not going to anyone else because you're in a … tiny community with limited referral options."* (Participant 5, Site 10, Interview)

When health practitioners with advanced skill sets resided in regional and rural areas, participants explained how it was often difficult to retain them because demand for their services may not have been as high compared to in urban locations.

> *"… we had an OT in town for a while … and they went and did a whole pile of training on lymphoedema, but then weren't getting any referrals … and so eventually picked up another job in the city and moved … which was a bit of a shame. So, that was an opportunity to collaborate with someone with a unique skill set that didn't last long … and isn't overly uncommon in rural communities."* (Participant 22, Site 8, Interview)

Several participants, however, were critical of physiotherapy private practitioners who considered geography to constitute a barrier to IPCP. During a practice meeting at site ten, the principal physiotherapist stated that they had recently contacted a multiprofessional paediatric incontinence service in a major city over 1,500 kilometres away. This physiotherapist declared that the two organisations had exchanged resources with each other, and the service in the urban area had offered to provide telehealth consultations for any clients that health practitioners at site ten were currently treating, who would benefit from further input: *"… we try and network with other services all across Queensland wherever our interests align. I don't think our geography is necessarily a barrier to interprofessional collaboration. It's a bit of a cop out in my view."* (Participant 25, Site 10, Interview)

Theme 5: Rules of funding schemes

This theme describes how funding agency rules can present barriers to IPCP. The rules of some funding schemes were perceived to restrict physiotherapy private practitioners' access to clinicians from other professions: *"… funding can impact our ability to collaborate with other professions for sure. Once I recommended someone to see a dietitian and they didn't have enough NDIS funds to allow that to happen."* (Participant 2, Site 1, Interview)

Several participants explained how rules pertaining to the Federal Governments' Medicare Enhanced Primary Care (EPC) scheme meant that physiotherapists employed in private practice often needed to send clients back to their regular GP who, in turn, would refer them to other AHPs. Physiotherapists are entitled to provide services under the Medicare EPC scheme however, the rules prevent them from referring clients to other AHPs. Although physiotherapists may refer directly to other PHC practitioners working in the private sector, as gatekeepers of the Medicare EPC scheme, only GPs can provide people with access to subsidised allied health treatment.

> *"…say someone has type two diabetes, I know that there's a Medicare referral for that. So, if I think that person will benefit from exercise physiology, I'm more likely to send them back to their GP for onwards referral for the patient to gain the benefits of the Medicare referral system and subsidised exercise physiology. So, I guess you could say I'm still technically collaborating with the GP, but because of restrictions placed on me … by the system, I may not get to collaborate with the EP."* (Participant 18, Site 6, Interview)

> *"I have never actually referred anyone to a dietitian because if I send them, they pay full fee. Whereas if I communicate with their GP and get the GP to send them, they can get a care plan and receive discounted sessions."* (Participant 12, Site 9, Interview)

Negative perceptions towards the medical profession were considered to have emerged due to differences in financial reimbursement for the provision of health services. For example, participants who had knowledge of the remuneration that GPs received for performing tasks designed to improve IPCP, such as initiating EPC plans, suggested that inequalities in health system financing can produce feelings of resentment or distrust among members of the interprofessional team.

> *"GPs are so well compensated for doing the [Medicare EPC] plans even though they just send it off without any further follow up. You're meant to send a letter back to the GP after the initial and at discharge, but it usually just goes to a general fax or email address. We don't know if they have been received or whether they have read it."* (Participant 20, Site 1, Interview)

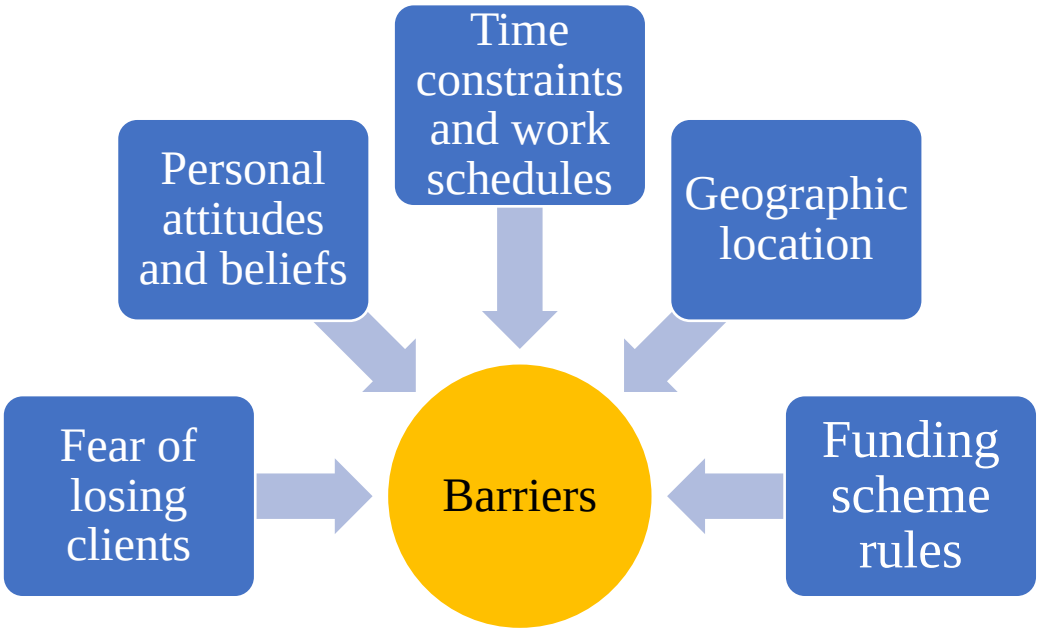
"… if you look at what GPs get for doing … paperwork, it's easy to go, 'well, I get nothing'." (Participant 22, Site 8, Interview)

In Australia, insurance companies are generally required to pay for health services related to motor vehicle accidents under the Compulsory Third Party (CTP) insurance scheme. While it can be appreciated that many insurance providers are profitable organisations, in an observed interaction between two physiotherapists at site one, the companies were depicted as showing no regard for IPCP and dismissive of the exercise physiology profession. During the conversation, one physiotherapist (Participant 3) was informing the other (Participant 8) of the issues that had arisen when interacting with an insurance company in relation to a CTP claim. The physiotherapist managing the claim suggested that the claimant receive fortnightly physiotherapy and twice-weekly exercise physiology to support their recovery. The insurance provider, however, rejected the physiotherapist's recommendation for exercise physiology and instead demanded all the claimant's care be provided by physiotherapy. Visibly frustrated recalling events, Participant 3 remarked*: "I wish I knew what they're basing their decision off. I guess it just shows that it's profits over people for … [insurance companies] at the end of the day, doesn't it?"* (Participant 3, Site 1, Fieldnote)

5.4.4 Discussion

The aim of this study was to explore the barriers to IPCP from the perspective of Australian physiotherapy private practitioners. This study builds on, and explores, preliminary findings from the online survey in phase one, with a sample of physiotherapists employed in private practice sites within the NQPHN region. Five main themes characterised physiotherapy private practitioners' perspectives regarding the barriers to IPCP: (a) competition for clientele; (b) personal attitudes and beliefs; (c) time constraints and work schedules; (d) geographic location; and (e) rules of funding schemes (Figure 9). Given the global expectation for IPCP as a standard of care, the insights derived from this study may hold relevance beyond the current research context (WHO, 2010). Although this study reports the barriers to IPCP from the perspective of Australian physiotherapy private practitioners, the findings from this research may be of interest to private sector physiotherapists internationally, as well as health practitioners from other professions who work in similar clinical settings with similar clientele.

Figure 9. Barriers to interprofessional collaborative practice for physiotherapy private practitioners.



This study highlights the need to address the financial concerns of physiotherapy private practitioners regarding IPCP. Study participants expressed concerns about referring clients to health professionals working at other PHC facilities, as this could result in lost clientele. Financial competition can negatively impact IPCP, as health practitioners from one profession may be less likely to collaborate with clinicians from another profession if they are perceived as a threat to their income-generating potential (Myburgh et al., 2014; Perreault et al., 2014a). In a recent survey (Seaton et al., 2020b), physiotherapists employed in private practice were less likely to participate in interprofessional activities such as shared decision making and team meetings, which may be due to a focus on productivity and individual key performance indicators over collective team or organisational performance. Research also indicates that competition for clientele may undermine IPCP when it is incentivised and encouraged by FFS payment models (Sutherland & Hellsten, 2017). In a FFS model of remuneration, health care providers are paid for each individual service or treatment they provide to a client. Therefore, the more services a provider delivers, the more they may be financially compensated. This payment model may create a financial incentive for providers to focus on delivering their own services, rather than collaborating with other health professionals. Alternative payment models, such as capitation or bundled payments, have been suggested to promote IPCP (Sutherland & Hellsten, 2017). These alternative payment models may offer greater incentive for IPCP by rewarding health care providers for working together to achieve better client outcomes and control costs (Duckett, 2015). Financial incentives may help mitigate some of the challenges associated with IPCP by providing physiotherapy private practitioners with a clear motivation to communicate and coordinate care with other health professionals. Physiotherapy private practitioners

who are financially rewarded for collaborating effectively may be more likely to share information and resources with members of the interprofessional team and develop comprehensive management plans for clients.

The findings of this study provide support for the need for effective communication and collaboration between physiotherapists and medical practitioners, particularly in the management of musculoskeletal conditions. Several participants were critical of how medical practitioners carried out their duties, citing poor communication and medical mismanagement of clinical cases as barriers to IPCP. However, promising signs of a cultural shift within the medical profession towards interprofessional teamwork, client-centred care and improved communication has been reported in the literature (Umoren et al., 2022). This cultural shift is being driven by a variety of factors, including advances in medical technology, changes in health policy and the increasing diversity of the medical workforce (Boulis & Jacobs, 2008; Goddard & Patel, 2021; Nilsen et al., 2020). As the culture of the medical profession continues to evolve, it is anticipated that IPCP between physiotherapists and medical practitioners will also improve, ultimately leading to better outcomes for clients. It must be noted, however, that the pace and nature of cultural change within the medical profession may differ significantly across various countries, regions, and health care systems (Umoren et al., 2022).

Study participants stressed that they had to be mindful of how they conveyed client information to GPs. This was based on the premise that GP referrals significantly influence physiotherapy private practitioners' ability to generate income. Physiotherapists in private practice often rely on referrals from GPs to maintain their client base and ensure the financial viability of their organisation (Dennis et al., 2017). This relationship may prove challenging for physiotherapists to be critical of medical practitioners. Physiotherapists in this study exercised caution when approaching some medical practitioners, for instance, by not being too affirmative in making their observations regarding client management to prevent unpleasant reactions. The extent to which physiotherapy private practitioners withhold information from GPs and medical specialists due to possible financial ramifications the interaction could have, such as discussing clinical cases where client harm or distress is suspected, is currently unclear. However, all health practitioners, including physiotherapists, have a professional obligation to prioritise the best interests of their clients, regardless of the impact on referral relationships (AHPRA, 2022). Physiotherapy private practitioners have a responsibility to provide high-quality, evidence-based care to their clients, and to advocate for the best possible outcomes (AHPRA, 2022). Implementing an IPCP approach to client care is critical to ensuring physiotherapy private practitioners fulfill these responsibilities.

The attitudes of physiotherapy private practitioners towards other health professionals were identified as a significant influence on their willingness to engage in IPCP. For example, some study

participants were reluctant to interact with chiropractors or osteopaths because they felt that they did not share a common language or vision of treatment. These philosophical differences may perpetuate uncertainty about each other's roles and lead to disagreements or tensions, particularly regarding issues related to scope of practice, appropriate treatment modalities and patient safety (Tolouі-Wallace et al., 2022). Negative opinions towards the chiropractic and osteopathy professions may also be based on past interactions with only a small number of individual practitioners. To overcome these barriers, more opportunities are required to bring health practitioners from diverse professional backgrounds together. This may be achieved through arranging training, promotional and social activities between and within health care organisations. Time constraints, however, may present challenges in implementing such initiatives (Oandasan et al., 2009; Perreault et al., 2014a; Seaton et al., 2020a).

The current study also highlights the need to address the challenges associated with time constraints and workload schedules in order to effectively promote IPCP. Physiotherapy private practitioners reported that they did not have enough time to meaningfully engage in interprofessional activities. The significant amount of perceived time required to implement interprofessional work was considered an additional barrier. In the absence of dedicated systems to support IPCP, participation in interprofessional tasks may be at the discretion of individual health practitioners, with many physiotherapists describing these tasks as voluntary and unpaid work that is performed in addition to routine clinical duties. It is therefore possible that existing remuneration methods for health care providers do not adequately account for the time required for effective IPCP. In Australia, there have been growing calls to incentivise IPCP in PHC through the MBS (MBS Review Taskforce, 2020). Medicare is Australia's universal health insurance scheme that is funded by the Australian Government through general taxation (Duckett, 2015). The feasibility of introducing consultation items to increase the uptake and quality of collaborative work, such as case conferences, was recently examined (MBS Review Taskforce, 2020). However, the MBS Review Taskforce (2020) concluded that mandating such practices would exacerbate health system inequities due to workforce shortages in rural and remote areas. To improve client outcomes and enhance the quality of health service provision, it is crucial to manage time pressures and encourage more efficient IPCP. In physiotherapy private practice, this may be achieved through various strategies such as allocating specific time for interprofessional communication and collaboration, offering adequate resources and support for interprofessional tasks, and acknowledging the significance and value of IPCP on service delivery at an organisational level.

The study findings emphasise the need for strategies to support sustainable models of IPCP in the physiotherapy private practice setting in regional and rural areas. Physiotherapists located in regional and rural areas face challenges in collaborating with other health practitioners due to workforce

shortages and limited access to specialised health care services (Cosgrave et al., 2019). Physiotherapy private practitioners working in these areas may therefore need to modify their professional boundaries and assume expanded scope of practice roles, which can lead to increased responsibility and workload (Wakerman et al., 2008; Wiggins et al., 2022). Furthermore, people living in regional and rural areas often experience higher levels of socioeconomic disadvantage and higher rates of chronic diseases compared to those living in urban areas (AIHW, 2024c; NQPHN, 2021). Such factors may impact health outcomes in regional and rural communities and increase the need for IPCP to address complex health issues. Strategies that may overcome geographical barriers to IPCP include improving access to specialised health care services, increasing workforce capacity, promoting networking and collaboration with other health professionals and facilitating use of telehealth technologies (Parker et al., 2013; Perron et al., 2022).

5.4.4.1 Limitations

The main limitation of this study was a potential volunteer bias because participants eligible for study inclusion were chosen from the list of survey respondents in phase one who expressed interest in further research (Seaton et al., 2020a). Physiotherapy private practice sites were however carefully selected to ensure that recruited participants were 'information-rich' (Patton, 2015). In addition, this study deepens our understanding of IPCP from the perspective of an understudied population, physiotherapists working in private practice in regional and rural Australia. Although competition for clientele was a significant barrier to IPCP in the current study, participants were not specifically asked about their employment type or payment structure, such as whether they received a fixed salary or operated on a commission-based system. Collecting this demographic information may have helped to achieve a more comprehensive understanding of how different compensation models influence physiotherapy private practitioners' attitudes and behaviours related to IPCP. The collection of observational data during the COVID-19 pandemic may be considered an additional study limitation. Physical distancing requirements and restrictions may have created challenges for physiotherapy private practice sites to facilitate opportunities for multiple health practitioners to safely interact in the same physical environment, possibly impacting the dynamics and behaviors observed during the study. However, the unique context of the COVID-19 pandemic has offered valuable novel insights by showcasing the adaptability and resilience of health services and health practitioners in response to unforeseen circumstances (Joubert et al., 2022). Furthermore, observational data collected in the study only captured activities, events and interactions that occurred outside of physiotherapy private practitioners' consultations with clients. Consequently, it is possible that instances of interprofessional communication during client consultations, such as phone calls to other health professionals, were not directly observed. Future research should address this limitation by exploring interprofessional dynamics within client consultations to provide a more comprehensive understanding of IPCP in physiotherapy private practice settings.

5.4.5 Conclusion

This study provides the physiotherapy profession with new and relevant information pertaining to the barriers to IPCP from the perspective of the private practitioner. The findings from this study suggest that implementing IPCP in the Australian physiotherapy private practice setting presents several challenges. Financial concerns, such as physiotherapy private practitioners' perceived need to compete for clientele, were significant barriers to IPCP. Introducing financial incentives and adopting alternative payment models to FFS schemes may be necessary to provide physiotherapy private practitioners with a clear motivation to engage in IPCP. This study also highlights the need for more formal opportunities to bring health practitioners from diverse professional backgrounds together to gain new insights and knowledge of other professions' expertise and challenge their own assumptions. The findings from this research may be used to inform the development of innovative strategies that will support sustainable models of IPCP in physiotherapy private practice in the Australian context.

5.5 Recommendations from physiotherapy private practitioners to promote effective interprofessional collaborative practice in primary health care

This section is based on a publication in the *Australian Journal of Primary Health*:

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2024b). Promoting effective interprofessional collaborative practice in the primary care setting: Recommendations from Queensland physiotherapy private practitioners. *Australian Journal of Primary Health, 30*(Issue), page–page. https://doi.org/10.1071/PY23175

Although previous research has described the characteristics of physiotherapy private practitioners' interprofessional interactions and their views and experiences regarding IPCP, there was a need to investigate the strategies, proposals and recommendations that can strengthen IPCP from the perspective of this growing population within Australia's PHC workforce. This research endeavour moves beyond merely documenting physiotherapists' perception-based descriptions of IPCP and explores practical examples, interventions and initiatives that will support sustainable and robust models of IPCP within physiotherapy private practice in Australia. The findings from this study indicate that promoting effective IPCP in physiotherapy private practice requires a multipronged approach, addressing systemic funding and compensation issues, enhancing digital communication systems and optimising IPE and training. This research lays the groundwork for informed policy making that will advance patient care and optimise the integration of services in the Australian health care context. Recognising and acting upon these recommendations will enhance the efficacy of IPCP and ensure that physiotherapy private practitioners are well-equipped to address the inherent complexities in contemporary health care delivery.

The paper has been reformatted for consistency with thesis formatting and is contained below. The published paper is also attached in Appendix 7.

5.5.1 Introduction

Interprofessional collaborative practice is the process of enabling different health care professionals to work together to achieve a common goal and is recognised as an essential aspect of health care delivery (WHO, 2010). The goal of IPCP is to facilitate effective communication, cooperation and teamwork among health care practitioners from different professions to provide comprehensive and coordinated patient care (D'Amour et al., 2008; Reeves et al., 2017b; WHO, 2010). Physiotherapists are crucial members of interprofessional health care teams as their expertise in the assessment, diagnosis and treatment of a wide range of conditions affecting people across the lifespan makes them valuable contributors to comprehensive care (APA, 2022; deBoer et al., 2019).

The physiotherapy private practice setting in Australia provides services to a large proportion of the population (AIHW, 2024a; APA, 2022). It is estimated that physiotherapy private practice is a $2.2 billion (AUD) industry made up of more than 7,000 businesses (APA & Nous Group, 2020). Physiotherapists employed in private practice are reported to account for nearly three-quarters of the Australian physiotherapy workforce (AHPRA, 2023; DoHAC, 2023). The physiotherapy private sector is characterised by a diverse range of practice settings, including musculoskeletal private practices, sports and performance clinics, women's health and pelvic health clinics, neurological rehabilitation centres, pain management clinics and occupational health and workplace rehabilitation (APA, 2022).

The landscape of PHC in Australia has traditionally been one where many health practitioners, including physiotherapists, operate in monoprofessional private practice settings at dispersed locations (Breadon et al., 2022). This may result in PHC practitioners working within their traditional scope of practice, isolated in professional 'silos' and may hinder collaborative and coordinated care (Nicholson et al., 2013). The nature of this clinical environment highlights the need to develop practical strategies that support sustainable models of IPCP specifically tailored for physiotherapy private practice. Such strategies should not only enhance the intensity of IPCP where necessary but also be context sensitive, ensuring they remain adaptable and responsive to Australia's ever-evolving health care system. Crucially, these strategies should emerge and develop from the physiotherapists themselves, as they possess first-hand experience and intimate knowledge of the challenges and opportunities for IPCP. By incorporating the perspectives of physiotherapy private practitioners, valuable insights can be gained that will contribute to the development of effective strategies aimed at supporting IPCP in this clinical setting.

5.5.1.1 Research aim

This study aimed to investigate strategies endorsed by physiotherapists to promote effective IPCP within the Australian private practice setting.

5.5.2 Methods

5.5.2.1 Design

A qualitative approach oriented toward ID was employed (Thorne, 2008). Interpretive description was chosen as the methodological framework for this study due to its unique ability to facilitate the exploration and interpretation of complex social phenomena, particularly in health care settings (Thorne et al., 2016). A fundamental assumption of ID is the subjective construction of reality based on individual experiences and interactions (Thorne, 2008). The consolidated criteria for reporting qualitative research (COREQ) checklist was used to ensure explicit and comprehensive reporting of this study (Tong et al., 2007).

5.5.2.2 Participants

Participants were physiotherapists with the AHPRA working at private practice facilities in the region covered by the NQPHN. Spanning an area of 510,000 square kilometres, this tropical region is home to an estimated 730,000 people (NQPHN, 2021). Most of the population live within the major regional centres of Cairns, Mackay and Townsville, while approximately 8% of inhabitants live in remote and very remote areas (NQPHN, 2021). Participants were eligible for inclusion in the study if they were: (a) employed in a private practice facility within the NQPHN region for no less than one month; (b) over the age of 18 years and willing to consent to the study; and (c) proficient in spoken and written English.

Physiotherapy private practitioners who took part in the first phase of the study and who were interested in participating in further research provided their contact information to the research team. These physiotherapists (n = 31) were subsequently emailed and provided with a participant information sheet detailing the study purpose and the role and experience of the first author and interviewer as a male physiotherapist and current doctoral candidate. Recruitment was predominately convenience based, in that participants were selected on a first-come-first-served basis (Robinson, 2014). This approach was used to efficiently recruit participants who were readily available and willing to participate in the study. A semi-purposive stratified element was also used to ensure physiotherapists worked at a range of private practice facilities, varying with respect to organisational model, service provision, team composition and geographic location (Robinson, 2014). Participant recruitment was ceased once these purposive criteria were met.

Physiotherapists (n = 10) from a total of 10 different private practice facilities within the NQPHN region agreed to participate in the study. The physiotherapy private practitioners who agreed to participate in the study were then asked to identify other physiotherapists employed at their facility to take part in an interview through a process of snowball sampling. Invitations to participate in an interview were sent to all identified individuals, of which an additional 18 physiotherapists agreed. The recruitment process for the qualitative study phase is illustrated in Figure 6 (refer to section 3.7.2).

5.5.2.3 Data collection

Face-to-face individual semi-structured interviews were conducted at each private practice facility and lasted approximately forty minutes (range 16 – 117 minutes). Interviews allowed for the exploration of each participant's unique perspectives, experiences and meanings in relation to IPCP within a flexible framework (Braun & Clark, 2013). The interview guide (Appendix 10) was informed by the findings from the online survey conducted in phase one and was piloted by two experienced private practice physiotherapists. Simple demographic information (age, gender, entry-level physiotherapy qualification and years of clinical experience) was collected from the participants at the commencement of the interview and memos were immediately recorded after each interview to ensure that a reflexive stance was maintained in relation to the research and participants (Birks et al., 2008).

All participants provided written informed consent and audio-recorded interviews were transcribed verbatim with the assistance of secure online transcription software (https://otter.ai). Each participant was provided with a copy of the interview transcription and an opportunity to make any necessary corrections or omissions before the analysis (Patton, 2015). Minor amendments were made to one transcript.

5.5.2.4 Data analysis

Reflexive thematic analysis was employed to facilitate the identification of patterns or themes in the interview data (Braun & Clarke, 2021). Familiarisation with the data through careful and repeated reading of the interview transcripts and memos was the first analytical step, where initial impressions were noted to gain a sense of the content. The data were then analysed line-by-line in a process of open coding, searching for recurring concepts and ideas to generate initial codes. For the first five transcripts, coding was completed independently by two authors (JS and AJ) to sense-check ideas and explore multiple assumptions of the data in a reflexive manner (Braun & Clarke, 2019). This approach emphasises the role of the researcher's reflexivity in coding and theme generation, focusing on an iterative cycle of familiarisation, coding, theme development and revision, with constant reflection on their own biases and assumptions. Crucial to this process was the authors' shared understanding of

terminology and concepts relevant to IPCP and the engagement in regular discussions among the multiprofessional research team to challenge and refine the developing themes (Braun & Clarke, 2019). This collaborative approach added an additional layer of scrutiny and reflexivity, ensuring that the themes were representative of the data and aligned with the research objectives. The codes were then consolidated and grouped into themes and once the potential themes were identified, they were reviewed, refined and named with clear and concise descriptions accurately capturing their meaning. Finally, endorsed themes were populated with relevant quotes that were carefully selected to ensure accurate representation. Data were managed using NVivo software (QSR International; https://www.qsrinternational.com).

5.4.3 Results

5.4.3.1 Participants

Individual interviews were conducted with 28 physiotherapists. The mean age of interview participants was 33 years (range 21 – 61 years) and they had approximately 9 years of clinical experience (range 1 – 38 years). Demographic and workplace information of the interview participants was presented in Table 9 (refer to section 5.2.4).

Participants worked across 10 private practice facilities within the NQPHN region. The characteristics of the participating sites were presented in Table 8 (refer to section 5.2.4).

5.4.3.2 Themes

Reflexive thematic analysis of the data produced three overarching themes: (a) improved funding and compensation; (b) advancing integrated and secure digital communication systems; and (c) prioritising PD and training to enhance collaboration.

Theme 1: Improved funding and compensation

This theme describes the perceived importance of adequate remuneration for physiotherapy private practitioners' time spent on collaborative activities, including formal interprofessional meetings. Most participants highlighted concerns regarding the limitations of the Medicare Chronic Disease Management (CDM) program, calling for improvements in funding and access to support IPCP and ensure better client outcomes. Participants considered government-level investment and structural changes within Australia's health care system as necessary to create an environment conducive for IPCP.

> *"… if we're serious about … interprofessional collaboration, spending at a government level needs to be looked at … whether it's … an extra visit on the [Medicare CDM] program, … a*

sit-down meeting with the other professionals involved, or remuneration." (Participant 24, Site 5)

Participants deemed financial compensation associated with providing physiotherapy services through the Medicare CDM program as insufficient in promoting IPCP. Participants claimed that the reimbursement structure of the CDM program did not adequately account for the coordination and collaboration efforts required in comprehensively addressing the complex health care needs of people with chronic conditions. Participants subsequently stressed the need to increase the Medicare rebate for people receiving physiotherapy services in the CDM program to better reflect the time required to perform interprofessional tasks, such as writing letters and reports to referring medical practitioners.

"Clinicians need to be compensated for the time they spend liaising with other health professionals. It's as simple that. Because if you're not [getting compensated], you get paid $56 for a half an hour Medicare [CDM] session … and in that time, you're supposed to write them [clients] a program and write back to their GP a summary of your session … it's just all of this coordination that you don't get paid for … so if you want interdisciplinary collaboration, you need to pay clinicians for the time that it takes." (Participant 20, Site 1)

Increasing the number of allied health services that a person with a chronic condition and complex care needs is entitled to in a calendar year under the Medicare CDM program was another proposed initiative to improve IPCP. The limited number of allied health services provided through the Medicare CDM program impacted physiotherapy private practitioners' ability to address the needs of people with chronic disease effectively and disrupted continuity of care. Increasing the number of allied health visits would provide physiotherapists with more opportunities to coordinate interventions and share information with other health practitioners.

"We know that the longer the injury or pain has been there, the longer it's going to take to get better, so five sessions with allied health are not enough. And as soon as they say they have to see a podiatrist … you are left with four [sessions]. Then they're seeing a psychologist, an exercise physiologist and a dietitian … and I'm like, what am I meant to achieve in a single session? Look, it's great that they have access to a multidisciplinary scheme because you need that for chronic conditions … but they're usually complex patients, so they need prolonged engagement with us and collaboration between lots of allied health [professionals]." (Participant 6, Site 10)

Theme 2: Advancing integrated and secure digital communication systems

This theme describes physiotherapy private practitioners perceived need for integrated and secure digital communication systems which support effective IPCP, improve information exchange and ensure continuity of client care. Most participants were unsatisfied with the current state of electronic communication systems in the health care setting, citing slow progress, security concerns and technical limitations as barriers to effective implementation: *"We … need shared electronic communication platforms … but they need to be secure and … user-friendly."* (Participant 22, Site 8).

Participants wanted improved communication channels and user-friendly, shared electronic platforms which enable seamless and secure information exchange among health practitioners from diverse professions. Many participants expressed frustrations about limited correspondence and information exchange with health practitioners working in different clinical settings and explained how they often relied on clients to bring relevant documents to their physiotherapy appointments. Without access to comprehensive and up-to-date information from all health practitioners involved in a client's care, participants reported difficulties in making informed decisions and providing continuous care.

> *"… the patient comes with a brief letter saying they need to see a physio [physiotherapist], but … you have no access to those records. We need access to those records to ensure continuity of care. Without … access to a patient's medical file, you cannot get collaboration."* (Participant 6, Site 10)

The potential of the My Health Record (MHR), an Australian Government initiative designed to centralise patient medical records for accessible and coordinated care and support IPCP between health professionals from various clinical settings was acknowledged, but participants indicated that it had not met their expectations.

> *"… it is beneficial … to have unrestricted access to … medical information. That can … help interprofessional practice, but there's … too many ethical considerations with the My Health Record. I … have taken myself off it, so why would I use it with my clients?"* (Participant 25, Site 10)

Theme 3: Prioritising professional development and training to enhance collaboration

This theme describes PD opportunities and training strategies which physiotherapy private practitioners considered would promote effective IPCP. Physiotherapists emphasised the limitations of only receiving profession-specific training in reinforcing professional silos and advocated for interprofessional learning that incorporates the diverse perspectives on client care.

> *"There needs to be more courses … that … [are] tailored to suit a multitude of different health professionals, not just for physios. I know that a lot of physios go to the APA for their continuing education, but I feel like that can kind of pinpoint you into working only with physios [physiotherapists] and not working with other health professionals."* (Participant 1, Site 10)

Participants suggested that there was demand among physiotherapy private practitioners for practical guidance and resources on how to successfully implement IPCP. Participants indicated that physiotherapists in private practice required information on the operational aspects of IPCP, such as delegating tasks to other members of the interprofessional team.

> *"… we all know the importance behind it [interprofessional collaborative practice], so we don't need information on why we should do it. It would more be about how you actually do it. Some people go, 'well, how do I actually organise this? How do I sort of go through and how do I get professions talking to each other? How do we set up case conferences?'"* (Participant 3, Site 1)

Participants felt that training in developing meaningful client-centred participation goals would optimise IPCP. Several physiotherapists emphasised the significance of goal setting in facilitating IPCP and recommended the use of the International Classification of Functioning, Disability and Health (ICF) as a comprehensive framework.

> *"I think physios probably need to be trained in goal setting. If you don't get the goal setting right, you don't get interprofessional practice. It's the crux of it. We need to be identifying meaningful participation goals from the outset and I think the ICF is the best framework to go by because it's just a really easy way to look at goal setting. So, if you don't get a participation goal, you're not going to get therapists from different walks … working towards one overarching goal … and it turns into a multidisciplinary service."* (Participant 8, Site 1)

The university sector was also urged to play a greater role in supporting IPCP by better preparing physiotherapy students to engage in collaborative care models upon graduation. Integrating more mental health learning content into entry-level physiotherapy programs was suggested as means of fostering understanding and facilitating collaboration between health practitioners from different professions in addressing clients' physical and mental health conditions.

> *"Our knowledge of mental health … as a profession … is poor, so I don't think it's any surprise that physiotherapists don't interact with psychologists because we're probably too*

embarrassed to look stupid in front of them. When I graduated [university] five … or six years ago, it [mental health] was a small subject in our final year. So, for me personally, it's taken a lot of professional development to sort of upskill there. And … I'd say at least a quarter of the work I do now is pain education. So, that area … definitely needs to be focused on more. I think it will go a long way in improving collaboration between physiotherapists and psychologists … and probably OTs as well because they do lots of work in the mental health space too." (Participant 7, Site 7)

5.4.4 Discussion

The aim of this study was to investigate strategies endorsed by physiotherapists to promote effective IPCP within the Australian private practice setting. Three main themes characterised physiotherapy private practitioners' recommendations to improve IPCP: (a) improved funding and compensation; (b) advancing integrated and secure digital communication systems; and (c) prioritising PD and training to enhance collaboration. The study findings highlight crucial areas for intervention and emphasise the importance of a multifaceted approach to enhance IPCP in the context of physiotherapy private practice in Australia.

Existing health care financing arrangements may inadvertently discourage IPCP among Australian physiotherapy private practitioners. Fee-for-service payment models, whereby health care providers are reimbursed based on the number or type of services they provide, can lead to a focus on individual care (Breadon et al., 2022). Under a FFS model, there is less incentive for health care providers to work collaboratively or integrate their services as each provider is remunerated separately for their services (Jia et al., 2021). This contrasts with other models such as bundled payments, where a single payment is made for all services related to a particular condition or procedure, incentivising health care providers to work together to manage costs and improve client outcomes (Jia et al., 2021). Participants in the current study indicated that financial remuneration for providing services under the Medicare CDM program was poor, noting that it fails to adequately compensate for the intensive non-clinical collaborative work that is regularly performed following a client consultation, such as preparing correspondence letters to referring medical practitioners. The value of these tasks in ensuring seamless coordinated and collaborative care should not be understated. Subsequently, there is an urgent need for policy makers to review the funding architecture of the Medicare CDM program to ensure that the rates of reimbursement are fair and reflect the demands of providing care to people with chronic conditions. In a FFS environment, if financial reimbursement is perceived to be low when compared to the time required to provide a comprehensive service, health care providers may be forced to limit their interprofessional interactions or prioritise collaboration with health practitioners from certain professions over others. This may, in turn, lead to fragmented care and poorer client outcomes, as health care needs go unmet. Ensuring adequate compensation for services provided

under the Medicare CDM program may encourage more physiotherapy private practitioners to engage in IPCP. The intricate relationship between financial compensation for physiotherapy service provision in private practice and IPCP efficacy warrants further investigation.

This study emphasises the critical role of digital infrastructure in optimising IPCP for Australian physiotherapy private practitioners. In their clinical practice, physiotherapists may adopt a range of digital technologies including electronic health records (EHRs), advanced patient management software and telehealth platforms (Keel et al., 2023). Although the potential of digital technologies such as integrated communication systems in promoting IPCP is evident, the actual utility and efficacy of existing tools raise concerns (Socha-Dietrich, 2021). Many physiotherapists voiced apprehensions about the ability of the MHR system to support IPCP, citing usability issues and community distrust related to privacy and confidentiality. Interoperable, accessible digital platforms can enhance quality of care by providing health practitioners comprehensive, up-to-date patient information, reducing dependence on individual accounts of medical histories (Socha-Dietrich, 2021). Despite the ambitious objectives of the MHR, the present scepticism suggests that it falls short in meeting the practical demands of Australian physiotherapy private practitioners (ADHA, 2018).

This study highlights a notable gap between the content of physiotherapy entry-level training in Australia and the practical needs of physiotherapy private practitioners in clinical practice regarding IPCP. To address this gap, it is imperative to conduct further research in collaboration with the university sector to assess the current extent of IPCP instruction in their curricula. Participants stressed the importance of integrating more mental health training into physiotherapy entry-level curricula, suggesting that equipping physiotherapists with this knowledge would enable them to collaborate more effectively with mental health professionals, such as psychologists, in the clinical setting. This finding not only identifies a current deficit in training but presents an opportunity for educational institutions and peak professional organisations to enhance preparedness of physiotherapists entering the private practice workforce. Furthermore, the need for practical guidance on implementing IPCP underscores a broader gap between theoretical knowledge and practical application in the field. It is, however, possible that some participants lacked formal IPE during their foundational physiotherapy training, potentially hindering their confidence and capability to engage in IPCP. Addressing this challenge through interventions such as facilitated interprofessional workshops could illuminate the significance of IPCP while fostering local community relationships. Primary Health Networks are optimally positioned to play a key role in these initiatives by enhancing collaborative models in PHC and emphasising the crucial nature of PD and training for the advancement of IPCP among physiotherapy private practitioners (Breadon et al., 2022).

The inclusion of participants from only one region of Australia provided a unique opportunity for an in-depth exploration of physiotherapists' experiences of IPCP within a variety of private practice settings. Study participants had a range of clinical experience and their characteristics (including gender, level of highest education attainment and primary physiotherapy clinical area) are comparable to publicly available data on the Australian physiotherapy workforce (DoHAC, 2023), thereby increasing the potential application of the research findings to physiotherapy private practitioners across different Australian regions. Furthermore, given the global expectation for IPCP as a standard of care (WHO, 2010), the findings from this research may be of interest to private sector physiotherapists internationally, as well as health practitioners from other professions who work in similar clinical settings with similar clientele.

5.4.4.1 Limitations

The main limitation of this study was a potential selection bias because participants eligible for study inclusion were chosen from the list of phase one survey respondents who expressed interest in further research (Seaton et al., 2020a). Physiotherapy private practice sites were, however, carefully selected to ensure that recruited participants were 'information-rich' (Patton, 2015). The omission of specific demographic data related to participants' remuneration structures was an additional study limitation. Whether participants were compensated through a salaried arrangement, or a commission-based system was not ascertained. This distinction could potentially influence clinicians' perspectives on IPCP, given that their payment model might affect inclinations towards client retention. As such, the potential differences in attitudes between those on a salary versus those on a commission could not be explored, which may have provided richer context to the findings. Furthermore, the current study does not document how physiotherapists working in private practice conceptualise IPCP. The significance of understanding participants' conceptualisations of IPCP cannot be understated as it informs the relevance and applicability of the proposed strategies in the unique context of private practice. Previous research suggests that physiotherapy private practitioners may associate IPCP with routine clinical tasks such as sending and receiving client correspondence (Perreault et al., 2014a; Seaton et al., 2020a). Future studies would benefit from utilising conceptual frameworks (for example, InterPACT) to systematically classify and analyse various interprofessional activities (Xyrichis et al., 2018).

5.4.5 Conclusion

This research lays the groundwork for informed policy making that will optimise client care and the integration of services in the Australian health care landscape. The findings from this study indicate that promoting effective IPCP in physiotherapy private practice requires a multifaceted approach, addressing systemic funding and compensation issues, enhancing digital communication systems and

prioritising IPE and training. Implementing these proposed measures will support sustainable models of IPCP in physiotherapy private practice and ensure that physiotherapists working in this setting are well-equipped to address the inherent complexities in contemporary health care delivery.

5.5 Chapter Summary

Chapter 5 has presented and discussed the qualitative findings of the study. The chapter contained four published manuscripts that addressed objective 2, 3 and 4. The first paper presented information regarding physiotherapy private practitioners' perceived benefits and disadvantages of IPCP. The second paper identified the facilitators of IPCP in physiotherapy private practice, while the third paper outlined the barriers to IPCP in this setting. Finally, the fourth paper presented strategies endorsed by physiotherapy private practitioners to enhance IPCP. Together, these qualitative insights offer a rich perspective on IPCP in physiotherapy private practice in the Australian context and help to explain the complexities identified in the quantitative phase.

Chapter 6 will provide a discussion on the implications of these findings for practice, education, policy, and future research.

Chapter 6. Discussion and Conclusion

6.1 Chapter overview

This chapter is the final chapter of the thesis. The aim of the body of work presented in this thesis was to characterise the practices, experiences and impacts of IPCP among physiotherapy private practitioners in an Australian context, with the intention of identifying specific strategies to optimise its effectiveness. The completed studies have achieved this, and clearly address gaps in existing literature. Completion of the research in this thesis occurred in two distinct phases and has resulted in:

- Description of the characteristics of physiotherapy private practitioners' interprofessional interactions, including the frequency, modes of communication and level of satisfaction associated with these interactions (related to objective 1).
- Exploration of the perceptions of physiotherapy private practitioners regarding the benefits and disadvantages associated with IPCP to understand its positive and negative effects (related to objective 2).
- Identification and analysis of the facilitators of, and barriers to, IPCP as experienced by physiotherapy private practitioners (related to objective 3).
- Gathering and synthesis of recommendations from physiotherapy private practitioners to formulate strategic proposals to optimise and improve the effectiveness of IPCP (related to objective 4).

This chapter will summarise the key findings from both the quantitative and qualitative study phases reported in this thesis. The final implications of these findings for practice and education in the specific context of physiotherapy private practice in Australia are discussed, highlighting how the research contributes to the existing body of knowledge and suggesting practical applications. Following this, the chapter details the project's limitations, identifying potential areas of improvement in the research methodology and execution, while also acknowledging its robustness. It also outlines future directions for research and policy, suggesting areas where further work could build upon the findings of this thesis.

6.2 Summary of research findings

The findings from this body of work are contained within seven peer-reviewed publications and were provided throughout the thesis. Chapter 2 presented the findings of a published integrative review that synthesised available evidence on the perceptions of physiotherapists and other AHPs regarding IPCP

in PHC. Chapter 4 presented two papers from the quantitative study phase that addressed research objective 1. Chapter 5 then presented four papers from the quantitative study phase that addressed objective 2, 3 and 4. The main findings from each paper are summarised in Table 10.

6.3 Discussion of key findings

6.3.1 Integration of quantitative and qualitative data

A notable strength of this study is its use of an explanatory sequential mixed methods design, integrating survey data, qualitative interviews, and participant observations to provide a comprehensive understanding of IPCP from the perspective of physiotherapy private practitioners in Queensland, Australia. The quantitative data collected in phase one provided a foundational overview of the characteristics of interprofessional interactions, including satisfaction levels with IPCP, the frequency of interactions, and the modes of communication used with various health professionals. The qualitative data gathered in phase two added depth and context by exploring the reasons behind these patterns, capturing the complexities, motivations, concerns, and contextual factors influencing IPCP within an underrepresented population and setting. By triangulating multiple data sources, the study offers a more robust and actionable understanding of the complex realities of IPCP in the Australian physiotherapy private practice setting.

The quantitative findings revealed that 25% of survey respondents were very satisfied and 51% were moderately satisfied with their interprofessional contact with health practitioners from other professions. These levels of satisfaction likely reflect the perceived quality of interactions rather than just their frequency. The qualitative data indicated that physiotherapists perceive IPCP as contributing to a positive work culture and professional satisfaction. Interview participants reported that IPCP enhanced their clinical practice by allowing them to draw on the expertise of other health professionals, which they found particularly valuable in managing complex cases requiring specialised input. Additionally, IPCP was considered crucial for establishing strong referral networks that support financial stability, as a reliable network of professionals maintains patient flow and clinic profitability (D'Amour et al., 2008; Reeves et al., 2017b). These qualitative insights help explain the relatively high levels of satisfaction reported in the quantitative data, demonstrating the personal and professional benefits physiotherapists associate with effective IPCP.

Table 10. Summary of research findings within the thesis.

Chapter	Study aim	Main findings	Limitations
2	Synthesise the available evidence on the perceptions of AHPs regarding IPCP in PHC	Five themes related to IPCP in PHC were derived: (a) shared philosophy; (b) communication and clinical interaction; (c) physical environment; (d) power and hierarchy; and (e) financial considerations. The importance of frequent informal communication and co-location for supporting IPCP was emphasised.	Variations in the methodological quality and heterogeneity of included studies may reduce the strength and validity of conclusions drawn in this review. Many of the included studies did not isolate data to allied health professions, so it may be possible that some findings incorporate health practitioners from other professions.
4	Develop a survey instrument to explore the characteristics of Australian physiotherapy private practitioners' interprofessional interactions (related to Objective 1)	A survey instrument was successfully developed, including 29 questions in six sections with categorical, Likert, and free text response options. The tool can be used to assess the characteristics of interprofessional interactions, including frequency, modes of communication, and satisfaction levels.	A small sample of physiotherapists from only one region were invited to pilot test the survey instrument. Given the small sample size, the survey instrument did not undergo statistical or cognitive pre-testing measures to assess its validity or reliability.
4	Describe the characteristics of Australian physiotherapy private practitioners' interprofessional interactions, including their experiences and perceptions regarding IPCP (related to Objective 1)	Physiotherapy private practitioners acknowledged the importance of IPCP for holistic patient care, however their frequency of interprofessional interactions was low. Most interprofessional communication occurred via email or telephone rather than face-to-face meetings. Physiotherapists also perceived a need for more formal training in IPCP.	The study had a low response rate (20%) and many completed surveys were from practice principals, potentially resulting in a response bias. The non-validated survey instrument might have impacted the reliability of the findings, and focusing on a single region of Australia could have limited generalisability.
5	Investigate physiotherapy private practitioners' attitudes and opinions regarding the proposed effects (positive and negative) of IPCP (related to Objective 2)	Five main themes were identified: (a) IPCP improves quality of care; (b) IPCP is not always necessary and should be context-specific; (c) effective communication is essential for successful IPCP; (d) IPCP supports a positive work culture and builds relationships; and (e) fear of losing clientele can affect the willingness to refer. Although IPCP was perceived as beneficial, it also presented challenges if not managed appropriately.	One limitation was a potential selection bias, as those eligible for study inclusion were chosen from a list of survey respondents who expressed interest in further research. Additionally, no health practitioners from other professions were included. The study may therefore not have captured a holistic perspective of IPCP.
5	Explore the facilitators of IPCP from the perspective of physiotherapy private practitioners (related to Objective 3)	Four main facilitators of IPCP emerged: (a) close physical proximity (integrated team membership, co-location, and interior architecture); (b) technological advancements; (c) complex client presentations; and (d) positive professional reputation. These factors enabled IPCP by increasing informal interactions, improving communication efficiency, promoting client-centred care, and developing respect and trust among practitioners.	The main limitation was a potential selection bias, as study sites were selected from a list of eligible participants interested in further research and may have held strong opinions towards IPCP. It is also possible that participants modified their behaviour in response to being studied (the Hawthorne effect), which may be an additional study limitation.
5	Explore the barriers to IPCP from the perspective of physiotherapy private practitioners (related to Objective 3)	Five main barriers to IPCP were identified: (a) competition for clientele; (b) personal attitudes and beliefs; (c) time constraints and work schedules; (d) geographic location; and (e) rules of funding schemes. The need for financial incentives and alternative remuneration models to overcome these barriers was also emphasised.	The COVID-19 pandemic may have restricted multiple health practitioners from safely interacting in the same physical environment, possibly impacting the dynamics and behaviours observed during fieldwork. Additionally, observational data collected only captured interactions outside of client consultations. Therefore, interprofessional communication during the consultations may not have been observed.
5	Investigate strategies endorsed by physiotherapists to promote effective IPCP within the Australian private practice setting (related to objective 4)	Three main strategies to promote IPCP were presented: (a) improved funding and compensation, particularly addressing the limitations of the Medicare CDM program; (b) development of integrated and secure digital communication systems to facilitate better information exchange; and (c) prioritisation of PD and training to enhance collaboration.	Data was not gathered on participants' payment models (salary or commission), which could influence their attitudes towards IPCP. Additionally, the study lacked information on how physiotherapy private practitioners conceptualise IPCP, potentially limiting how well the proposed strategies fit their specific context.

Quantitative data highlighted that physiotherapy private practitioners' most frequent interprofessional interactions were with GPs and medical specialists. The qualitative findings help explain these high frequencies by revealing that communication with GPs and specialists is crucial for delivering comprehensive, patient-centred care due to their gatekeeping role in Australia's health care system and their responsibility for coordinating care and providing referrals (AIHW, 2024a). This need for regular communication underscores the importance of maintaining strong professional relationships beyond physical settings. However, the qualitative data also revealed challenges in these interactions, such as conflicting treatment approaches or delays in communication, which can hinder the effectiveness of IPCP and impact patient care.

The quantitative data highlighted the extent and frequency of physiotherapists' interprofessional interactions, but the qualitative findings revealed barriers that limit these interactions. Physiotherapy private practitioners were concerned about losing clients when referring clients to other health professionals at competing multiprofessional clinics that also employed physiotherapists. In such cases, clients might stop seeing the referring physiotherapist and instead continue their treatment within the multiprofessional clinic. These apprehensions may help explain why survey respondents reported lower levels of interprofessional contact with certain professions, such as OTs who frequently work with physiotherapists in multiprofessional settings (AHPA, 2023; Perreault et al., 2014a). The fear of losing clients to perceived competitors can outweigh the benefits of IPCP, leading to more selective and cautious interprofessional engagements. This competitive mindset may restrict collaboration and prevent the development of strong interprofessional networks, especially in areas with a limited number of allied health providers.

The survey data indicated that 69% of physiotherapists received some form of IPCP training during their entry-level education, while 47% expressed a need for further training. The qualitative findings provide more detail, revealing that IPCP training during foundational training programs was primarily delivered in the form of lectures and tutorials, with practical IPCP education initiatives, such as simulation-based learning, being relatively limited. Many suggested that current entry-level training does not adequately prepare physiotherapists to navigate the complexities of IPCP, particularly in private practice settings where collaboration with external providers is essential. As a result, physiotherapy private practitioners called for more comprehensive, practice-oriented training that focuses on developing interprofessional communication skills, conflict resolution, and collaborative decision-making. The need for education and training to better support IPCP will be discussed in further detail below.

6.3.2 Navigating a delicate balance between interprofessional work and financial viability

The findings from this research suggest that physiotherapists working in private practice in Australia are challenged by balancing interprofessional activity with financial reward. Physiotherapy private practitioners often operate within a mixed public-private framework, providing services funded through PHI, taxpayer-funded schemes such as Medicare, and the NDIS, and OOP patient payments (APA & Nous Group, 2020). However, IPCP requires time, resources and commitment, which according to study participants, can strain the financial aspects of private practice. Effective IPCP often involves additional meetings, communications, and shared decision-making processes that are not necessarily directly billable. For instance, discussing patient cases with other health practitioners, attending interprofessional meetings, and coordinating care plans require time away from direct patient care and contact.

Issues pertaining to financial reimbursement for physiotherapy services in the Australian private practice setting highlight the complexity of funding models impacting IPCP implementation. Physiotherapists perceived a potential need for reform of funding models used in the Australian health care system to address these challenges. This project suggests that current health care financing arrangements, particularly the FFS payment model, do not adequately compensate for the time and effort required by physiotherapy private practitioners to meaningfully participate in IPCP. The FFS payment model, which dominates the private health care sector in Australia, reimburses health care providers based on the number or type of services they provide (Duckett & Nemet, 2019). This compensation method may limit opportunities for IPCP given that most schemes do not provide remuneration for collaborative activities such as multiprofessional team meetings, case conferences and care coordination with other health practitioners (Sutherland & Hellsten, 2017). Study participants indicated that the FFS model disincentives IPCP because these non-billable activities require time and effort that could otherwise be spent on directly billable activity, such as individual patient consultations. Without adjustments to the structure and funding of physiotherapy, and other PHC services provided in the private practice setting, there may be no incentive for these providers to change the extent of their involvement in IPCP.

The study findings provide evidence in support of exploring and implementing alternative payment models that incentivise IPCP and value-based care in the context of the physiotherapy private practice setting (Sutherland & Hellsten, 2017; Wise et al., 2022). A potential option is bundled payments, where providers receive a single payment for all services related to a specific episode of care, such as managing a chronic condition (Jia et al., 2021; Sutherland & Hellsten, 2017; Wise et al., 2022). This model may facilitate IPCP by promoting joint responsibility for patient outcomes and incentivising

efficient, high-quality care (Duckett & Nemet, 2019; Wise et al., 2022). However, adopting bundled payments in Australia would require significant structural adjustments, such as defining the scope and duration of care episodes, establishing fair payment rates, and ensuring robust data collection and analytics to monitor outcomes and prevent overuse or underuse of services (Bonney et al., 2015; Wise et al., 2022). Capitation is another alternative payment model where health care providers receive a fixed payment per patient per period, covering all necessary services (Sutherland & Hellsten, 2017). This model has the potential to encourage preventative care, and subsequently IPCP by shifting the focus from the volume of services to patient health outcomes (Bonney et al., 2015; Sutherland & Hellsten, 2017). Capitation could promote IPCP among health care providers to manage patients more efficiently, reducing the need for unnecessary services and interventions (Duckett & Nemet, 2019; Jia et al., 2021). However, capitation models in the Australian health care context carry risks, including the potential for under-treatment if providers seek to minimise costs within the fixed payment framework (Bonney et al., 2015). For capitation to be successful, quality measures and safeguards must therefore be implemented to ensure patient care remains a priority (Bonney et al., 2015).

Despite the potential of alternative payment models used in the Australian health care system, financial incentives alone may not sustain a long-term commitment to IPCP if individual practitioners do not inherently value or believe in its benefits. Effective IPCP requires a cultural shift where it is seen as integral to high-quality care rather than an optional component (Gilbert et al., 2010; Reeves et al., 2017b; Schot et al., 2020). Physiotherapists in the study highlighted that meaningful IPCP often depends on building strong professional relationships, fostering mutual respect and trust, and developing an understanding of other professions' knowledge, skills and expertise. The introduction of new MBS items for interprofessional work, such as case conferences, could incentivise the PHC workforce to engage in IPCP by allowing them to bill for time spent coordinating care and discussing patient cases with other providers (MBS Review Taskforce, 2020). However, there are concerns that the effectiveness of these items would vary across different regions and potentially exacerbate existing inequities in access to health care services, especially for rural and remote practitioners with limited access to a diverse range of health professions (MBS Review Taskforce, 2020). Addressing these disparities may require targeted strategies to support private practices in rural and remote areas through increased funding, access to interprofessional training, and digital health solutions to enable IPCP.

This research suggests that the organisational model of a physiotherapy private practice also has financial implications for IPCP. Physiotherapists working as sole traders or in monoprofessional clinics recalled occasions in which interprofessional contact, such as referrals to a health practitioner at another clinic, had resulted in lost revenue. Subsequently, these participants reported a tension in balancing IPCP with financial sustainability. When IPCP is indicated, these physiotherapy private

practitioners may therefore strategically refer to members of the multiprofessional team who operate in similar monoprofessional settings to mitigate the risk of losing clients to their perceived competitors (Perreault et al., 2014a). However, the study also provides support in favour of physiotherapists who actively engage in IPCP, particularly those in leadership or management positions. The outcome of such engagement was the establishment of strong referral networks that enhanced care coordination and created reliable referral bases, thereby supporting both clinical and financial stability. Building these networks was regarded as a crucial element for effective and sustainable IPCP, leading to improved care delivery, patient outcomes, and professional growth.

Physiotherapy private practice facilities that transition from a monoprofessional to a multiprofessional practice should be encouraged wherever it is practically possible. A multiprofessional private practice model allows physiotherapists and health practitioners from other health professions to interact spontaneously and provide comprehensive care under one roof. This integration can increase the scope of billable activities and lead to greater internal referrals within the clinic (Duckett & Nemet, 2019; Myburgh et al., 2014). For example, a physiotherapist might refer a client to an EP within the same facility, retaining business revenue. Providing services from a range of health professions at a private practice facility may also provide a buffer against financial uncertainty caused by policy changes or fluctuations in demand for services from a certain profession, thereby resulting in more stable and diversified income streams (Duckett & Swerissen, 2017). However, transitioning to multiprofessional models of care and enhancing IPCP requires significant organisational change, dedicated time, and structural support, including the development of robust interprofessional networks and communication strategies to foster a collaborative culture (Reeves et al., 2017b; WHO, 2010).

6.3.3 Physiotherapy private practitioners may benefit from further training in interprofessional collaborative practice

Physiotherapists working in private practice in Australia may not always possess the requisite skills to engage effectively in IPCP. Although most physiotherapists in this study received some form of training in IPCP during their entry-level education, only a small proportion of survey respondents (16%) reported engaging in more structured, simulation-based learning environments that are designed specifically to develop interprofessional skills. This may reflect a broader issue within physiotherapy education, where entry-level programs tend to focus on developing profession-specific competencies, often in professional silos, with limited emphasis on dedicated IPE (HPAC, 2019; Khalili et al., 2013). Despite some universities having made efforts to integrate IPE intro their curricula, these initiatives are not universally implemented or standardised across all institutions (Croker et al., 2015; Thistlethwaite et al., 2019).

The persistence of professional silos in physiotherapy education can be partly attributed to the organisational structure of higher education institutions, where health professional programs are often housed in separate faculties or departments (Croker et al., 2016; Rodger & Hoffman, 2010). This structural separation limits opportunities for shared learning experiences and restricts interprofessional interaction among students from different health professions during formative training years (Rodger & Hoffman, 2010). For example, physiotherapy programs may be situated within a faculty of health sciences, while medical or nursing programs are often in other faculties and may be located in different areas of the university campus. Accreditation standards that emphasise specialised knowledge further reinforce these silos, limiting the integration of IPE (Gordon et al., 2021; Reeves et al., 2016). Subsequently, many physiotherapists may graduate without sufficient exposure to the principles of IPCP, such as teamwork, communication, and shared decision-making (HPAC, 2019; Thistlewaite et al., 2014). This siloed training may influence their professional behaviour, as some physiotherapists continue to work independently even in co-located or multiprofessional clinics, reflecting the persistence of profession-specific boundaries despite physical proximity to other health professionals (Reeves et al., 2016).

There is strong recognition of the importance of IPE in equipping health professionals, including physiotherapists, with the skills needed for effective IPCP (IPEC, 2016; WHO, 2010). Interprofessional education fosters mutual respect, understanding, and collaboration by bringing together students from various health professions to learn about, from, and with each other (WHO, 2010). The qualitative study phase revealed that physiotherapists perceive significant benefits in IPCP, particularly for managing complex client cases that require coordinated input from various members of the multiprofessional team. However, effectively implementing IPE within physiotherapy curricula to ensure it is not just a theoretical concept, but a practical, experiential learning process remains a challenge (O'Keefe & Ward, 2018; Rodger & Hoffman, 2010). For IPE to be impactful, it must move beyond classroom-based instruction to include more immersive, simulation-based learning environments and dedicated interprofessional placements (Brewer et al., 2018; Reeves et al., 2016). This requires institutional support, but also faculty training and development in interprofessional teaching methods (Brewer et al., 2018; HPAC, 2019; IPEC, 2016). Educators must be adequately equipped with the skills and knowledge to design and deliver interprofessional curricula and manage group dynamics in interprofessional settings effectively (van Diggele et al., 2020; WHO, 2010). Moreover, logistical and administrative barriers, such as coordinating schedules, aligning curricula, and creating shared learning spaces, pose additional challenges (Olson & Bialocerkowski, 2014). Addressing these gaps is necessary to create authentic interprofessional learning experiences that prepare graduates for IPCP.

Continuing PD programs also play a vital role in equipping practising physiotherapists with IPCP skills. The study findings showed that only a small proportion of physiotherapy private practitioners (20%) had participated in additional IPCP training beyond their entry-level qualification, indicating a gap in ongoing PD. To bridge this gap, continuing PD opportunities that focus on interprofessional communication, teamwork, and shared care planning could be beneficial for physiotherapy private practitioners seeking to build these competencies. The APA, representing over 31,000 physiotherapists across Australia, offers an extensive PD program through workshops, seminars, and online courses (APA, 2022). This platform positions the APA well to provide targeted IPCP training. However, time constraints and competing clinical responsibilities often limit the ability of physiotherapists to attend additional training, underscoring the need for flexible continuing PD options, such as online modules or short, intensive courses (Bluteau et al., 2017; Reeves et al., 2017a). Additionally, Primary Health Networks, as regional organisations focused on coordinating and improving PHC, could support these efforts by fostering interprofessional networks and communities of practice, providing platforms for knowledge exchange and continuing PD (NQPHN, 2021).

Addressing ideological differences between health professions, such as those between physiotherapy, chiropractic, and osteopathy, is another important consideration for IPE. Findings from this study indicate that perceived differences in treatment philosophies, particularly regarding evidence-based, patient-centred care, can result in reluctance among physiotherapists to engage in IPCP with practitioners from these professions. For instance, a recent study highlighted that professional boundaries among these groups are often fluid yet contested, with some practitioners using boundary-work to assert their professional identity while distinguishing their approach from others (Tolouei-Wallace et al., 2024). These ideological tensions are often reinforced by historical and social factors, contributing to resistance towards IPCP (Hall, 2005). Therefore, IPE programs should not only focus on developing IPCP skills, but also on fostering open dialogue about these professional differences (WHO, 2010). Activities that promote team building, open communication, and reflective practice can help address stereotypes, biases, and hierarchical attitudes that impede effective interprofessional learning (Khalili et al., 2013; McNair, 2005). Encouraging reflective practices and discussions on professional values and clinical approaches can help reduce misconceptions, foster mutual respect, and promote a more integrated and collaborative approach to patient care (Gittell, 2016; Tolouei-Wallace et al., 2022). Interprofessional education initiatives must also encourage a shared language and appreciation of each profession's contributions, addressing personal attitudes and beliefs to enhance IPCP (WHO, 2010).

6.3.4 Co-location holds potential to facilitate interprofessional collaborative practice, but it is not a panacea

Co-location of health services, where two or more different health care organisations share a common physical space, such as the same building, has been identified as a potential facilitator of IPCP for physiotherapists in private practice settings. The proximity of diverse health professionals within a shared environment can increase opportunities for both informal and formal interactions, enabling face-to-face communication, building relationships, and promoting more efficient knowledge-sharing (D'Amour et al., 2005; Oandasan et al., 2009). This aligns with findings from other health care contexts, where co-location has been shown to break down professional barriers and foster a culture of collaboration (Bonciani et al., 2018; Morgan et al., 2015). Study participants reported that co-location made referrals more convenient and facilitated regular informal communication, which helped in building trust and familiarity among health professionals. However, participants also advised that simply situating health practitioners from different professions in close proximity does not automatically lead to improved IPCP. Co-location requires intentional planning, structured approaches, and supportive organisational cultures to fully realise its potential benefits on IPCP (Szafran et al., 2019; Wener & Woodgate, 2016).

Co-location of health services enhances patient care by providing a more integrated approach to managing complex health issues (Bonciani et al., 2018; Mulvale et al., 2016; Wener & Woodgate, 2016). Co-located health services streamline care pathways by offering patients access to a 'one-stop-shop', which aligns with person-centred care principles that emphasise convenience and continuity (Morgan et al., 2015; WHO, 2010). This service delivery model improves patient engagement and adherence to treatment plans by minimising logistical barriers, such as the need for multiple appointments at separate locations, thereby offering a seamless care experience (Bonciani et al., 2018; Duckett & Willcox, 2015; Wakerman et al., 2008). Additionally, the ability for real-time consultations between co-located providers allows for dynamic, responsive care, where adjustments to treatment plans can be made collaboratively and more promptly (Bonciani et al., 2018). However, to realise these benefits, co-located health service providers are encouraged to implement deliberate strategies, such as regular case discussions and integrated care protocols, to ensure that their proximity indeed translates into enhanced IPCP (Reeves et al., 2010; WHO, 2010).

Despite the potential benefits, this research suggests that co-location alone does not ensure effective IPCP. Many participants indicated that professional silos may persist even in co-located settings, where health practitioners continue to work independently rather than collaboratively. This reflects challenges identified in other research, where co-location without proper interprofessional frameworks can lead to 'parallel play' rather than true collaboration (Barsanti & Bonciani, 2019;

Rousseau et al., 2017; Szafran et al., 2019). Factors such as differing professional identities, scopes of practice, and power dynamics may present barriers to IPCP in co-located settings (Sargeant et al., 2008). Physiotherapy private practitioners indicated that certain professions, such as medicine, often dominate decision-making processes, which has the potential to marginalise other health professions and perpetuate hierarchical divides (Reeves et al., 2009; Vergès et al., 2020). To address these issues, structured strategies such as regular team meetings, shared documentation systems, and coordinated patient care pathways are essential for fostering equitable participation and mutual respect among practitioners from all health professional backgrounds (Hall, 2005; Reeves et al., 2010; Schot et al., 2020). Building a supportive organisational culture that actively encourages interprofessional interactions is critical to move beyond mere physical proximity and achieve meaningful collaboration that enhances patient outcomes (King & Shaw, 2022; Sargeant et al., 2008).

Co-location can be a valuable strategy to facilitate IPCP in the context of physiotherapy private practice, but it should be approached with caution (Barsanti & Bonciani, 2019). Although private practice facilities that were co-located with one or more other health services intensified physiotherapists' informal interprofessional interactions and provided convenient opportunities to share knowledge and resources, this research also suggests that achieving effective IPCP requires more than just physical proximity. Active effort and a supportive organisational culture are needed to ensure that co-location leads to effective IPCP rather than reinforcing existing professional silos (King & Shaw, 2022; Sargeant et al., 2008). Therefore, practice owners are encouraged to invest in building strong interprofessional relationships, creating shared goals, and implementing policies that facilitate effective communication and coordination (Gittell, 2016). Further research is necessary to explore the dynamics of co-located health services more thoroughly and to identify the conditions under which co-location can dismantle professional silos and significantly enhance IPCP in physiotherapy private practice settings.

6.3.5 Digital technology has the capacity to overcome barriers to interprofessional collaborative practice but does not yet meet the practical demands of physiotherapists

Digital technology offers substantial opportunities to enhance IPCP among physiotherapy private practitioners, particularly in a geographically dispersed country like Australia. Tools such as EHRs, telehealth, and integrated information systems support real-time communication, facilitate data sharing, and improve patient outcomes (Socha-Dietrich, 2021). For physiotherapists who often coordinate care across various locations and health care settings, these technologies help bridge geographic and temporal gaps by enabling collaboration among health practitioners from diverse professional backgrounds (Keel et al., 2023). This allows for timely consultations and comprehensive care planning, contributing to continuity of care and better patient management (Robertson et al.,

2022). However, the effectiveness of digital technology in supporting IPCP depends on factors such as adoption rates, ease of integration, and perceived ease of use and usefulness among health care providers, which are critical for their sustained use in clinical practice (Robertson et al., 2022; Socha-Dietrich, 2021).

Telehealth is widely adopted for direct clinical care, such as FFS therapeutic interventions (Bradford et al., 2016; Halcomb et al., 2023). However, the research findings suggest that it is underutilised as a tool for enhancing IPCP among physiotherapy private practitioners. Survey findings from this study revealed that only one physiotherapist reported using videoconferencing for interprofessional interactions. This underutilisation may stem from factors such as a lack of awareness, insufficient training, or perceived inconvenience compared to in-person meetings. Videoconferencing holds significant potential to facilitate more flexible, frequent, and inclusive communication among health professionals, particularly when in-person meetings are impractical due to geographic or time constraints (Reeves et al., 2017b; Socha-Dietrich, 2021). By not leveraging videoconferencing to its full potential for IPCP, health care providers may miss opportunities to improve team effectiveness, decision-making processes, and patient outcomes (Shaw et al., 2021; Socha-Dietrich, 2021).

Digital tools such as EHRs and integrated information systems have the potential to promote IPCP by providing health care providers with up-to-date and comprehensive patient data (ADHA, 2018; Robertson et al., 2022). However, the practical realities of these tools often limit their effectiveness (Xu et al., 2013). Initiatives like Australia's MHR were designed to create a centralised digital repository accessible to both patients and providers, thereby fostering transparency and collaboration (ADHA, 2018). However, study participants reported that the MHR system had not fully realised its potential. This may be due to factors such as inconsistent adoption among health care providers, varying levels of digital literacy, concerns over data quality, and integration challenges with existing EHR systems (Holt et al., 2023; Pang et al., 2020). These barriers can lead to fragmented information, increased administrative burdens, and potential risks to patient safety, all of which undermine the intended benefits of IPCP by making timely communication and coordinated care planning more difficult among different providers (Robertson et al., 2022; Socha-Dietrich, 2021; Whitelaw et al., 2021). Addressing these integration issues is crucial to enhance individual clinical care and to ensure effective team-based care coordination in today’s digital age.

Concerns about privacy and data security further complicate the adoption and effective use of the MHR system for IPCP (Pang et al., 2020). Since its inception, both patients and health care providers have been hesitant to engage with the platform due to fears of data breaches and unauthorised access (Holt et al., 2023; Pang et al., 2020). These concerns have undermined confidence in the system's ability to safeguard sensitive information (Lupton, 2019). Study participants highlighted that

apprehensions about data privacy create significant barriers to integrating digital tools for IPCP, as trust and data security are fundamental for sharing information across professions. This view aligns with other research that identifies data privacy as a critical obstacle to the widespread adoption of digital health technologies (Whitelaw et al., 2021). Although robust security measures, such as encryption and access controls, are in place to protect sensitive health information, building sustained trust in the MHR system will require continuous investment in advanced security technologies, regular audits, and transparent communication about data protection protocols (ADHA, 2018; Socha-Dietrich, 2021). Ensuring that digital platforms, such as the MHR, are perceived as secure and trustworthy is essential for promoting their use in enhancing IPCP.

A significant barrier to the effective use of digital tools for IPCP is their integration into existing clinical workflows (Huang et al., 2020). Many health care providers use various EHR systems that do not seamlessly integrate with the MHR platform, resulting in fragmented care, duplication of services, and increased administrative burdens (Mullins et al., 2021). Physiotherapy private practitioners indicated that coordinated care efforts become significantly more complicated when client health information is scattered across multiple EHRs. In contrast, physiotherapists working in public hospitals across Australia, such as those using the integrated electronic medical record (ieMR) system in Queensland Health facilities (Queensland Health, 2024), have access to clinical records from a range of health care providers on a common platform, enabling more streamlined and effective coordination of care. Such integration is lacking in private practice settings. For example, a physiotherapist managing a musculoskeletal condition in private practice may need to coordinate with a GP in a separate clinic, and an orthopaedic surgeon who may work across several sites, each using different EHR systems. Without access to each other's clinical notes, these providers often rely on formal written communication, such as referral letters and progress reports, which do not always arrive when needed and can hinder timely decision-making and collaborative care planning. This lack of interoperability is widely recognised in the literature as a key barrier to the effective implementation of digital health systems and undermines efforts to enhance IPCP (Huang et al., 2020; Mullins et al., 2021; Whitelaw et al., 2021). To address these challenges, the ADHA is launching initiatives such as the Allied Health Industry Offer, targeting clinical information system vendors to increase the number of compliant products capable of connecting to national infrastructure, including the MHR and electronic prescribing services (ADHA, 2024a). This effort aims to improve the sharing of information across allied health, PHC, and aged care by facilitating real-time access to patient data, thereby supporting IPCP and reducing administrative burdens (ADHA, 2024a). Enhancing interoperability requires not only technical solutions but also aligning digital tools with the diverse workflows of different health care professionals (Huang et al., 2020). Ensuring that these tools are user-friendly and seamlessly fit into everyday clinical practice is essential for maximising their utility

and promoting more integrated, collaborative care across different professions (Robertson et al., 2022; Socha-Dietrich, 2021).

Developing national standards for health information exchange and fostering interoperability across different systems are essential for ensuring more consistent, reliable, and seamless use of digital tools in IPCP (ADHA, 2024b). Actively involving health care providers, including physiotherapists, and patients in the design and implementation processes can enhance both usability and acceptance by ensuring these systems align with the practical needs of end-users (Keel et al., 2023; Socha-Dietrich, 2021). Incorporating user-centred design principles, continuous feedback mechanisms, and pilot programs can further refine digital tools to fit the realities of clinical practice, thereby promoting a more intuitive and accessible experience (Maramba et al., 2019). Additionally, enhancing digital literacy among health care providers through targeted education and training initiatives is critical to fostering consistent and effective use of these platforms across different care settings (Keel et al., 2023; Kuek & Hakkennes, 2020). By focusing on these strategies, digital tools can be more effectively leveraged to meet the practical demands of physiotherapy private practitioners.

6.4 Limitations

Limitations of the specific studies contained in this thesis have been outlined in the individual chapters. As a body of research, there are three primary limitations. The first relates to the definition of IPCP, which was not fully explored from the perspective of physiotherapy private practitioners. This study did not examine how these physiotherapists define or conceptualise IPCP within their clinical practice. Instead, this research used a broad definition commonly found in the literature: “a situation when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers and communities to deliver the highest quality of care across settings” (WHO, 2010, p.13). This definition aimed to capture a wide range of interprofessional activities, however it may have possibly led participants to report routine tasks such as receiving referrals and sending patient correspondence as IPCP. Interprofessional collaborative practice encompasses more than routine exchanges; it requires shared decision-making, mutual respect, and a common goal for patient care (D'Amour et al., 2005; Reeves et al., 2017b). The study findings suggest that some physiotherapists may have a limited view of interprofessional interaction, focusing on these transactional activities. Future research in this setting would benefit from adopting a more nuanced definition that distinguishes between different types of interprofessional work and emphasises elements of collaborative practice including responsibility, accountability, coordination, communication, cooperation, assertiveness, autonomy, and mutual trust

and respect (Bridges et al., 2011). This will ensure that IPCP is understood within the unique context of physiotherapy private practice.

The second limitation of this body of work is the inclusion of participants from only one region in Australia. The NQPHN region, spanning approximately 510,000 square kilometres and home to almost 730,000 people, was chosen as the research setting. Although the majority of the population resides in the regional centres of Cairns, Mackay, and Townsville, a significant proportion live in rural and remote areas (NQPHN, 2021). The NQPHN region provides a valuable context for understanding IPCP, given the distinct challenges faced in regional, rural, and remote areas, including a maldistributed health workforce, reduced access to specialised care, and higher rates of chronic conditions (AIHW, 2024c; Cosgrave et al., 2019; NQPHN, 2021). These factors make effective IPCP particularly important for optimising health care delivery and addressing service gaps. However, the NQPHN region does not include large urban centres, typically characterised by a higher concentration of health care resources, greater accessibility to specialised services, and a more diverse and dense health workforce (AIHW, 2024a). This geographical focus may limit the transferability of findings to metropolitan settings where IPCP dynamics may differ. However, given that Australian physiotherapy private practitioners operate under common funding schemes, adhere to similar training standards, and share professional affiliations, such as membership with the APA, the research findings are expected to hold relevance for physiotherapy private practitioners in these settings as well. The insights gained from this study make a novel contribution to the literature and highlight the need for targeted strategies to support IPCP, especially in regions with significant health inequities and logistical challenges.

The final limitation related to the exclusive focus on physiotherapists, which may not fully capture the diversity of perspectives involved in IPCP (WHO, 2010). Although the research findings provide valuable insights into the experiences of physiotherapy private practitioners, they do not necessarily represent the views of other health professionals who also participate in IPCP within private practice settings. Including a broader range of professionals, such as EPs, OTs, or psychologists, could offer a more comprehensive understanding of interprofessional dynamics in these settings. Focusing solely on one profession may present a narrow view of IPCP, overlooking complexities that may arise when multiple professions interact in shared environments (WHO, 2010). Future research should include a broader range of health professionals in private practice settings that do not necessarily adhere to conventional team-based processes. This would help build a more inclusive understanding of interprofessional dynamics and enhance the applicability of IPCP strategies across various professional groups and contexts. However, as one of the largest allied health professions in Australia, physiotherapists frequently play a central role in IPCP, particularly in private practice, where they regularly collaborate with other health professionals in the provision of person-centred care (AHPRA,

2023; APA, 2022; DoHAC, 2023). By centring the voices of physiotherapy private practitioners, this study sheds light on a group whose experiences of IPCP have been previously underexplored.

6.5 Future research and policy directions

Further research is warranted to evaluate the extent of IPCP instruction in entry-level physiotherapy curricula in Australia and to develop effective training programs tailored to the needs of physiotherapy private practitioners. Inconsistencies in IPCP instruction across health professions currently exist, which highlights the need for standardised guidelines and best practices for IPE in entry-level physiotherapy programs (Thistlethwaite et al., 2014; O'Keefe & Ward, 2018). Identifying gaps in IPCP instruction can inform curriculum development, ensuring that these principles are effectively integrated into foundational training. Well-structured IPE programs, incorporating simulation-based learning and interprofessional clinical placements, improve students' readiness for IPCP (Brewer et al., 2018; Reeves et al., 2016). However, the effectiveness of these programs may be constrained by gaps in faculty preparedness, including their ability to design, deliver, coordinate, and assess interprofessional curricula (Brewer et al., 2018; van Diggele et al., 2020). To address this, faculty development programs should be implemented to enhance educators' knowledge, skills, and attitudes toward IPCP (HPAC, 2019; IPEC, 2016). Subsequently, future research could pilot these programs to evaluate their impact on faculty competency and the preparedness of physiotherapy graduates for IPCP in private practice.

Patient involvement remains a significant gap in interprofessional research and policy, with limited focus on understanding how patients perceive IPCP and its impact on their health outcomes (Reeves et al., 2017b; Soklaridis et al., 2017). Although this study did not include the patient perspective due to its specific focus on physiotherapy private practitioners, future research should prioritise exploring this important voice to provide a more comprehensive understanding of IPCP. Actively involving patients in IPCP can improve health outcomes, increase patient satisfaction, and enhance care coordination (D'Amour et al., 2005). Understanding patient expectations and experiences regarding IPCP could help establish it as a standard of care, driven by informed patient demand (Morgan et al., 2015; WHO, 2010). Future studies should investigate how patients perceive IPCP, the benefits they experience, and how their participation can be optimised. Increasing patient awareness of the advantages of IPCP could shift expectations toward more collaborative models of care. This patient-driven demand may encourage health care providers to overcome existing barriers to IPCP, such as hesitancy or unwillingness, contributing to more integrated, patient-centred care in the context of private practice.

6.6 Conclusion

The research presented in this thesis provides the physiotherapy profession in Australia with new and relevant insights regarding IPCP from the perspective of private practitioners – a group that represents a significant proportion of the Australian physiotherapy workforce. By examining their experiences, this research highlights the complexities of implementing IPCP in private practice settings, particularly in regional and rural areas. Key challenges identified include funding and compensation issues, inadequacies in digital communication infrastructure, and gaps in IPE and training. Addressing these challenges requires targeted strategies, such as reforming funding models to incentivise collaborative and coordinated care, improving digital tools for more effective interprofessional communication and interaction, and developing training programs that better prepare physiotherapy private practitioners for IPCP in the clinical setting. This research lays a strong foundation for informed practice, education and policy interventions to optimise IPCP in physiotherapy private practice in an Australian context. Implementing these measures will build and sustain robust collaborative care models and provide privately practising physiotherapists with the support needed to navigate the complexities of contemporary health care delivery.

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Appendices

Appendix 1: Peer-reviewed publication – 'Allied health professionals perceptions of interprofessional collaboration in primary health care: An integrative review'

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2021). Allied health professionals' perceptions of interprofessional collaboration in primary health care: An integrative review. *Journal of Interprofessional Collaboration, 35*(2), 217–228. https://doi.org/10.1080/13561820.2020.1732311

Abstract

This integrative review synthesises research studies in order to explore the perceptions of AHPs regarding interprofessional collaboration in PHC. A comprehensive literature search was conducted using three electronic databases and a manual search of the Journal of Interprofessional Care. The Crowe Critical Appraisal Tool was used to assess the quality of included papers. Study findings were extracted, critically examined and grouped into themes. Twelve studies conducted in six different countries met the inclusion criteria. Thematic analysis revealed five themes: (a) shared philosophy; (b) communication and clinical interaction; (c) physical environment; (d) power and hierarchy; and (e) financial considerations. This review has identified diverse key elements related to interprofessional collaboration in PHC, as perceived by AHPs. Opportunity for frequent, informal communication appeared essential for interprofessional collaboration to occur. Allied health professionals working in close proximity to health practitioners from other professions had more regular interprofessional interactions than those who were geographically separated. Co-location of multiple PHC services within the same physical space may offer increased opportunities for interprofessional collaboration. Future research should avoid reporting on AHPs in PHC collectively, and isolate data to the individual professions. Direct observational methods are warranted to investigate whether AHPs' perceptions of interprofessional collaboration align with their actual clinical interactions in PHC settings.

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ORIGINAL ARTICLE

Allied health professionals' perceptions of interprofessional collaboration in primary health care: an integrative review

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ABSTRACT

This integrative review synthesizes research studies in order to explore the perceptions of allied health professionals regarding interprofessional collaboration in primary health care. A comprehensive literature search was conducted using three electronic databases and a manual search of the *Journal of Interprofessional Care*. The Crowe Critical Appraisal Tool was used to assess the quality of included papers. Study findings were extracted, critically examined and grouped into themes. Twelve studies conducted in six different countries met the inclusion criteria. Thematic analysis revealed five themes: (1) shared philosophy; (2) communication and clinical interaction; (3) physical environment; (4) power and hierarchy; and (5) financial considerations. This review has identified diverse key elements related to interprofessional collaboration in primary health care, as perceived by allied health professionals. Opportunity for frequent, informal communication appeared essential for interprofessional collaboration to occur. Allied health professionals working in close proximity to health practitioners from other professions had more regular interprofessional interactions than those who were geographically separated. Co-location of multiple primary health care services within the same physical space may offer increased opportunities for interprofessional collaboration. Future research should avoid reporting on allied health professionals in primary health care collectively, and isolate data to the individual professions. Direct observational methods are warranted to investigate whether allied health professionals' perceptions of interprofessional collaboration align with their actual clinical interactions in primary health care settings.

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Introduction

Interprofessional collaboration is a complex and dynamic phenomenon defined by the relationships and interactions that occur between health practitioners from various professional backgrounds to deliver safe, high-quality patient care (Reeves et al., 2010; World Health Organization (WHO), 2010). Interprofessional collaboration is an expected standard of practice for health practitioners and is a widely acknowledged solution to facilitate more effective and appropriate patient care (Bookey-Bassett et al., 2017; WHO, 1978). Responsibility, accountability, coordination, communication, cooperation, assertiveness, autonomy, mutual trust and respect are deemed essential for successful collaborative practice in health care (Ontario College of Family Physicians, 2000). Research indicates that interprofessional collaboration can have positive effects on both the health care system and health outcomes. Interprofessional collaboration has been shown to be an integral component in the provision of cost-effective health care and contributes to superior patient outcomes and enhanced patient and practitioner satisfaction (Reeves et al., 2017). Despite the documented benefits of interprofessional collaboration, it remains a variably understood concept and difficult to implement in particular health care settings, including primary health care (Karam et al., 2018; Reeves et al., 2018; Xyrichis & Lowton, 2008). The aim of this integrative review was to synthesize the available evidence on the perceptions of allied health professionals regarding interprofessional collaboration in primary health care.

Background

Interprofessional collaboration is considered essential in the management of chronic disease and makes best use of available resources (Green & Johnson, 2015; Supper et al., 2015; WHO, 2010). Increasing prevalence of chronic illness is creating significant burden for patients, families and health care systems (Moore, 2018). As the first point of contact, primary health care plays a key role in preventing, delaying and reducing the progression of chronic diseases (Department of Health, 2013a; WHO, 1978). Due to their high and complex needs, management of people with chronic conditions is typically delivered by multiple primary health care practitioners from a range of professional backgrounds (Van Dongen et al., 2016). The knowledge, skills, and experience of health practitioners from each profession are brought together to produce the best outcome for individuals with chronic illness (Körner et al., 2016; Xyrichis & Lowton, 2008).

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Primary health care services are offered within both the public and private health sectors in settings such as general practice, community health centers and allied health clinics (Reddy, 2017). While the majority of people access primary health care through a general practitioner, these services may also be provided by the nursing and allied health professions (Lizarondo et al., 2016; McInnes et al., 2015). However, an overwhelming shortage of general practitioners is of international concern to the primary health care workforce, particularly in regional, rural and remote areas (Grover & Niecko-Najjum, 2013; Kamien & Cameron, 2006). As first-contact primary health care practitioners, allied health professionals are able to assess, treat and manage patients without a medical referral (Allied Health Professions Australia (AHPA), 2017a; Stute et al., 2018). Consequently, allied health professionals have significant potential to reduce the burden on general practitioners with expertise in their relevant fields (Salmon et al., 2017). The complex health care needs of patients with chronic illness often require specialized skills that medical practitioners may not possess and may be more appropriately provided by allied health professionals (Australian Physiotherapy Association (APA), 2009).

The features of effective interprofessional collaboration in primary health care are poorly defined in the literature. Primary health care differs from other health care settings with regard to organizational structure and daily service delivery (Duckett & Willcox, 2015; Keleher & MacDougall, 2016). Unlike secondary and tertiary settings, such as hospitals, primary health care is largely affected by the issues of location and time (Oandasan et al., 2009). Subsequently, health practitioners working in primary health care might not share the same space or maintain face-to-face contact with members of their team and may only have limited opportunity for formal meetings to discuss specific patient cases (Mulvale et al., 2016).

In many countries, government funding schemes have been introduced to enable individuals with chronic diseases to receive subsidized services in private primary health care facilities (Australian Institute of Health and Welfare (AIHW), 2016; Cumming, 2011; Hutchison et al., 2011). Within the private health sector, a common allied health service delivery model is a small monodisciplinary clinic (Department of Health, 2013b). That is, a facility whereby an allied health professional may be the sole practitioner, or a facility only employing practitioners from one allied health profession, thus limiting occasions for interprofessional interactions. Although larger allied health practices which may be co-located with other health services are becoming increasingly common, allied health professionals working in primary health care, for the most part, continue to operate in monodisciplinary practice settings (Department of Health, 2013b). The shift toward co-location of multiple primary health care services within the same physical space may offer allied health professionals increased opportunities for interprofessional collaboration (Bonciani et al., 2018; Rousseau et al., 2017; Wener & Woodgate, 2016).

Allied health professionals have been described as critical to the success of primary health care (Department of Health, 2013b; Lizarondo et al., 2016). Allied health professionals are encouraged to collaborate with practitioners from diverse health professions to deliver optimal patient care, however there is little published evidence exploring the characteristics of their interprofessional interactions, especially in the primary health care setting (D'Amour et al., 2008). The experiences of health practitioners regarding interprofessional collaboration in primary health care has attracted previous attention in the literature, however most of this research concerns the professions of medicine and nursing (McInnes et al., 2015; Morgan et al., 2015; Schadewaldt et al., 2013). The features of interprofessional collaboration, as perceived by allied health professionals working in primary health care, remain largely unknown and unexplored.

Methods

Study design

The framework developed by Whittemore and Knafl (2005) was used to guide this integrative review. This method enables the synthesis and analysis of both quantitative and qualitative research, therefore providing a more holistic picture of the research landscape of a specific topic area (Grant & Booth, 2009). Integrative reviews are particularly suitable in health research, as they can generate answers to more complex questions which health practitioners may encounter in the clinical setting (Whittemore & Knafl, 2005).

Search strategy

A comprehensive literature search was conducted in May 2018 using three electronic databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Ovid Medline and Scopus. To prevent accidental omission of relevant key articles, a manual search of articles published in the *Journal of Interprofessional Care* (inception – May 2018) was also performed. Multiple keyword combinations were used in the search strategy, which was developed in conjunction with the health liaison librarian at James Cook University (Table 1). Reference lists of included studies were also reviewed to identify additional articles not found during the database search.

Study eligibility criteria

Study selection was completed by two reviewers (JS and AJ), who independently scanned the titles and abstracts of citations identified through the search for inclusion in the review. For the purpose of this review, allied health professionals were defined as those professions listed by both Allied Health Professions Australia (AHPA) and the Australian Health Practitioner Regulation Agency (AHPRA). Allied Health Professions Australia is the peak national organization for allied health professionals in Australia, representing twenty allied health professions (AHPA, 2017b), while the Australian Health Practitioner Regulation Agency supports the fifteen National Boards that are responsible for regulating the health professions (AHPRA, 2017). The professions comprised chiropractic; occupational therapy; optometry; osteopathy; physiotherapy;

Table 1. Electronic database search strategy.

MEDLINE search strategy	(1) (interprofession$ or inter-profession$).tw. (2) (interdisciplin$ or inter-disciplin$).tw. (3) exp interprofessional relations/ (4) exp interdisciplinary communication/ (5) collaborat$.tw. (6) or/1–5 (7) (chiropract$ or optometr$ or osteopath$ or physiotherapy$ or podiatr$ or psycholog$).tw. (8) "occupational therap$".tw. (9) "physical therap$".tw. (10) "allied health".tw. (11) allied health occupations/ (12) exp occupational therapy/ (13) exp physical therapy/ (14) exp chiropractic/ (15) exp optometry/ (16) exp podiatry/ (17) or/7–16 (18) 6 and 17 (19) "private$ practi$".tw. (20) "private sector".tw. (21) "primary care".tw. (22) "primary health".tw. (23) exp private practice/ (24) exp private sector/ (25) exp primary health care/ (26) or/19–25 (27) 18 and 26 (28) limit 27 to english language (29) limit 29 to systematic reviews (30) 28 not 29 (31) limit 30 to journal article
CINAHL search strategy	(SU interprofession*) or (SU interdisciplin*) or (SU collaborat*) or (MH interprofessional relations) AND (SU chiropract*) or (SU "occupational therap*") or (SU optometr*) or (SU osteopath*) or (SU physiotherapy*) or (SU "physical therap*") or (SU podiatr*) or (SU psycholog*) or (SU "allied health") or (MH chiropractic) or (MH occupational therapists) or (MH optometry) or (MH osteopathy) or (MH physical therapists) or (MH podiatry) AND (SU "private* practi*") or (SU "private sector") or (SU "primary health") or (MH "private practice+") AND narrow by language: -english
Scopus search strategy	TITLE-ABS-KEY(interprofession* OR inter-profession* OR interdisciplin* OR inter-disciplin* OR collaborat* AND chiropract* OR "occupational therap*" OR optometr* OR osteopath* OR physiotherap* OR "physical therap*" OR podiatr* OR psycholog* OR "allied health" AND "private* practi*" OR "private sector" OR "primary care" OR "primary health")

podiatry; and psychology. Each of the seven allied health professions have been reported in the primary health care literature to varying extents, so were deemed appropriate for final inclusion in the review.

To be included in this review, the publication had to:

- Relate to interprofessional collaboration and/or collaborative practice among allied health professionals within primary health care
- Report on allied health professionals' perceptions of interprofessional collaboration and/or collaborative practice in primary health care
- Contain at least one allied health profession or more
- Contain original research where primary data collection and analysis was evident
- Be English language research papers published in peer-reviewed journals

Studies were excluded if:

- They were primarily concerned with evaluation of an interprofessional practice intervention
- They related to interprofessional collaboration and/or collaborative practice between health practitioners and patients
- They related to interprofessional collaboration and/or collaborative practice within an interprofessional education context
- Participants included pre-qualified health practitioners (for example, allied health students)
- They were literature reviews, or non-research articles (for example, editorials, dissertations, anecdotes, opinion pieces or commentaries)
- Participants were not working in clearly defined primary health care settings

Quality assessment

The Crowe Critical Appraisal Tool (CCAT) was used to assess the methodological quality of included studies. The CCAT was developed as a structured tool for evaluation of health research and has established validity and reliability with high intra-class correlation (Crowe & Sheppard, 2011; Crowe et al., 2011, 2012). The tool consists of eight categorical items: preliminaries; introduction; design; sampling; data collection; ethical matters; results; and discussion (Crowe & Sheppard, 2011). Each categorical item was scored from 0 (no evidence) to 5 (high evidence) and summed to provide a total score for each article that was presented as a percentage (that is, [score/40] x 100). Based on criteria from a previous study (Sznitman & Taubman, 2016), the total score for each paper was considered as "poor quality" (≤ 50%), "moderate quality" (51–-74%) and "high quality" (≥ 75%). Scoring was undertaken independently by two reviewers (JS and AJ) with discrepancies in scores being resolved through discussion. No paper was excluded based on methodological quality (Whittemore & Knafl, 2005).

Data abstraction and synthesis

Thematic analysis was undertaken to interpret the large amount of information presented in the papers, as this approach is flexible and allows clear identification of prominent themes (Braun & Clarke, 2006). To facilitate analysis, data were extracted into an evidence table according to authors and location; study aims; methodology; sample characteristics; and main findings. The organization of qualitative and quantitative data within a single matrix supported the integration of both narrative and statistical evidence (Whittemore, 2005). Tabulated data were viewed by all authors to identify patterns and relationships via an iterative process. Preliminary themes were discussed, compared collectively, and agreement reached before one author (JS) categorized them into a final set of themes and sub-themes, which were checked and rechecked (Braun & Clarke, 2006).

Results

Study selection

In total, 2,851 articles were identified during the literature search. Of these, 2,846 were found through database searching, and an additional five articles were identified from a manual search of the *Journal of Interprofessional Care*. After the removal of duplicates, 2,272 papers were excluded based on title and abstract. Of the remaining 70 articles, four were not accessible and were excluded. Full-text analysis was conducted on the remaining 66 articles, resulting in nine studies appropriate for review. An additional three relevant articles were identified following review of reference lists (Figure 1).

Study characteristics

Twelve papers met the inclusion criteria and are presented in Table 2. Six of the reviewed studies were conducted in Canada (Brown et al., 2015; Dufour et al., 2014; Gaboury et al., 2009; Perreault et al., 2014, 2016, 2018), two in Australia (Grace & Higgs, 2010; Gray & Orrock, 2014), two in Europe (Doekhie et al., 2017; Myburgh et al., 2014) and one study took place in each of New Zealand (Pullon et al., 2016) and the United Kingdom (Sargeant et al., 2008).

Physiotherapists were represented in seven studies (Doekhie et al., 2017; Dufour et al., 2014; Perreault et al., 2014, 2016, 2018; Pullon et al., 2016; Sargeant et al., 2008); three separate studies included chiropractors (Gaboury et al., 2009; Grace & Higgs, 2010; Myburgh et al., 2014) and occupational therapists (Brown et al., 2015; Doekhie et al., 2017; Sargeant et al., 2008); psychologists were included in two studies (Brown et al., 2015; Doekhie et al., 2017); and osteopaths were participants in one study (Gray & Orrock, 2014). No studies met the inclusion criteria exploring interprofessional collaboration from the perspectives of optometrists and podiatrists. Five of the included papers did not isolate data to the allied health professions (Brown et al., 2015; Gaboury et al., 2009; Grace & Higgs, 2010; Pullon et al., 2016; Sargeant et al., 2008).

For studies that articulated sample size, there was a large variation, ranging from six to 327 participants. In two studies, details regarding the precise number of participants were difficult to obtain (Grace & Higgs, 2010; Pullon et al., 2016). Participants practised in primary health care settings at various stages of development from emerging to established teams and were responsible for delivering a broad range of primary health care services. Participants worked across different primary health care settings with respect to organizational structure, including monodisciplinary, multidisciplinary and co-located practice facilities.

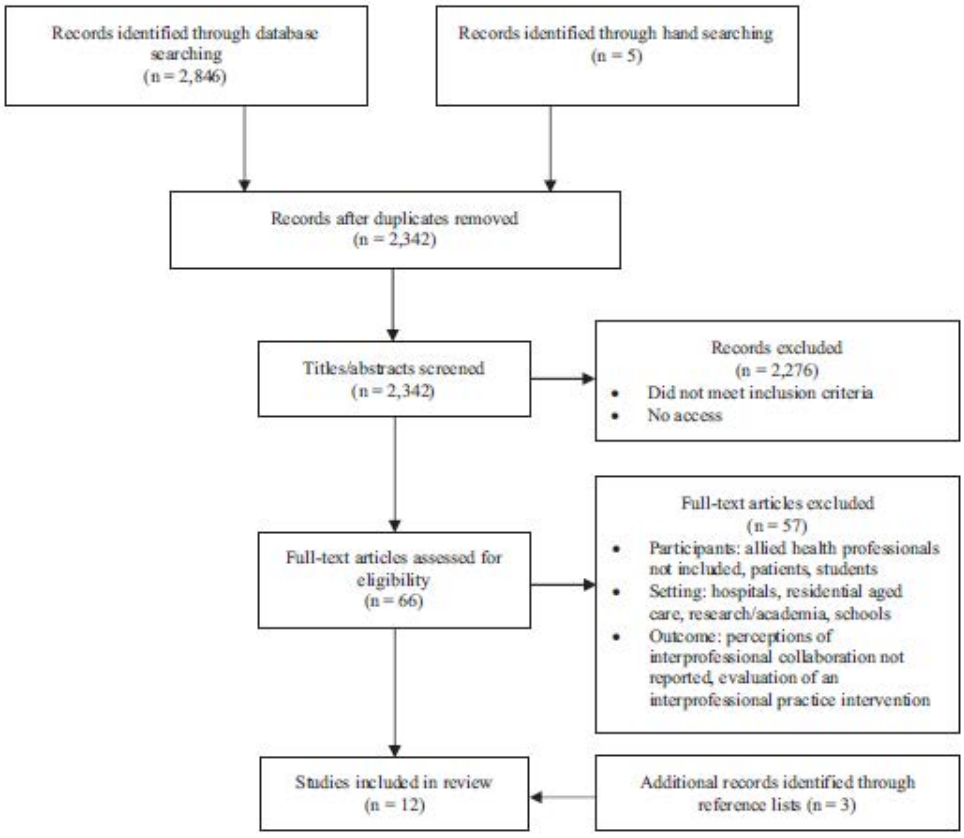

Figure 1. Flow chart illustrating th selection of papers for the review.

Table 2. Characteristics and findings of those studies included in the review.

Study	CCAT (%)	Aim	Method	Sample	Main findings
Brown et al. (2015) Canada	65	Assess teamwork in FHTs	Mixed methods. Qualitative grounded theory approach using semi-structured interviews and questionnaire survey using the TCI and PERK scale	19 FHT practice sites in urban and rural areas. Qualitative phase: 107 participants (including GPs, nurses, SWs, dietitians, psychologists, OTs). Quantitative phase: 317 participants (including GPs, nurses and AHPs)	Nine dimensions related to high team functioning were identified: common philosophy, scope of practice, conflict resolution, change management, leadership, and team evolution. Leadership was pivotal in forging a common philosophy and encouraging team collaboration
Doekhie et al. (2017) Netherlands	78	Explore PHC practitioners' perceptions of teams and team membership, and what influences these perceptions	Mixed methods. Quantitative questionnaire followed by semi-structured interviews	Qualitative phase: 152 PHC practitioners representing 12 professions (including GPs, physiotherapists and psychologists). Quantitative phase: 32 PHC professionals representing 5 professions (including physiotherapists and OTs)	Misalignments existed between perceptions regarding which health professions are members of the team and the relational coordination between health professions. Three factors influenced health practitioners' perception of being part of a team: knowing the people you work with; the necessity for knowledge exchange; and sharing a holistic view of caregiving
Dufour et al. (2014) Canada	73	Explore physiotherapists' roles and how they are enacted within PHC teams	Qualitative study based on grounded theory using semi-structured interviews	12 physiotherapists from various PHC sites	Physiotherapists negotiated their place within PHC teams through five interrelated roles: manager; evaluator; collaborator; educator; and advocate
Gaboury et al. (2009) Canada	78	Investigate elements perceived by health practitioners working in IHC clinics that facilitate or limit collaboration	Qualitative study using semi-structured interviews	11 CAM practitioners (including chiropractors), 10 biomedical practitioners (including physicians, dentists and nurses) from five IHC clinics in urban areas	Constructs contributing to collaboration included health practitioners' attitudes and educational background, as well as external factors such as the health care system and financial pressures. Major processes affecting collaboration were found to result in learning opportunities for health practitioners, modified burden of work and ultimately, higher affective commitment toward the clinic
Grace and Higgs (2010) Australia	55	Examine the relationships among GPs and CAM practitioners and their respective roles in co-located practices	Qualitative hermeneutic phenomenology approach using cumulative case studies, focus groups and key informant interviews	GPs and CAM practitioners (including chiropractors) from IHC clinics in a metropolitan area	Three practice styles were identified among GPs and CAM practitioners working in IHC clinics: mutually empowering; GP-directed with varying levels of autonomy afforded CAM practitioners; and limited collaboration where patients were offered mainstream medicine and complementary medicine, which GPs performed themselves
Gray and Orrock (2014) Australia	55	Explore health practitioners' perspectives of the theory and practice of the integrative medicine model, relevant to factors influencing referral among them	Qualitative study using semi-structured interviews	2 GPs, 2 naturopaths and 2 osteopaths from two PHC clinics providing integrative medicine	Predominant themes centered on the notion of interprofessional relationships and collaborations. Insight into these relationships within integrative medicine revealed concepts of interprofessional trust and respect. Sharing a common philosophy of care and understanding pertaining to scope of practice and area of expertise appeared to support the integrative medicine framework. These concepts and themes were determined as important factors influencing referral patterns
Myburgh et al. (2014) Denmark	45	Describe interprofessional practice in private chiropractic clinics	Mixed methods design using an electronic survey	166 chiropractors working in chiropractic private practices	Chiropractors in the Danish context facilitate interprofessional practices by employing health practitioners from other professions to work in their clinics. Danish chiropractors perceive interprofessional practice as important in the delivery of musculoskeletal health services
Perreault et al. (2014) Canada	85	Describe the interprofessional practices of private sector physiotherapists, and identify influencing factors and effects of interprofessional practices, as perceived by physiotherapists	Qualitative study using semi-structured interviews	13 physiotherapists working in the physiotherapy private sector	Factors that influenced physiotherapists' interprofessional practices were related to patients, providers, organizations, and wider systems. Physiotherapists viewed positive effects of interprofessional practices, including elements such as gaining new knowledge and being valued in one's own role, as well as improvements in overall treatment and outcome

(*Continued*)

Table 2. (Continued).

Study	CCAT (%)	Aim	Method	Sample	Main findings
Perreault et al. (2016) Canada	73	Describe private sector physiotherapists' interprofessional practices regarding LBP management and identify organizational and provider-level variables associated with the intensity of such practices	Quantitative study utilizing a descriptive cross-sectional survey	327 physiotherapists working in the physiotherapy private sector	Physiotherapists reported frequent interactions with other physiotherapists, family physicians and therapy assistants, but infrequent interactions with psychologists, neurosurgeons, and chiropractors. Frequently reported means of interactions were written/oral messages sent through clients, face-to-face unplanned discussions, and faxed or mailed letters
Perreault et al. (2018) Canada	40	Identify private sector physiotherapists' perceptions of interprofessional work regarding interventions for adults with LBP	Quantitative study utilizing a descriptive cross-sectional survey	327 physiotherapists working in the physiotherapy private sector	Proximity of physiotherapists with other health practitioners, clinical workloads, and client's financial situation were perceived as important factors influencing the implementation of interprofessional work
Pullon et al. (2016) New Zealand	75	Examine elements of interprofessional collaboration in PHC settings using a novel range of data collection methods and primary analysis of observational data	Multiple case study design adopting non-participant observation and interviews	GPs, nurses, AHPs, receptionists and administrators across three GP clinics in urban and regional areas	Five overarching and intersecting cross-case themes emerged: built environment; location and demographics; business and employment models; shared mission and goals; and team structure and climate
Sargeant et al. (2008) UK	63	Explore perceptions of effective PHC teams to determine the related learning needs of PHC practitioners	Qualitative study based on grounded theory using focus groups	61 PHC practitioners (including physicians, dietitians, OTs, physiotherapists) from ten PHC settings	Five themes of PHC team effectiveness emerged: understanding and respecting team members' roles; recognizing that teams require work; understanding PHC; working together: practical "know-how" for sharing patient care; and communication

AHP, allied health professional; CAM, complementary and alternative medicine; CCAT, Crowe Critical Appraisal Tool; FHT, family health team; GP, general practitioner; IHC, integrated health care; LBP, low back pain; OT, occupational therapist; PERK, Providing Effective Resources and Knowledge; PHC, primary health care; SW, social worker; TCI, Team Climate Inventory; UK, United Kingdom.

Studies ranged considerably regarding their degree of procedural rigor. Quality assessment scores ranged from 16 to 34 out of 40 possible points on the CCAT, with a mean score of 26. Four studies were of high quality (Doekhie et al., 2017; Gaboury et al., 2009; Perreault et al., 2014; Pullon et al., 2016), six of moderate (Brown et al., 2015; Dufour et al., 2014; Grace & Higgs, 2010; Gray & Orrock, 2014; Perreault et al., 2016; Sargeant et al., 2008) and two of low quality (Myburgh et al., 2014; Perreault et al., 2018). Most studies reported using qualitative methods (Dufour et al., 2014; Gaboury et al., 2009; Grace & Higgs, 2010; Gray & Orrock, 2014; Perreault et al., 2014; Pullon et al., 2016; Sargeant et al., 2008), while three reported mixed methods (Brown et al., 2015; Doekhie et al., 2017; Myburgh et al., 2014) and two reporting using quantitative methods (Perreault et al., 2016, 2018). Among the qualitative studies, few addressed the researchers' influence on the study, many did not report sampling until data saturation was achieved and only one study performed member checking to ensure that responses collected from participants were accurate and credible. Among the mixed methods studies, one paper did not provide a rationale for a mixed method design nor mention how the qualitative and quantitative data were meaningfully incorporated to explore the research questions. Among the quantitative studies, both reported an acceptable response rate, but for one study the representativeness of the sample population was unclear, and the validity of the data collection tool was not adequately described.

Thematic analysis identified five themes relating to interprofessional collaboration in primary health care, as perceived by allied health professionals: (1) shared philosophy; (2) communication and clinical interaction; (3) physical environment; (4) power and hierarchy and (5) financial considerations.

Shared philosophy

A common goal to respond to primary health care needs surfaced as a factor promoting interprofessional collaboration. A mutual understanding regarding primary health care principles provided an important basis for facilitating interprofessional collaboration in ten of the reviewed studies (Brown et al., 2015; Doekhie et al., 2017; Dufour et al., 2014; Gaboury et al., 2009; Grace & Higgs, 2010; Gray & Orrock, 2014; Perreault et al., 2014, 2016; Pullon et al., 2016; Sargeant et al., 2008). Allied health professionals in several studies shared the belief that primary health care settings are dynamic and require commitment and work to develop and maintain (Doekhie et al., 2017; Dufour et al., 2014; Gaboury et al., 2009; Gray & Orrock, 2014; Pullon et al., 2016; Sargeant et al., 2008). Indeed, interprofessional collaboration was perceived by many allied health professionals as the result of active, ongoing effort (Myburgh et al., 2014). One study emphasized that allied health professionals should not work in isolation and only focus on a patient's needs within their own field of expertise, rather they should collectively attempt to address the patient's needs by adopting a collaborative approach (Doekhie et al., 2017). Four of the studies identified that allied health professionals worked in facilities where there was a clear organizational vision to engage in interprofessional collaboration (Doekhie et al., 2017; Gray & Orrock, 2014; Perreault et al., 2014).

Communication and clinical interaction

Effective communication and meaningful interprofessional interactions help to foster collaborative practice in primary health care. Opportunities for informal communication was highlighted as an important factor for reinforcing interprofessional relationships in half of the reviewed studies (Brown et al., 2015; Doekhie et al., 2017; Gray & Orrock, 2014; Perreault et al., 2016; Pullon et al., 2016; Sargeant et al., 2008). Allied health professionals considered indirect rather than direct interactions as the primary means of interaction with other health practitioners, for example, using patients to deliver correspondence, and interactions were often unplanned rather than planned (Perreault et al., 2014, 2016). While participants in one study were advocates for regular formal meetings to discuss patient cases (Sargeant et al., 2008), two other studies found electronic communication to be preferred over formal meetings due to convenience and caseload demands (Doekhie et al., 2017; Perreault et al., 2016).

Three studies showed that the mainstay of physiotherapists' interprofessional interactions were with general practitioners (Perreault et al., 2014, 2016, 2018). In addition, many physiotherapists reported frequent interactions with occupational therapists, less frequent interactions with osteopaths, and little or no contact with psychologists (Perreault et al., 2014). Myburgh et al. (2014) highlighted that only 11% of Danish chiropractors interacted with general practitioners in their clinical practice, while a larger proportion collaborated with massage therapists (82%), physiotherapists (58%) and acupuncturists (37%). However, within this study it was found that these professional groups were often employees within chiropractic clinics.

Knowing health practitioners from other professions personally was viewed as positively influencing interprofessional collaboration by increasing levels of familiarity and trust (Doekhie et al., 2017; Perreault et al., 2014, 2018). Sharing a common language and treatment approach greatly influenced the frequency and quality of communication in four studies (Gaboury et al., 2009; Grace & Higgs, 2010; Perreault et al., 2014; Sargeant et al., 2008). Frequency and content of communication was shown to be related to the degree of task interdependency between health practitioners and the patient's medical condition (Doekhie et al., 2017). When patient complexity and acuity was low, communication was less structural and more incidental (Doekhie et al., 2017). However, Doekhie et al. (2017) asserted that when allied health professionals shared minimal task interdependency, the value of collaboration was difficult to see, and therefore less likely to occur.

Physical environment

Allied health professionals' workplace location and service delivery model emerged as a dominant theme influencing interprofessional collaboration in primary health care.

Half of the reviewed studies identified physical proximity and space allocation as a factor that facilitated or limited interprofessional collaboration (Brown et al., 2015; Doekhie et al., 2017; Gray & Orrock, 2014; **Perreault et al.,** 2014, 2018; Pullon et al., 2016). For allied health professionals working in a monodisciplinary practice, the concept of collaboration usually applied to practitioners from the same health profession (Doekhie et al., 2017; Perreault et al., 2014, 2018). Another study showed that although chiropractors in monodisciplinary facilities acknowledged the importance of interprofessional collaboration, 69% did not consider their current clinical practice to be collaborative in nature (Myburgh et al., 2014). Two studies found that allied health professionals who worked in small, long-established multidisciplinary primary health care settings had the advantage of sharing a high degree of trust with health practitioners from various professional backgrounds (Pullon et al., 2016; Sargeant et al., 2008). Multidisciplinary team structures created a supportive environment where complex, shared decision-making could be successfully achieved and maintained (Sargeant et al., 2008). Co-location of health services was perceived to allow patients to get the most from multiple health practitioners in one convenient place (Gray & Orrock, 2014). In co-located settings, allied health professionals viewed referral processes as being more efficient because feedback from other health practitioners within the nearby facilities generally occurred much faster (Doekhie et al., 2017; Gaboury et al., 2009).

Power and hierarchy

Power imbalances and conflicts can impede interprofessional collaboration in primary health care. Two studies revealed that when autonomy was low, allied health professionals did not feel like their knowledge, skills and expertise was utilized to the best of their ability (Grace & Higgs, 2010; Gray & Orrock, 2014). Some allied health professionals found this practice restrictive, while others appreciated a directive for guided treatment (Grace & Higgs, 2010). Two reviewed studies found attendance at formal meetings as a key responsibility to ensure the effectiveness of the collaborative process, holding potential for roles to be clarified and conflicts to be resolved (Brown et al., 2015; Sargeant et al., 2008). However, for allied health professionals working in co-located primary health care settings, many stated that significant autonomy was given to them and conflict was largely non-existent (Grace & Higgs, 2010; Pullon et al., 2016). These facilities supported a non-hierarchal interprofessional referral network, where all health practitioners were considered equally important (Gray & Orrock, 2014).

Financial considerations

Monetary aspects of primary health care service provision have capacity to enable or hinder interprofessional collaboration. Financial factors influencing interprofessional collaboration largely applied to private primary health care facilities (Gaboury et al., 2009; Perreault et al., 2014, 2018; Pullon et al., 2016), however public sector funding issues were also reported (Dufour et al., 2014; Pullon et al., 2016). Within the private practice setting, a patient's financial status was seen to impact on referrals to other health practitioners (Perreault et al., 2014, 2018). When a patient's ability to pay for treatment was perceived to be limited, some

allied health professionals refrained from referring to another health practitioner, even if the referral was considered important (Perreault et al., 2014). One reviewed study revealed that referrals to health practitioners employed at a different organization were approached with caution (Perreault et al., 2014). For example, a physiotherapist might refrain from referring a patient to an occupational therapist at another organization if physiotherapy services were also available within the same organization. This was viewed as a considerable threat to business that could lead to a potential loss of clientele (Perreault et al., 2014).

Discussion

This is the first methodologically inclusive literature review undertaken to explore allied health professionals' perceptions of interprofessional collaboration in primary health care. The analysis of included studies revealed that shared philosophy, communication and clinical interaction, the physical environment, power and hierarchy, and financial considerations were prominent themes when examining interprofessional collaboration from the perspective of allied health professionals in primary health care.

Opportunity for shared, frequent brief informal communication appeared to be essential for interprofessional collaboration in primary health care to occur. However, interprofessional collaboration within private primary health care facilities was perceived to be indirect and mostly limited to referrals to health practitioners from other professions. Therefore, private sector allied health professionals' perceptions regarding collaborative practice do not match often-found definitions of interprofessional collaboration that typically involve formal meetings to discuss specific patient cases (Reeves et al., 2010). This highlights the need to investigate the factors influencing interprofessional collaboration in primary health care settings where formal meetings are less likely to occur, such as monodisciplinary private practice facilities (Perreault et al., 2014).

This review demonstrates the importance of task interdependency in primary health care. The findings suggest that the extent to which allied health professionals collaborated with other health practitioners was related to task interdependency. Wageman (1995) describes this concept as the degree to which a task requires collaborative action through the sharing of knowledge and resources. When task interdependency was minimal, the perceived need for allied health professionals to communicate and collaborate with other health practitioners was low. In some primary health care settings, this may be because certain influences are more significant than others, leading to different manifestations of role distribution and task interdependency between health practitioners (MacNaughton et al., 2013). Most of the reviewed studies included allied health professionals who were employed in multidisciplinary practice facilities, however little information was provided regarding task interdependency for those practising in the absence of formalized team structures. Understanding how task interdependency is perceived by allied health professionals in various primary health care settings, including monodisciplinary clinics and co-located health services, suggests an area for future study.

Many allied health professionals in primary health care perceived themselves as members of a non-hierarchal interprofessional network, practising with considerable autonomy. Within these networks, it would appear that when defined roles and professional respect and trust are present, shared leadership can exist. This professional respect among health practitioners in primary health care supports the referral of patients and enhances the collaborative experience for all involved. However, dependent on a patient's unique health care needs, interprofessional network membership will inevitably vary (D'Amour et al., 2008). Establishing who the integral members within an interprofessional network are will enable allied health professionals to develop greater levels of trust and respect for other health practitioners. These professional virtues will strengthen interprofessional interactions and communication between allied health professionals and other health practitioners in the primary health care setting.

The physical environment was found to play an important role in determining the extent of interprofessional collaboration for allied health professionals in primary health care. This review argues that allied health professionals working in close proximity to health practitioners from different professions have more regular interprofessional interactions compared to those who are geographically separated. Allied health professionals widely acknowledged the importance of interprofessional collaboration in primary health care, however the majority of participants in one study who worked in monodisciplinary facilities were not engaged in collaborative practice (Myburgh et al., 2014). Co-location of multiple primary health care services within the same physical space has demonstrated the potential to increase the frequency of informal communication patterns between health practitioners, while supporting the shift away from traditional monodisciplinary, or sole practitioner, service delivery models (Bonciani et al., 2018). A recent study illustrated that interprofessional collaboration between general practitioners and psychologists may not have occurred without the provision and assistance of organizational structure from the onset (Farmanova et al., 2017). However, co-location of multiple health services is unlikely to facilitate interprofessional collaboration on its own, and it is perhaps a misguided assumption that health practitioners, including allied health professionals, already possess the necessary skills for collaborative practice in primary health care (Szafran et al., 2018).

Implications for interprofessional practice

Findings from this review have the potential to inform changes in practice in primary health care that could improve the nature and quality of interprofessional interactions between allied health professionals and other health practitioners from a range of professional backgrounds. This review highlights the significance of personally knowing health practitioners from different professions in order to create primary health care settings that are conducive to interprofessional interactions. Therefore, providing occasions for all health practitioners involved in an individual's care to interact in social contexts could be beneficial. By participating in these informal exchanges, health practitioners can gain more

knowledge of other professions' roles and responsibilities and build on their mutual levels of respect, trust and understanding (Doekhie et al., 2017). Moreover, co-location of multiple primary health care services within the same physical space appears to positively influence allied health professionals' interprofessional interactions. Encouraging the close physical proximity of allied health professionals and health practitioners from different professions could lead to the identification of preferred organizational models in primary health care (Perreault et al., 2014).

Implications for interprofessional education

As primary health care continues to develop, and health practitioners' scopes of practice expand and evolve, allied health professionals may benefit from ongoing training. Educational strategies in primary health care should deliver specific information related to interprofessional collaboration in order to optimize the quality of relationships between allied health professionals and health practitioners from different professional backgrounds. Training innovations in primary health care could offer opportunities for allied health professionals' scopes of practice to be clarified, and their roles and responsibilities to be asserted, subsequently stimulating appropriate patient referrals. Additionally, findings from this review may be used by tertiary institutions to inform curriculum development as it relates to interprofessional collaboration in primary health care. Such preparation and training at entry-level will foster a collaborative clinical environment for allied health graduates to embrace upon entering the health workforce.

Implications for interprofessional research

Allied health professionals are often reported collectively in the literature, as was found in a number of included studies in this review. Consequently, there is a paucity of research concerning individual allied health professions in primary health care. Transferability across allied health professions in primary health care should not be assumed, therefore future research that isolates data to the specific professions is recommended. Studies that included patients as participants were excluded from the review, omitting an important voice in relation to interprofessional collaboration. At present, research suggests that patients lack opportunities to provide direct feedback concerning their service needs and preferences in primary health care (Soklaridis et al., 2009). While it was beyond the objective of this review, an in-depth understanding of the patient perspective is required to improve the overall quality of collaborative processes in primary health care. Furthermore, it remains largely unknown how privately practising allied health professionals' experiences of interprofessional collaboration differ from those employed in primary health care settings within the public health sector. Research is indicated to explore allied health professionals' self-reported perceptions regarding interprofessional collaboration in private practice, and to document the nature of interprofessional interactions that occur within these facilities.

Limitations

There are several limitations of this integrative review. Firstly, the review is limited by the quality of included studies. The CCAT scores indicate that the reviewed studies were of moderate methodological quality, with the average score being 65%. The heterogenous quality and design of the included studies reduces the strength and validity of the conclusions drawn in this review. Next, caution must be applied when interpreting the findings of this review, as some studies did not isolate data to allied health professions. While every attempt was made to only report findings related to allied health professionals, it may be possible that some findings incorporate health practitioners from various other professions. To minimize this, two independent reviewers appraised the articles and discussed the findings to reach a consensus that the themes adequately reflected the experiences of allied health professionals. Additionally, eleven of the reviewed studies relied entirely on self-report to examine interprofessional collaboration in primary health care. Consequently, allied health professionals' perceptions may be predisposed to elements of personal bias. To overcome the biases and shortcomings apparent in self-reported accounts, direct observational methods have been suggested as more appropriate for understanding complex and difficult to measure phenomena, including interprofessional collaboration (Morgan et al., 2015). Furthermore, the literature on interprofessional collaboration is difficult to retrieve given there are no words both sensitive and specific to the subject (Supper et al., 2015). Although this review was detailed, it was not exhaustive, as some papers outside the search strategy may have been omitted. However, the systematic search, developed in conjunction with a professional librarian and combined with a manual search to identify all essential literature related to the topic, was a strength of this review.

Conclusion

This integrative review has identified diverse key elements related to interprofessional collaboration in primary health care as perceived by allied health professionals. Future research should employ direct observational methods to investigate whether allied health professionals' self-reported perceptions of interprofessional collaboration align with their actual interactions in the primary health care setting. The results of such research may guide the development of effective interventions aimed at optimizing interprofessional collaboration between allied health professionals working in primary health care and other health practitioners.

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Declaration of Interest

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Authors' contributions

JS led the study design, data collection, analysis and interpretation, and drafted the manuscript. AJ significantly contributed to study design, data collection, and data analysis and interpretation. CJ and KF participated in study design. All authors contributed to manuscript preparation and approved the final manuscript.

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Appendix 2: Peer-reviewed publication – 'Development of a survey instrument to explore the characteristics of Australian private physiotherapy practitioners' interprofessional interactions

Seaton, J. A., Jones, A., Johnston, C. L., & Francis, K. (2020b). Development of a survey instrument to explore the characteristics of Australian physiotherapy private practitioners' interprofessional interactions. *The Internet Journal of Allied Health Sciences and Practice, 18*(4), 2. https://doi.org/10.46743/1540-580X/2020.1919

Abstract

Background: Interprofessional collaboration is a complex process defined by the relationships and interactions between health practitioners from diverse professional backgrounds. Although the benefits of a collaborative health workforce are widely acknowledged, it is currently poorly understood to what extent private physiotherapy practitioners engage in interprofessional collaboration as a part of their clinical practice, and whether they consider to be adequately trained in this area. Information regarding the frequency, modes of communication, and perceived level of satisfaction associated with private physiotherapy practitioners' interprofessional interactions is also limited. **Purpose:** The aim of this paper is to describe the development of a survey instrument that can be used to explore the characteristics of Australian private physiotherapy practitioners' interprofessional interactions. **Methods:** A multiphase process was used to develop the survey instrument. The research team conducted a literature search which resulted in the generation of 34 individual survey items. After the initial pool of survey items was developed, three experienced physiotherapists were invited to review the items. The draft survey instrument was then subject to online testing with private physiotherapy practitioners to evaluate the utility of the instrument. **Results:** All three physiotherapists invited to review the initial pool of survey items provided written feedback to the research team. Following revision, five private physiotherapy practitioners participated in pilot testing the survey instrument. Pilot testing revealed that approximately 10 minutes was required to complete the online survey. **Conclusions:** The final survey instrument has 29 questions in six sections with categorical, Likert and free text response options and can be used to explore the characteristics of Australian private physiotherapy practitioners' interprofessional interactions. Information obtained from future research projects utilising this survey may guide the development of effective interventions aimed at enhancing the nature and quality of clinical interactions between private physiotherapy practitioners and other health practitioners working in Australia.

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Development of a Survey Instrument to Explore to Characteristics of Australia Private Physiotherapy Practitioners' Interprofessional Interactions

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ABSTRACT

Background: Interprofessional collaboration is a complex process defined by the relationships and interactions between health practitioners from diverse professional backgrounds. Although the benefits of a collaborative health workforce are widely acknowledged, it is currently poorly understood to what extent private physiotherapy practitioners engage in interprofessional collaboration as a part of their clinical practice, and whether they consider to be adequately trained in this area. Information regarding the frequency, modes of communication, and perceived level of satisfaction associated with private physiotherapy practitioners' interprofessional interactions is also limited. **Purpose**: The aim of this paper is to describe the development of a survey instrument that can be used to explore the characteristics of Australian private physiotherapy practitioners' interprofessional interactions. **Methods**: A multiphase process was used to develop the survey instrument. The research team conducted a literature search which resulted in the generation of 34 individual survey items. After the initial pool of survey items was developed, three experienced physiotherapists were invited to review the items. The draft survey instrument was then subject to online testing with private physiotherapy practitioners to evaluate the utility of the instrument. **Results**: All three physiotherapists invited to review the initial pool of survey items provided written feedback to the research team. Following revision, five private physiotherapy practitioners participated in pilot testing the survey instrument. Pilot testing revealed that approximately 10 minutes was required to complete the online survey. **Conclusions**: The final survey instrument has 29 questions in six sections with categorical, Likert and free text response options and can be used to explore the characteristics of Australian private physiotherapy practitioners' interprofessional interactions. Information obtained from future research projects utilising this survey may guide the development of effective interventions aimed at enhancing the nature and quality of clinical interactions between private physiotherapy practitioners and other health practitioners working in Australia.

Keywords: Australia, interprofessional collaboration, physical therapy, primary health care, private practice, questionnaire.

INTRODUCTION

Physiotherapy represents one of the largest allied health professions in Australia, accounting for more than 30,000 qualified practitioners.[1] Physiotherapists are responsible for the provision of services to people across the lifespan in the management of various health issues.[2] In Australia, physiotherapists are employed in both the public and private sectors and in metropolitan, regional, rural, and remote locations.[3] Most physiotherapists work primarily as clinicians and practise in a range of settings including hospitals, private practice, community and rehabilitation centres, residential aged care, and sporting organisations.[3] The remainder of physiotherapists assume roles in areas such as management, research, and tertiary education.[3-4]

There has been a significant rise in the proportion of physiotherapists working in private practice in recent decades. Physiotherapy private practices are described as professional businesses or for-profit organisations that are not funded through government departments.[5] Private physiotherapy services are predominately funded by the individual in a fee-for-service environment, with rebates or fee supports available through various insurance schemes.[6] Health workforce data indicates that less than one third of physiotherapists worked in the private sector in 1975, while it was reported that seventy per cent of Australian physiotherapists were employed in private practice in 2018.[1,4] This changing demographic of primary workplace may be indicative of the increasing demand for access to physiotherapy in the community.[7]

Physiotherapists, including those employed in private practice, are encouraged to collaborate with health practitioners from various professional backgrounds to enhance the quality of patient care.[8] This process of interprofessional collaboration refers to the interactions and relationships between and among health practitioners from different professions.[9] The features of successful collaborative practice include sharing a holistic view on patient care, working together to achieve common goals and mutual respect, trust, and understanding.[10] Interprofessional collaboration facilitates the provision of cost-effective health care and contributes to superior patient outcomes and enhanced patient and practitioner satisfaction.[11] Additionally, a collaborative health workforce has been shown to be more responsive and efficient and is linked to improved staff retention in rural and remote areas.[11-12]

Interprofessional collaboration is best observed when formal team structures exist and opportunity for frequent, informal communication is high.[13] However, occasions for physiotherapists to interact with health practitioners from other professions are potentially limited in physiotherapy private practice by the dominant service delivery model which is commonly a small monodisciplinary clinic.[3] According to a recent study, private physiotherapy practitioners in Canada perceived interprofessional collaboration to be indirect and mostly limited to referrals to and from other health practitioners.[14] As such, the nature and quality of private physiotherapy practitioners' interprofessional interactions may not align with often-found definitions of interprofessional collaboration that typically involve formal meetings to discuss specific patient cases.[15] In regional and rural areas, geographic isolation, workforce shortages and service centralisation may also present as additional barriers to effective interprofessional collaboration.[16]

The experiences of health practitioners regarding interprofessional collaboration in primary health care has attracted previous attention in the literature; however, most of this research concerns the professions of medicine and nursing.[13,17] Despite the documented benefits of interprofessional collaboration, it remains a poorly understood process in some primary health care settings, such as physiotherapy private practice. It is unclear to what extent private physiotherapy practitioners in Australia engage in interprofessional collaboration as a part of their clinical practice, and if they perceive to be adequately trained in this area. Furthermore, there is little information regarding private physiotherapy practitioners' clinical interactions with health practitioners from different professions, specifically the frequency, modes of communication and perceived level of satisfaction associated with these interactions.

In order to guide the development of effective interventions aimed at promoting and improving interprofessional collaboration in physiotherapy private practice, it is necessary to gain a current understanding of private physiotherapy practitioners' interactions and relationships with health practitioners from various professional backgrounds. At present, no published survey instrument exists to obtain information regarding interprofessional collaborative practice from the perspective of health practitioners, including physiotherapists, working in clinical settings that do not necessarily adhere to formal team-based processes. The aim of this study was to develop a survey instrument that can be used to explore the characteristics of Australian private physiotherapy practitioners' interprofessional interactions.

METHODS

Development of the survey instrument involved a multiphase process (Figure 1): (i) literature search; (ii) survey item development; (iii) review and revision of survey items; and (iv) pilot testing with a sample of physiotherapists employed in

private practice. Ethical approval was received from the James Cook University Human Research Ethics Committee (Reference no. H7639).

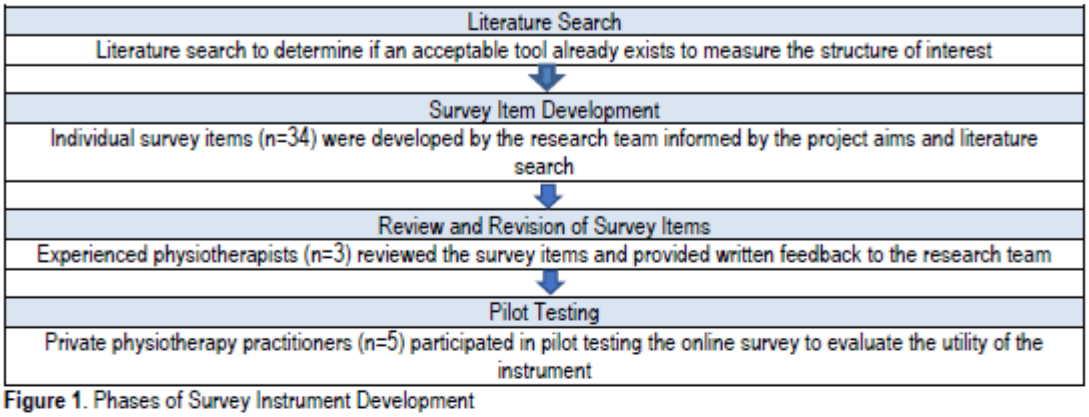

Figure 1. Phases of Survey Instrument Development

Literature Search and Survey Item Development

The multiprofessional research team, with professional backgrounds in physiotherapy and nursing, conducted an extensive literature search to identify existing surveys or questionnaires that could be used as a frame of reference for constructing a new survey instrument. Most of the measures of interprofessional interactions identified focused on the professions of medicine and nursing, and many tools were designed for data collection within specific health care settings.[18-21] The search found only one published instrument used to collect data pertaining to interprofessional interactions specifically for the physiotherapy profession; however, the content lacked relevance to the physiotherapy private practice workforce in Australia as a result of differences in service delivery.[22]

From the literature search, and further informed by the project aims and an integrative literature review conducted by the research team, a list was created containing factors that were previously cited as important when examining interprofessional interactions in other clinical environments.[23-25] The list was then adapted to account for the proportion of private physiotherapy practitioners in Australia who may not participate in formal multidisciplinary teamwork but could still have frequent interactions with health practitioners from other professions. This process resulted in the generation of 34 individual survey items that the research team deemed adequate to represent the construct of interest.

Review and Revision of Initial Survey Items

After the initial pool of survey items was developed, three experienced physiotherapists were selected to review the items. The physiotherapists were known to the research team and were chosen due to their past clinical experience of greater than ten years in physiotherapy private practice. The selected physiotherapists reviewed the individual survey items to ensure they were accurate, free of item construction flaws (vulnerabilities that may make survey items subject to misinterpretation), and grammatically correct. They were also asked to identify missing elements which may influence interprofessional interactions for private physiotherapy practitioners, discern whether any items were redundant, and to nominate items for deletion. The physiotherapists' responses were reviewed, and consensus of all members of the research team was required prior to excluding or amending any individual survey item.

Survey Instrument Pilot Testing

The draft survey instrument was subject to online testing to evaluate the utility of the instrument. The objective of this evaluation was to ascertain whether the survey instrument functioned as intended and could be completed in a time efficient manner. A sample of physiotherapists (n = 37) employed in physiotherapy private practice facilities were invited to participate in pilot testing the online survey instrument. Purposeful sampling was used to select physiotherapy private practice facilities from one region of New South Wales, Australia. The contact details of physiotherapists were obtained via the publicly accessible 'Find a Physio' search tool (https://choose.physio/findaphysio, accessed 24 July 2019). The search tool is an index of Australian physiotherapy private practice facilities maintained by the Australian Physiotherapy Association. One physiotherapist at each private practice facility was sent an invitation to participate in pilot testing of the anonymous survey instrument. Each email invitation contained a participant information statement and a hyperlink to the

survey instrument, hosted online using Qualtrics™. A reminder email was sent to all participants two and four weeks following the initial invite. Completion and submission of the online survey constituted informed participant consent.

RESULTS

Review and Revision of Initial Survey Items

All three experienced physiotherapists invited to review the initial pool of survey items provided written feedback to the research team. The recommendations provided mostly related to addition and deletion of individual survey items, and minor suggestions were given to improve the clarity of the wording. One physiotherapist questioned the appropriateness of the term "collaboration" in survey items asking participants about their day-to-day clinical interactions without reference to the relationships that they share with health practitioners from other professions, and how these are formed and maintained over time. Instead, use of the term "interprofessional interactions" was suggested as an alternative and changes were made to the relevant survey items accordingly. Another participant recommended revising the sequence of individual survey items to ensure the survey structure was logical.

Based on the physiotherapists' feedback, two additional survey items were developed, and seven individual survey items were removed. One survey item was added to elicit further information about the clientele private physiotherapy practitioners provide services to, while another question was introduced to ask participants to rate their perceived level of satisfaction regarding their previous interprofessional interactions. A collective decision was made by the research team to delete survey items that the physiotherapists deemed to be redundant and not adequately assessing the construct of interest.

The revised draft survey instrument consisted of 29 questions in six sections: participant characteristics, workplace information, previous training regarding interprofessional collaboration, clinical interactions with other health practitioners, opinions towards interprofessional collaboration, and general comments. Survey item responses included a combination of closed categorical questions, Likert scale items, and free text response options.

Survey Instrument Pilot Testing

Five physiotherapists participated in pilot testing the survey instrument, with an overall response rate of 14%. The mean age of participants was 51 years (standard deviation 11 years) and all participants reported that they had more than 10 years of clinical experience working as a physiotherapist in private practice. Every participant indicated that they were the principal physiotherapist at their respective private practice facilities. All participants stated that they had previously been employed as a physiotherapist in other clinical settings, mainly public hospitals.

Pilot testing indicated that approximately 10 minutes was required to complete the survey, demonstrating that the survey length was appropriate (range 6 minutes, 39 seconds – 12 minutes, 25 seconds). Review of participant responses revealed that the survey instrument was functioning as intended in its online format with respect to access via the survey hyperlink, data format rules and "skip logic" functions. Across all questions requiring a closed categorical response, only one question yielded missing data (question 12, asking participants to indicate how often they would treat people across a range of physiotherapy clinical areas within their private practice caseload). Written responses were provided by the majority of participants (n = 4, 80%) for each question requiring a free text response.

DISCUSSION

To the authors' knowledge, this is the first published survey instrument developed to allow for the collection of data regarding the characteristics of interprofessional interactions involving private physiotherapy practitioners in Australia. The survey instrument was developed with input from a multiprofessional research team based on gaps in current literature and utilising published recommendations for survey instrument development.[25] The project occurred in several well-defined stages including a literature search, survey item development, review and revision of survey items and pilot testing with a sample of private physiotherapy practitioners prior to the formulation of a final survey instrument. Individual survey items and corresponding response options were extensively reviewed and revised to minimise measurement error, with careful consideration given to the overall survey length and structure to enhance utility. The final survey instrument, consisting of 29 questions in six sections, is user-friendly, easily comprehendible, and of appropriate length and content for use with private physiotherapy practitioners in Australia (Appendix 1).

Implications

Although the survey instrument has been developed for dissemination amongst private physiotherapy practitioners in Australia, globally, interprofessional collaboration is an expected standard of care for all health practitioners.[8-9] Therefore, the results of this research may be of interest to private physiotherapy practitioners internationally, as well as health

practitioners from different professions who work in similar clinical settings with similar clientele. This survey instrument could be adapted in the future to explore the characteristics of interprofessional interactions in various geographical locations and involving health practitioners from diverse professional backgrounds. Collecting information regarding the characteristics of interprofessional interactions from different health professions across a range of geographical contexts would enable comparison of documented clinical interactions and may offer opportunities for scopes of practice to be clarified and roles and responsibilities to be asserted. Furthermore, this acquired knowledge could assist in the development of training strategies and practical recommendations to enhance the nature and quality of health practitioners' interprofessional interactions.

Limitations

The main limitation of this study was that a small sample of private physiotherapy practitioners from only one Australian region were invited to pilot test the survey instrument. The physiotherapists involved in pilot testing the survey instrument had a range of clinical experience, were working in a variety of physiotherapy private practice settings and their characteristics (including gender, physiotherapy qualification, location and primary scope of practice) are comparable to publicly available data on the Australian physiotherapy workforce.[3] Therefore, they would appear to be generally representative of private physiotherapy practitioners currently working in Australia. Given the small sample size, no statistical or cognitive pre-testing measures could be applied to the survey instrument to assess the validity or reliability of the tool. Despite this, the survey instrument was deemed to have adequate depth and detail to represent the construct of interest on review and appears suitable for use in a larger sample. An additional limitation of the study may be a response bias due to surveys only being completed by one physiotherapist at each private practice facility. However, many of the questions required factual answers rather than personal opinion; therefore, it is likely that responses among physiotherapists working at the same facility would generally be consistent.

CONCLUSION

The outcome of this study is the development of a survey instrument with input from a multiprofessional research team and following detailed review by a range of physiotherapists. The survey instrument can be used to explore the characteristics of Australian private physiotherapy practitioners' interprofessional interactions, including the frequency, modes of communication and level of satisfaction associated with such interactions. Information obtained from future research projects utilising this survey may guide the development of effective interventions aimed at enhancing the nature and quality of clinical interactions between private physiotherapy practitioners and other health professionals in Australia.

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Appendix 3: Peer-reviewed publication – 'The characteristics of Queensland private physiotherapy practitioners' interprofessional interactions: A cross-sectional survey study'

Seaton, J. A., Jones, A. L., Johnston, C. L., & Francis, K. L. (2020a). The characteristics of Queensland private physiotherapy practitioners' interprofessional interactions: A cross-sectional survey study. *Australian Journal of Primary Health*, *26*(6), 500–506. https://doi.org/10.1071/PY20148

Abstract

Effective interprofessional collaboration (IPC) contributes to superior patient outcomes, facilitates cost-efficient health care, and increases patient and practitioner satisfaction. However, there is concern that IPC may be difficult to implement in clinical settings that do not conform to formal team-based processes, such as mono-professional physiotherapy private practice facilities. The aim of this study was to describe the characteristics of private physiotherapy practitioners' interprofessional interactions, including their experiences and perceptions regarding IPC. A custom developed cross-sectional online survey instrument was used to collect data from physiotherapists employed in private practice facilities in Queensland, Australia. In all, 49 (20% response rate) physiotherapists completed the survey. Only a small proportion (14%) indicated that their interprofessional interactions were a daily occurrence, and less than one-third of all respondents (31%) participated in formal, multi-professional face-to-face planned meetings. Most participants (76%) reported a moderate-to-high level of satisfaction regarding their interprofessional interactions. Despite low self-reported levels of interprofessional activity and other data indicating that IPC is necessary for holistic patient care, this study shows that physiotherapists were predominately satisfied when interacting with health practitioners from various professional backgrounds. Further research is required to inform the implementation of robust strategies that will support sustainable models of IPC in physiotherapy private practice.

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Research

The characteristics of Queensland private physiotherapy practitioners' interprofessional interactions: a cross-sectional survey study

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Abstract. Effective interprofessional collaboration (IPC) contributes to superior patient outcomes, facilitates cost-efficient health care, and increases patient and practitioner satisfaction. However, there is concern that IPC may be difficult to implement in clinical settings that do not conform to formal team-based processes, such as mono-professional physiotherapy private practice facilities. The aim of this study was to describe the characteristics of private physiotherapy practitioners' interprofessional interactions, including their experiences and perceptions regarding IPC. A custom developed cross-sectional online survey instrument was used to collect data from physiotherapists employed in private practice facilities in Queensland, Australia. In all, 49 (20% response rate) physiotherapists completed the survey. Only a small proportion (14%) indicated that their interprofessional interactions were a daily occurrence, and less than one-third of all respondents (31%) participated in formal, multi-professional face-to-face planned meetings. Most participants (76%) reported a moderate-to-high level of satisfaction regarding their interprofessional interactions. Despite low self-reported levels of interprofessional activity and other data indicating that IPC is necessary for holistic patient care, this study shows that physiotherapists were predominately satisfied when interacting with health practitioners from various professional backgrounds. Further research is required to inform the implementation of robust strategies that will support sustainable models of IPC in physiotherapy private practice.

Keywords: interprofessional collaboration, physical therapy, primary health care, private practice.

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Introduction

Interprofessional collaboration (IPC) refers to the interactions and relationships between, and among, health practitioners from different professional backgrounds (World Health Organization (WHO) 2010). There is strong evidence that effective IPC contributes to superior patient outcomes, facilitates cost-efficient health care, and increases patient and practitioner satisfaction (Reeves *et al.* 2017). Additionally, IPC may address the difficulties associated with recruitment and retention of rural health practitioners by alleviating professional isolation (Brems *et al.* 2006; Parker *et al.* 2013). There are numerous challenges, however, to achieving effective IPC in clinical practice. Communication problems, power imbalances and a lack of awareness of other health professions' expertise have the potential to hinder IPC (Seaton *et al.* 2020*a*). Team functions, such as sharing a holistic view of patient care, working towards common goals and mutual trust, are symbolic of a collaborative health workforce and may overcome barriers to interprofessional practice (D'Amour *et al.* 2005).

Interprofessional collaboration is best observed when formal team structures exist and the opportunity for frequent, informal communication is high (Morgan *et al.* 2015). Consequently, there is concern that IPC may be difficult to implement in clinical settings that do not conform to formal team-based processes (Oandasan *et al.* 2009; Perreault *et al.* 2014*a*; Szafran *et al.* 2019). In physiotherapy private practice, patient care is delivered through a variety of practice models (Perreault *et al.* 2014*b*). These range from the sole, or mono-professional

practitioner, model to a multi-professional team model of care. In Australia, the small-scale, mono-professional clinic is the dominant service delivery model in physiotherapy private practice (Health Workforce Australia 2014). Due to this practice model, opportunities for physiotherapists to interact with health practitioners from different professions within these facilities may be limited. Private physiotherapy practitioners' knowledge, attitudes and opinions regarding what constitutes IPC may therefore not align with models of best practice that, for example, recommend regular multi-professional team meetings to discuss specific patient cases (D'Amour *et al*. 2008; Xyrichis and Lowton 2008; Reeves *et al*. 2010; Körner *et al*. 2016).

There has been a significant rise in the proportion of Australian physiotherapists working in private practice in recent decades (Engel *et al*. 2014). In 1975, less than one-third of all physiotherapists were estimated to work in the private sector (Anderson *et al*. 2005); however, by 2018 this had more than doubled, with private practitioners accounting for 70% of the total physiotherapy workforce in Australia (Australian Health Practitioner Regulation Agency (AHPRA) 2018). This changing demographic may reflect financial constraints on the public health system, as well as an increasing demand for access to physiotherapy in the community (Pretorius *et al*. 2016). Despite the growing number of Australian private physiotherapy practitioners and the expectation for all health professionals to work collaboratively (WHO 2010), IPC in the physiotherapy private practice setting remains poorly understood.

Most of the research regarding IPC in primary health care has emanated from the professions of medicine and nursing (Xyrichis and Lowton 2008; Schadewaldt *et al*. 2013; McInnes *et al*. 2015; Morgan *et al*. 2015). Subsequently, there is a paucity of information concerning other health professions, including physiotherapy. It is unclear as to what extent private physiotherapy practitioners engage in IPC as a part of their clinical practice and/or if they perceive themselves as adequately trained in this area. There is also minimal published information about private physiotherapy practitioners' day-to-day interactions with other health professionals, especially the frequency, modes of communication and level of satisfaction associated with these interactions.

Interprofessional collaboration is widely acknowledged to have positive effects on patient outcomes and the broader health system (Reeves *et al*. 2017). Despite the documented benefits, little is known about IPC from the perspective of physiotherapists, and models of interprofessional collaborative practice in the physiotherapy private sector are ill defined (Seaton *et al*. 2020*a*). Research investigating how IPC is influenced and operationalised for private physiotherapy practitioners working in isolation from other health professions, or clinical settings that do not conform to formal team-based structures is also scarce. To inform the development of robust strategies that will support sustainable models of IPC in physiotherapy private practice, a thorough understanding of physiotherapists' interactions and relationships with health practitioners from different professional backgrounds is necessary. The aim of this study was to describe the characteristics of Australian private physiotherapy practitioners' interprofessional interactions, including their experiences and perceptions regarding interprofessional collaboration.

Methods

Study design

This study was a cross-sectional survey design involving private physiotherapy practitioners in Queensland, Australia. Ethical approval for the study was granted by the James Cook University Human Research Ethics Committee (reference no. H7639).

Survey instrument

Data were collected using a survey instrument custom developed to document information regarding IPC from the perspective of Australian private physiotherapy practitioners. The survey instrument was developed with input from the multi-professional research team, based on gaps in available literature, and utilising published recommendations for survey item development and evaluation (Tsang *et al*. 2017; Seaton *et al*. 2020*b*). The survey consisted of 29 questions in closed categorical, Likert scale and free text response formats. Survey content was divided into six sections: (1) participant demographics; (2) workplace information; (3) previous training in IPC; (4) interprofessional interaction characteristics; (5) experiences and perceptions of IPC; (6) and general comments. The survey was administered online and hosted via Qualtrics (www.qualtrics.com).

Participants and recruitment

Participants were physiotherapists employed in private practice facilities within the Northern Queensland Primary Health Network (NQPHN) area. Geographically, the NQPHN region spans >510 000 km^2 and is home to almost 700 000 people (Northern Queensland Primary Health Network (NQPHN) 2019). The majority of the population are located within the regional centres of Cairns, Mackay and Townsville, but a significant amount of the population live in rural and remote areas (NQPHN 2019). To be eligible for inclusion, participants were required to be registered as a physiotherapist with the Australian Health Practitioner Regulation Agency. There were no exclusion criteria.

To identify participants, Australian postcodes representing every suburb within the NQPHN region were entered into a publicly accessible 'Find a Physio' search tool. This search tool is an index of physiotherapy private practice facilities in Australia maintained by the Australian Physiotherapy Association (https://choose.physio/findaphysio, accessed 15 May 2019). A list of private practice facilities was generated for each postcode searched and contact details of the private practices were recorded. Online business directories were also consulted to avoid accidental omission of eligible private practice facilities. Where possible, websites of identified private practices were checked to ensure contact information was current and relevant. This process resulted in the identification of 105 physiotherapy private practice facilities within the NQPHN region.

Data collection

Once eligible private practices had been identified, all physiotherapists at each facility were emailed an invitation to participate in the study. Invitations contained a participant information statement and hyperlink to the online survey. When

physiotherapists' email addresses were not known, an invitation to participate was sent to the practice manager or administrative personnel, who were asked to forward the email invitation to physiotherapists on behalf of the research team. To calculate a response rate, these personnel were also requested to inform the research team of the number of physiotherapists at their private practice facility who were emailed an invitation. In total, 243 private physiotherapy practitioners employed within the NQPHN region were invited to participate in the survey. A single reminder email was sent 3 weeks after the initial invitation. Completion and submission of the online survey constituted informed participant consent.

Data analysis

Data for the closed categorical and Likert scale questions were coded numerically and input into SPSS version 25.0 (IBM Corp., Armonk, NY, USA), whereas free text responses were extracted into a Microsoft® Excel spreadsheet (Microsoft Corp., Redmond, WA, USA). All closed categorical responses were analysed descriptively using frequencies and percentages. Responses to Likert questions whereby participants were asked to report the frequency of patient presentation for different physiotherapy clinical areas at their private practice facility, as well as their frequency of interaction with particular health professionals, were collapsed into two categories. All 'never' and 'rarely' response options were combined and relabelled 'less frequent', whereas all 'sometimes' and 'often' response options were combined and relabelled 'more frequent'. Responses to the open-ended questions were collated and thematic analysis was performed. The primary researcher (JS) read the information presented multiple times to make preliminary observations before initiating open coding of all the data. The entire research team then compared the codes to derived insights from the literature on IPC. Specific attention was paid to participants' perceived benefits of and barriers to IPC in physiotherapy private practice. Next, the codes obtained from the open coding process were categorised into subthemes, which were later regrouped into a final set of themes. To ensure reliability, the themes were discussed among all members of the research team until consensus was reached (Creswell and Plano Clark 2018).

Results

Participant demographics and workplace information

A total of 49 responses were received from the 243 physiotherapists invited to participate – a response rate of 20%. The mean age of survey participants was 36 years (range 22–60 years, standard deviation 10.58), and they obtained their entry-level physiotherapy qualification ~14 years prior (range 1–38 years ago, standard deviation 10.58). A majority of respondents (n = 36; 73%) reported that they had previously been employed as a physiotherapist in another clinical setting, including public hospitals (n = 24; 49%), private hospitals (n = 14; 29%) and community health centres (n = 12; 24%). The demographic data and professional characteristics of respondents are presented in Table 1.

For the purposes of this study, a mono-professional practice refers to a sole practitioner model of care or a facility only employing one professional group (for example, physiotherapists), whereas a multi-professional practice incorporates health practitioners from two or more professional groups. Co-location refers to health services that are situated in the same physical space (for example, an office, building or campus), although they are not necessarily fully integrated with one another. Over half of the respondents (n = 27; 55%) reported that their physiotherapy private practice setting was a mono-professional clinic, with 45% (n = 22) indicating that they worked in a multi-professional private practice. Less than half of participants (n = 18; 36%) reported that their private practice was co-located with at least one other health service. Many participants (n = 27; 55%) indicated that they were the principal physiotherapist at their private practice facility.

Respondent workplace information, including data regarding participants' reported frequency of patient presentation across different physiotherapy clinical areas, is provided in Table 2.

Table 1. Participant demographics and professional characteristics (n = 49)

Participant characteristics	n (%)
Sex	
Female	30 (61)
Male	19 (39)
Entry-level physiotherapy qualification	
Bachelor degree	35 (71)
Bachelor (Honours) degree	8 (17)
Graduate-entry Master's degree	6 (12)
Location of entry-level training	
Australia	40 (82)
Overseas[A]	9 (18)
Years of clinical physiotherapy experience	
<10 years	26 (53)
11–20 years	11 (22)
>20 years	12 (25)
Years of private practice experience	
<10 years	29 (59)
11–20 years	15 (31)
>20 years	5 (10)

[A]Overseas refers to Canada, New Zealand, The Netherlands and the UK.

Previous training in interprofessional collaboration

Most respondents (n = 34; 69%) reported having received some form of training regarding IPC in their entry-level physiotherapy qualification. A small proportion (n = 10; 20%) had subsequently participated in additional training. Entry-level training was delivered in the form of clinical placements (n = 31; 63%), lectures or seminars (n = 29; 59%), practicum or tutorials (n = 20; 41%), online learning modules (n = 9; 18%) and simulation-based learning environments (n = 8; 16%). Nearly half of all participants (n = 23; 47%) indicated that they required more training regarding IPC.

Interprofessional interactions characteristics

Information relating to the frequency, modes of communication and level of satisfaction associated with participants' interprofessional interactions is provided in Table 3.

Table 2. Participants' work type and place ($n = 49$)

Participant workplace information	n (%)
Type of private practice setting	
Sole mono-professional facility	18 (37)
Sole multi-professional facility	13 (27)
Co-located mono-professional facility	9 (18)
Co-located multi-professional facility	9 (18)
Clinical area of patient presentation[A]	
Cardiorespiratory	8 (16)
General rehabilitation	38 (78)
Musculoskeletal	48 (98)
Neurological	20 (41)
Occupational rehabilitation	26 (53)
Orthopaedics or trauma	39 (80)
Sports	40 (82)
Vestibular rehabilitation	15 (31)
Women's health	19 (39)
Classification of workplace location (MMM)[B]	
MMM 1	0 (0)
MMM 2	35 (72)
MMM 3	0 (0)
MMM 4	8 (16)
MMM 5	5 (10)
MMM 6	1 (2)
MMM 7	0 (0)

[A]Based on the recoded Likert response variable, 'more frequent'.
[B]MMM, the Modified Monash Model classification system that categorises different areas in Australia based on population and geographical location. It consists of seven categories, with MMM Category 1 representing metropolitan areas and MMM Category 7 representing very remote communities.

Table 3. Characteristics of respondents' interprofessional interactions ($n = 49$)

Interprofessional interaction characteristics	n (%)
Overall frequency	
Daily	14 (29)
More than once a week	19 (39)
Once a week	5 (10)
Less than once a week	11 (22)
Means of communication	
Email	44 (90)
Face-to-face planned meeting	15 (31)
Face-to-face unplanned meeting	22 (45)
Joint evaluation or intervention	6 (12)
Letter or form sent by fax or mail	37 (75)
Letter or form sent through patient	24 (49)
Telephone	39 (80)
Verbal message through patient	19 (39)
Videoconference	1 (2)
Overall level of satisfaction	
Very satisfied	12 (25)
Moderately satisfied	25 (51)
Slightly satisfied	10 (20)
Not at all satisfied	2 (4)

Participants were asked to indicate their frequency of interactions with various health professionals. Data pertaining to participants' 'more frequent' interprofessional interactions are presented in Table 4.

Table 4. Respondents' 'more frequent' interactions with various health professionals ($n = 49$)[A]

Type of health professional	n (%)
Chiropractor	5 (10)
Dietitian	10 (20)
Exercise physiologist	32 (65)
General practitioner	47 (96)
Massage therapist	29 (59)
Medical specialist	39 (80)
Nurse	9 (18)
Occupational therapist	29 (59)
Osteopath	2 (4)
Pharmacist	6 (12)
Podiatrist	24 (49)
Psychologist	12 (25)
Speech pathologist	3 (6)

[A]Based on the recoded Likert response variable, 'more frequent'.

Experiences and perceptions of interprofessional collaboration

Most private physiotherapy practitioners ($n = 48$; 98%) considered IPC necessary to provide adequate patient care. The majority of physiotherapists ($n = 46$, 94%) provided responses to the open-ended survey questions. Thematic analysis of open-ended responses identified four major themes in relation to the benefits and challenges associated with IPC in physiotherapy private practice and are described below.

Superior patient outcomes

Respondents commented that IPC has significant potential to contribute to superior patient outcomes, and that effective IPC ensures that all health practitioners involved in a person's care are communicating and working towards common goals to achieve the best outcomes.

> Optimal patient outcomes depend on numerous perspectives, not just those of physiotherapy [P9].

> It is vital that we maintain timely, accurate and open communication between treating health professionals and refer as necessary for best possible outcomes [P44].

> It … helps clients achieve their goal with consistency between all key stakeholders [P6].

Holistic patient care

The need for IPC in the provision of holistic, patient-centred care was acknowledged by many respondents, and the value of input from health practitioners across various professional backgrounds to obtain a broader understanding of a patient's clinical picture was highlighted.

> Without a holistic picture and a collaborative approach, you cannot treat a client as efficiently and effectively [P6].

> … many medical and psychological co-issues cannot be managed by physiotherapy, and as such it is important to have good working communication with the relevant professionals to address these [P9].

> Everyone has individual skills, bring them all together we have a multitude of skills likely to effectively help the patient [P37].

Time constraints and caseload demands

Most respondents stated that busy clinical schedules were a significant barrier to participation in IPC. Finding the time to complete written communication was difficult due to high caseload requirements. Of those respondents who reported taking the time to write letters to other health professionals, many viewed this process as one-sided, with replies to the original physiotherapy correspondence rarely received. Several respondents stated that discussing specific patient cases with health practitioners from other professions relied on clinical availability. This was considered an onerous task, as it required coordination between all health practitioners involved in a patient's care.

> Time is often a barrier to quick response from other clinicians due to heavy workloads [P44].

> … time sending doctors letters, but never knowing if they read them or actually take on board any ideas or recommendations [P19].

> I sometimes need to discuss cases with treating orthopaedic surgeons who are busy and difficult to get a hold of [P49].

Awareness of the physiotherapy profession

This theme pertains to the importance of recognising the contributions of health practitioners from diverse professional backgrounds to facilitate effective IPC. Many respondents remarked that health practitioners from other professions appeared to lack knowledge and understanding of the physiotherapy profession and the services that private physiotherapy practitioners provide to people across the lifespan. However, some respondents affirmed that they felt it was their responsibility to educate other health professionals regarding the role of physiotherapy and that this, in turn, would stimulate appropriate referral patterns.

> I feel collaboration within allied health is fine; however, the main limitations are dealing with the medical profession due to their incredibly poor awareness of what our treatment actually is [P39].

> Others are not aware of what I do, so I spend a lot of time trying to market my role [P1].

> I find it worth the time in educating other professionals on what our role is and spreading the word about what we can offer our clients [P11].

Discussion

This is the first known study to document the characteristics of Australian private physiotherapy practitioners' frequency of interprofessional interactions, and the modes of communication and perceived level of satisfaction associated with these interactions. Several main findings from the study emerged: (1) physiotherapists employed in private practice acknowledged the importance of IPC in providing holistic patient care, but reported their overall interprofessional interactions to be infrequent; (2) they utilised various communication methods to facilitate interprofessional interactions; (3) most possessed a moderate-to-high degree of satisfaction regarding their interprofessional interactions; and (4) many private physiotherapy practitioners indicated a need for more training related to interprofessional collaboration.

Thematic analysis of responses to the open-ended survey items revealed that physiotherapists were aware of the value of IPC in the provision of holistic patient-centred care. However, quantitative survey data showed that interprofessional interactions took place less than once a week for nearly one-quarter of all study participants, and were a daily occurrence for approximately one-third of private physiotherapy practitioners. This study suggests that small mono-professional clinics remain a common physiotherapy service delivery model in private practice, which may explain these findings. By virtue of the practice model, mono-professional private practice facilities may not offer physiotherapists adequate ability to engage in IPC. Co-location and integration of health professionals within the same organisation or physical space is proposed to increase the frequency and intensity of IPC in primary health care by increasing the opportunity for brief, informal face-to-face communication (for example, corridor discussions) (Morgan *et al.* 2015; Wener and Woodgate 2016; Bonciani *et al.* 2018). Despite an increased shift towards a co-located primary health care model (Bonciani *et al.* 2018), the extent to which this has been implemented in the Australian physiotherapy private practice setting remains largely unknown. More research is needed to understand the context-specific organisational and system-level factors that influence the nature and quality of IPC in physiotherapy private practice.

Private physiotherapy practitioners interacted most often with medical practitioners, exercise physiologists, massage therapists, occupational therapists and podiatrists, but rarely or never interacted with osteopaths, speech pathologists or chiropractors. Several reasons may explain this variability. Physiotherapists working in private practice are likely to receive a significant amount of patient referrals from general practitioners and medical specialists (Dennis *et al.* 2017). As such, medical professionals may be considered central participants in private physiotherapy practitioners' interprofessional service delivery. However, previous studies have shown that private practitioners predominately interacted with health professionals employed at their facility (Myburgh *et al.* 2014; Perreault *et al.* 2014*a*). Given that many survey respondents worked in multi-professional private practice facilities, this could explain why physiotherapists reported frequent interactions with exercise physiologists, massage therapists, occupational therapists and podiatrists. Private physiotherapy practitioners who employ other health professionals within their clinic have regarded this as a strategy to overcome a potential loss of clientele (Perreault *et al.* 2014*a*). For example, a physiotherapist working in a mono-professional private practice setting may refrain from referring to an

occupational therapist employed at a multi-professional clinic if physiotherapy services are also offered, thereby limiting interprofessional contact due to financial considerations (Perreault *et al.* 2014*a*). Furthermore, physiotherapists working in private practice may have limited interaction with health practitioners from some professions, because the nature of their clientele may not warrant initiation of interprofessional collaboration.

Email, telephone and facsimile were the most reported means of communication that private physiotherapy practitioners used to facilitate their interprofessional interactions. Most respondents did not participate in scheduled, face-to-face interprofessional team meetings, which may reflect their workplace's organisational structure. Private physiotherapy practitioners may not consider formal, time-intensive meetings to be viable in the absence of financial incentives to support their application in clinical practice. Perhaps surprisingly, the majority of respondents had not utilised videoconferencing methods to support their interprofessional practice. The role of technology in supporting IPC for privately practising health professionals remains unexplored, suggesting a direction for future research.

A need for further training in the area of IPC was identified by approximately half of all survey respondents. The assumption that health professionals, including private physiotherapy practitioners, understand what constitutes IPC and intuitively know how to work collaboratively is perhaps a misconception (Reeves *et al.* 2010; Szafran *et al.* 2018). Given that nearly all respondents reported frequent interactions with medical practitioners, physiotherapists may have overstated various activities (for example, receiving a patient referral letter) to denote IPC. However, it is also possible that private physiotherapy practitioners do not possess adequate understanding of certain professions and may lack awareness of the services they provide. Training needs assessments are required to explore private physiotherapy practitioners' knowledge, skills and level of competency regarding IPC. Conducting these assessments may enable the development of interventions that are appropriately tailored to meet the specific training needs of physiotherapists in private practice, including those employed in facilities that may not conform to formal team-based structures.

Limitations

The main limitations of the present study are the low response rate and the inclusion of participants from only one region of Australia. The respondents had a range of clinical experience, were working in a variety of physiotherapy private practice settings and their characteristics (including sex, physiotherapy qualification and primary scope of practice) are comparable to publicly available data on the Australian physiotherapy workforce (Health Workforce Australia 2014; Australian Health Practitioner Regulation Agency 2018). Therefore, they would appear to be generally representative of private physiotherapy practitioners currently working in regional, rural and remote Australia. The use of a non-validated survey instrument is an additional study limitation. However, the survey instrument was deemed to have adequate depth and detail to represent the construct of interest upon review by a range of physiotherapists (Seaton *et al.* 2020*b*). Furthermore, principal physiotherapists mostly completed the survey, and it is possible that responses received from other physiotherapists working at the same practice could have differed. As senior members of staff, practice principals may have considered themselves the most appropriate person to provide information regarding IPC at their respective facilities. A final limitation of the study may be the reliance on physiotherapy managers and administration staff of identified private practice facilities to distribute email invitations to participants on behalf of the research team. However, the distribution of reminder emails at 3 weeks following the initial invitation was sufficient in ensuring invitations were distributed and all relevant gatekeepers provided the research team with the number of private physiotherapy practitioners invited to participate, as requested.

Conclusion

This study has described the characteristics of private physiotherapy practitioners' interprofessional interactions, including their experiences and perceptions regarding IPC. Although physiotherapists recognised the importance of IPC in holistic patient care, their reported frequency of interprofessional interactions in the form of face-to-face meetings, shared consultations and videoconferencing technologies was low, and it is possible that they overstated IPC to constitute tasks, such as receiving referrals and sending patient correspondence. The incongruence between qualitative and quantitative data in this study emphasises the need for more rigorous research. The specific training needs of private physiotherapy practitioners in the field of interprofessional education and practice also warrants further investigation. Future studies should consider the use of qualitative design frameworks, including case study research, to examine how the nature of IPC in physiotherapy private practice is influenced by various context-specific financial, organisational and structural factors. Such research may lead to the implementation of flexible, robust strategies that will support sustainable models of IPC in physiotherapy private practice.

Conflicts of interest

The authors declare no conflicts of interest.

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Appendix 4: Peer-reviewed publication – ‘Physiotherapy private practitioners’ opinions regarding interprofessional collaborative practice’

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Abstract

Physiotherapy private practitioners comprise a growing proportion of Australia’s PHC workforce, yet their views and experiences of IPCP are poorly documented. The aim of this study was to explore Australian physiotherapy private practitioners’ opinions regarding IPCP. Twenty-eight semi-structured interviews were conducted with physiotherapists in 10 private practice sites in Queensland, Australia. Interviews were analyzed using reflexive thematic analysis. Data analysis produced five themes that characterised physiotherapists’ perceptions of IPCP: (a) quality of care considerations; (b) not a one-size-fits-all approach; (c) the need for effective interprofessional communication; (d) fostering a positive work culture; and (e) fear of losing clientele. The findings from this study suggest that physiotherapy private practitioners value IPCP because it can deliver superior client outcomes, can strengthen interprofessional relationships, and has the potential to enhance the professional reputation of the organisations within which they work. Physiotherapists also claimed that IPCP can contribute to poor client outcomes when performed inappropriately, while some reported approaching interprofessional referrals with caution following instances of lost clientele. The mixed views toward IPCP in this study highlight the need to explore the facilitators and barriers to IPCP in the Australian physiotherapy private practice setting.

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Physiotherapy private practitioners' opinions regarding interprofessional collaborative practice: A qualitative study

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ABSTRACT

Physiotherapy private practitioners comprise a growing proportion of Australia's primary care workforce, yet their views and experiences of interprofessional collaborative practice (IPCP) are poorly documented. The aim of this study was to explore Australian physiotherapy private practitioners' opinions regarding IPCP. Twenty-eight semi-structured interviews were conducted with physiotherapists in 10 private practice sites in Queensland, Australia. Interviews were analyzed using reflexive thematic analysis. Data analysis produced five themes that characterized physiotherapists' perceptions of IPCP: (a) quality of care considerations; (b) not a one-size-fits-all approach; (c) the need for effective interprofessional communication; (d) fostering a positive work culture; and (e) fear of losing clientele. The findings from this study suggest that physiotherapy private practitioners value IPCP because it can deliver superior client outcomes, can strengthen interprofessional relationships, and has the potential to enhance the professional reputation of the organizations within which they work. Physiotherapists also claimed that IPCP can contribute to poor client outcomes when performed inappropriately, while some reported approaching interprofessional referrals with caution following instances of lost clientele. The mixed views toward IPCP in this study highlight the need to explore the facilitators and barriers to IPCP in the Australian physiotherapy private practice setting.

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Collaboration; interprofessional; physiotherapy; primary care; qualitative

Introduction

There are calls for changes to models of care internationally to reduce fragmented health care systems (World Health Organization, 2010). Such systems are characterized by structural flaws in funding and governance and contribute to inefficiencies and inequities in health care provision (operation and Development, 2015). Implementing collaborative care models is widely recognized as a key strategy in moving health care systems from fragmentation to positions of strength (World Health Organization, 2010). Interprofessional collaborative practice (IPCP) has been defined as "a situation when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers and communities to deliver the highest quality of care across settings" (World Health Organization, 2010, p. 13). Physiotherapists have been recognized as crucial members of collaborative practice models in primary care due to their potential to address issues associated with an increased chronic disease burden, an aging population, rapidly rising health care costs, and human resource shortages (Adams et al., 2014; Maharaj et al., 2018; Sangaleti et al., 2017). Despite making up a growing proportion of Australia's primary care workforce (Anderson et al., 2005; Department of Health and Aged Care, 2021), there is limited published information pertaining to physiotherapy private practitioners' opinions of IPCP.

Background

When IPCP is employed, the full scope of knowledge, skills and abilities of available health practitioners can be utilized, and the provision of patient care is more likely to be safe, timely, efficient, effective, and equitable (Interprofessional Education Collaborative, 2016). Effective IPCP creates positive interaction, engenders mutual trust and support, encourages communication between professions, and limits demand on a single profession (Reeves et al., 2017). Organisational improvements are facilitated by enhancing care coordination and continuity, promoting equality of status between professionals, increasing job satisfaction and engagement, and creating a healthy workplace (Gilles et al., 2020). However, interventions carried out by a team that is not functioning well can be less effective than those by professionals working independently and in some practice contexts the implementation of IPCP could be unnecessary (Körner et al., 2016; Perreault et al., 2014).

In the Australian physiotherapy private practice context, the small-scale, monoprofessional clinic is the dominant service delivery model (Department of Health and Aged Care, 2021; J. A. Seaton et al., 2020). These single specialty clinics refer to a sole practitioner model of care or a facility only employing one professional group. Opportunities for unplanned informal contact and spontaneous interaction with health practitioners from different professions may

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be scarce for physiotherapists working within these practice models (Bennett-Emslie & McIntosh, 1995). Physiotherapy private practitioners' perceptions regarding what constitutes IPCP may therefore not align with models of best practice that, for example, promote regular multiprofessional team meetings to discuss specific patient cases (D'Amour et al., 2008; Interprofessional Education Collaborative, 2016; Reeves et al., 2010).

Concerns have been highlighted regarding the feasibility of engaging in IPCP when health practitioners work in isolation from one another, or in clinical settings that do not conform to formal team-based processes (Oandasan et al., 2009; Perreault et al., 2014; Szafran et al., 2019). Most research documenting IPCP in primary care, however, has focused on collaboration between medical and nursing practitioners (McInnes et al., 2015; Schadewaldt et al., 2013). Subsequently, published models of IPCP in the physiotherapy private practice setting are ill-defined (J. Seaton et al., 2021). Furthermore, failure to acknowledge the complexity and specificity of the primary care context, such as differences in the public and private health sectors, may lead to poor practices and misunderstandings regarding IPCP (Barrow et al., 2015). To inform the development of practical fit-for-purpose strategies which can support sustainable models of collaborative practice in the physiotherapy private sector, it is essential to understand physiotherapy private practitioners' perceptions of IPCP. Therefore, the aim of this study was to explore physiotherapy private practitioners' opinions regarding IPCP in one Australian state (Queensland).

Methods

Study design

This study was part of a larger sequential explanatory mixed methods project (Creswell & Plano Clark, 2017) that sought to lay the theoretical foundation for education, practice, research and policy regarding IPCP in the physiotherapy private sector. A qualitative research design oriented toward interpretive description (ID) was employed to enable physiotherapists to share their views and experiences regarding IPCP in the private practice setting (Thorne et al., 1997). As an inductive analytical approach explicitly built on constructivist epistemological assumptions, ID asserts that knowledge is not absolute, but is "socially constructed through the subjective person who experiences it" (Thorne, 2008, p. 49). ID draws on experiences and evidence from the clinical setting leading to findings with clear implications for practice, rather than research that aims to theorize (Thorne et al., 2016). Ethics approval was obtained from the James Cook University Human Research Ethics Committee (H7951). This study is reported in accordance with the consolidated criteria for reporting qualitative research (COREQ) guidelines (see Online Supplementary Files; Tong et al., 2007).

Study setting

Participants were physiotherapists from private practice facilities in the region covered by the Northern Queensland Primary Health Network (NQPHN; Figure 1). Spanning an area of 510,000 square kilometers, this tropical environment is home to an estimated 730,000 people. Most of the population are located within the major regional centers of Cairns, Mackay, and Townsville, while approximately 8% of inhabitants live in remote and very remote areas (Northern Queensland Primary Health Network, 2022). Sites eligible for recruitment were in Modified Monash (MM) categories 2–7 and employed physiotherapists registered with the Australian Health Practitioner Regulation Agency (AHPRA). The MM Model classification system categorizes different geographical areas in Australia based on population size and relative remoteness. It consists of seven categories, with MM category 1 representing metropolitan areas, and MM category 7 representing very remote communities.

Site selection and participant recruitment

Site selection was informed by the findings of an online survey conducted in the first phase of the larger mixed methods project (J. A. Seaton et al., 2020). Eligible sites ($n = 105$) were identified from the publicly accessible "Find a Physio" search tool, an index of physiotherapy private practice facilities in Australia maintained by the Australian Physiotherapy Association (https://choose.physio/findaphysio, accessed 15 May 2019), as well as online business directories (for example, Yellow Pages®).

Recruitment was conducted using a combination of e-mail with telephone follow-ups. All physiotherapy private practitioners ($n = 31$) who expressed interest in further participation by providing contact information on their submitted survey were emailed. The initial e-mail invitation included a participant information sheet, containing detail of the study purpose, the role and experience of the first author and interviewer as a male physiotherapist and current doctoral candidate. Recruitment was predominately convenience based, in that participants were selected on a first-come-first-served basis. This approach was used to efficiently recruit participants who were readily available and willing to participate in the study. A semi-purposive stratified element was also used to ensure physiotherapists worked at a range of private practice sites, varying with respect to organizational model, service provision, team composition and geographic location. Physiotherapy private practitioners who agreed to participate in the study ($n = 10$) were then asked to identify physiotherapists employed at their facility to take part in an interview through a process of snowball sampling. Invitations to participate in an interview were sent to all additionally identified individuals ($n = 18$). To be included in the study, participants were required to be: (a) registered physiotherapists with AHPRA; (b) employed in a physiotherapy private practice facility within the NQPHN region for no less than one month; (c) over the age of 18 years and willing to consent to the study; and (d) proficient in spoken and written English. No study participants had a working relationship with the research team. Figure 2 illustrates the recruitment process for the study.

Data collection

Semi-structured face-to-face interviews were carried out by the first author at physiotherapy private practice sites within the

Figure 1. Northern Queensland primary health network region – study locations. Adapted from Northern Queensland Primary Health Network (2022).

NQPHN region between March 2020 and February 2021. Semi-structured interviews ensure that the data from each interview align with the research aim yet allows open exploration of each participant's unique experiences and views of IPCP. An interview guide was developed by the interprofessional research team and informed by the findings from the online survey (J. A. Seaton et al., 2020), which were used to frame the questions and serve as stimulus material for the interviews. The interview guide was piloted with two physiotherapists who had greater than 10 years clinical experience in private practice to ensure that questions and exploratory probes elicited responses with the intended focus on

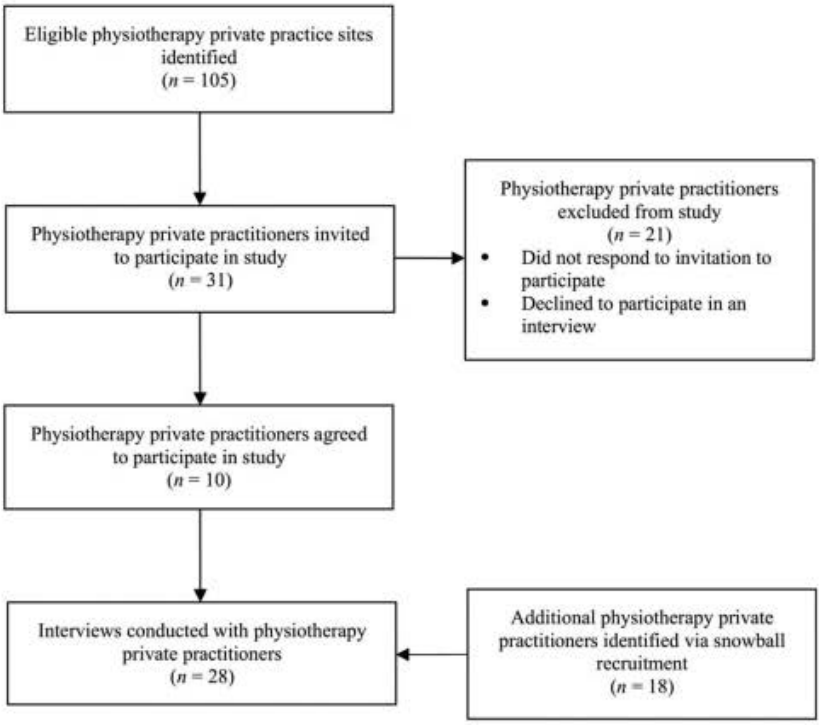

Figure 2. Flow chart illustrating the recruitment process for the study.

participants' opinions regarding IPCP in the physiotherapy private sector. The final interview guide is available in the Online Supplementary Files.

As interviews commenced, demographic information was collected in the form of a brief paper-based questionnaire to provide context for participants' experiences. Interviews were conducted individually in private consultation rooms at each facility and duration ranged from 16 to 117 minutes (mean = 39 minutes). Interviews continued until each participant indicated that they did not have anything else to share. Memos were immediately recorded after each interview to ensure that a reflexive stance was maintained in relation to the research and participants (Birks et al., 2008). All participants provided written informed consent and agreed to the interview being audio-recorded and transcribed. Audio-recorded interviews were transcribed verbatim with the assistance of secure online transcription software (www.otter.ai). Each participant was provided with a copy of the interview transcription and an opportunity to correct or remove any data before the analysis (Patton, 2015).

Data analysis

Reflexive thematic analysis (RTA) was used to facilitate the identification of patterns or themes in the data (Braun & Clarke, 2019). This inductive, iterative approach allowed for flexibility in the interpretation of the data and investigation of both surface meanings and underlying assumptions. RTA aligns well with ID because both prioritize reflexivity and aim to understand the contextual meanings that individuals attach to their lived experiences (Braun & Clarke, 2019; Thorne, 2008).

The first step in the data analysis process was familiarization with the data through careful and repeated reading of transcripts and memos, noting casual observations of initial trends. Open coding was subsequently performed which involved a line-by-line examination of the data to identify preliminary codes. For the first five transcripts, coding was completed independently by two authors (JS and AJ) to sense-check ideas and explore multiple assumptions of the data in a reflexive manner. Crucial to this process was the authors' shared understanding of terminology and concepts relevant to IPCP (Braun & Clarke, 2019). After this step, codes were gradually consolidated and grouped into themes relating to participants' opinions regarding IPCP. Themes were then refined and named collectively by the research team. Endorsed themes were worked into a comprehensive description and populated with quotes to ensure grounding in the data and representation across participants to provide an integrated account of participants' views and experiences of IPCP. Data were managed using NVivo 12 software (QSR International; https://www.qsrinternational.com).

Results

Participants

Physiotherapists from a total of ten different private practice sites within the NQPHN region agreed to participate in the

study. The characteristics of the participating sites are presented in Table 1. Six of the ten clinics were co-located with at least one other health service. Co-location refers to health services that are situated in the same physical space (for example, an office, building or campus), although they are not necessarily fully integrated with one another.

Individual interviews were conducted with 28 physiotherapists (Table 2). The mean age of interview participants was 33 years (range 21–61 years), and they had approximately nine years of clinical experience (range 1–38 years).

Reflexive thematic analysis of the data produced five overarching themes: (a) quality of care considerations; (b) not a one-size-fits-all approach; (c) the need for effective interprofessional communication; (d) fostering a positive work culture; and (e) fear of losing clientele.

Quality of care considerations

This theme describes the perceived effects of IPCP on quality of care. Nearly all participants explained that IPCP has the potential to significantly enhance the quality of client care: "I think it's extremely important to have interprofessional collaboration in place for the client to address their needs comprehensively." (P1) Participants associated IPCP with the notion of the right care in the right place at the right time with the right practitioner: " ... there's lots of benefits of interprofessional collaboration. In terms of positives for the patient, they probably get the best care from the best provider for that particular problem or area." (P15) Interprofessional collaborative practice was likened to providing optimal care from the most appropriate practitioner for a given complaint:

> It might be someone starts with intervention from a physio for something that's quite specific, and then through that it's recognised that actually we need to address some of your chronic health issues to maybe reduce your risk of future problems and ... the best person for you now is the exercise physiologist. (P28)

Most participants stressed that given the increasing complexity of client care underpinned by a growing burden of chronic conditions and an aging population, IPCP should play a larger role in their clinical practice than it was currently doing: "Now that we're talking about [IPCP], I definitely think I could be doing more to collaborate with other professions ... especially given that working in the community means treating people with complex conditions." (P6) Among the population groups that were identified by participants to benefit most from an interprofessional approach to care were people with persitent pain and those living with disability: " ... for people who are suffering from chronic pain, it would then be beneficial to have an interdisciplinary team in place to deal with all aspects of their condition." (P1) Australia's National Disability Insurance Scheme (NDIS) provides access to, and planning and funding of, supports for people with disability: "I think it's an amazing thing to have all these people weigh in on, especially complex management. So, say for [National Disability Insurance Scheme] participants, I think it's imperative because they've got a lot going on" (P4)

Several participants stated that explaining the reasons behind why IPCP is needed for certain clients was highly important in gaining their respect and trust. Although this was occasionally met with resistance from clients, participants shared the view that it was their responsibility to advocate for and clearly articulate why an interprofessional approach was indicated:

> If you're not getting the outcome you want, or you feel that there is extra information that you are lacking that could be facilitated by another health professional, you better be referring. Sometimes you get resistance from your patient on referring, but we need to communicate why that's a good thing (P5)

Not a one-size-fits-all approach

This theme describes how IPCP, if not performed effectively and efficiently, can unnecessarily complicate care and potentially result in adverse clinical outcomes. Participants argued that some clientele groups, by nature of their presenting condition, often do not require resource-intensive interprofessional teamwork. In the management of most acute musculoskeletal conditions, participants believed that IPCP was not necessarily needed: "I think a lot of people do just get better from one approach if their injury is one-dimensional. Say, for example, an ankle sprain." (P1)

Involving the services of multiple professions shortly after a client commences physiotherapy was also viewed in a negative light. Participants maintained that some clients can be overwhelmed if confronted by a team of health practitioners during the early intervention stage. The participants clarified that this was particularly the case for clients who presented with more acute complaints that were generally considered to respond well to physiotherapy treatment alone: "I think by involving too many people too early on, it might be a bad thing ... I think that having too many people weigh in on a situation that's not exactly complex ... I just don't think it's necessary sometimes." (P4) The principal physiotherapist of a multiprofessional clinic claimed that interprofessional referral can sometimes send the wrong message to clients, who may become despondent because they believe their needs have been neglected. In the Australian physiotherapy private practice setting, a principal physiotherapist is typically owner or director of the clinic. Principal physiotherapists are responsible for the overall management and administration of their practice, which includes overseeing the financial aspects of the business, as well as hiring and managing other physiotherapists and support staff:

> ... we're identifying people ... but instead of managing themselves, we're over-referring. So, we're sending people off where they feel pathologised. I think with experience, you get better at not referring too quickly. I think where that backfires, tends to be when people feel like they've been fobbed off. So, it depends on how you frame things (P25)

The principal of another multiprofessional practice added that IPCP can be perceived as doing the "right thing," which may contribute to unnecessary over-referral: "I think we like the idea of interdisciplinary care because it's a nice idea, but sometimes ... only one person is needed to provide all the care for a patient." (P28) Such statements raise questions in relation to when IPCP is indicated in the clinical setting.

Table 1. Characteristics of participating physiotherapy private practice sites.

Site number	Organisational model	Primary physiotherapy clinical area	Physiotherapy services provided*	Health professions employed	Co-located health services	Classification of facility location (MMM)
1	Multiprofessional	Neurological	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology ($n = 2$) Nursing ($n = 1$) Nutrition and dietetics ($n = 4$) Occupational therapy ($n = 8$) Physiotherapy ($n = 6$) Psychology ($n = 4$) Social work ($n = 1$) Therapy assistant ($n = 5$)	Nil	MMM 2
2	Monoprofessional	Paediatrics	NDIS Telehealth	Physiotherapy ($n = 1$)	Nil	MMM 2
3	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Physiotherapy ($n = 3$)	Dental clinic GP clinic Pathology Pharmacy Podiatry	MMM 2
4	Multiprofessional	Musculoskeletal	DVA Medicare CDM NDIS Work injury compensation	Exercise physiology ($n = 1$) Physiotherapy ($n = 4$)	Occupational therapy Speech pathology	MMM 4
5	Monoprofessional	Musculoskeletal	DVA Medicare CDM Work injury compensation	Physiotherapy ($n = 1$)	Massage therapy Podiatry	MMM 5
6	Multiprofessional	Pain	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Exercise physiology ($n = 1$) Medicine ($n = 1$) Occupational therapy ($n = 1$) Physiotherapy ($n = 2$) Psychology ($n = 1$)	Ear, nose and throat surgery clinic Obstetrics and gynecology clinic Ophthalmology clinic Optometry Private hospital Psychology Speech pathology	MMM 2
7	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Physiotherapy ($n = 9$)	Exercise physiology GP clinic Massage therapy Orthopaedic surgery clinic Pathology Pharmacy Podiatry Psychology	MMM 2
8	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Work injury compensation	Nursing ($n = 3$) Medicine ($n = 9$) Physiotherapy ($n = 1$) Psychology ($n = 1$) Social work ($n = 1$)	Nil	MMM 5
9	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology ($n = 3$) Occupational therapy ($n = 1$) Physiotherapy ($n = 6$)	Audiology Cardiology clinic GP clinic Paediatric clinic Pharmacy Private hospital Psychology	MMM 2

(*Continued*)

Table 1. (Continued).

Site number	Organisational model	Primary physiotherapy clinical area	Physiotherapy services provided*	Health professions employed	Co-located health services	Classification of facility location (MMM)
10	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Massage therapy ($n = 1$) Physiotherapy ($n = 6$)	Nil	MMM 2

*As denoted on Australian Physiotherapy Association "Find a Physio" search tool.
CDM, Chronic Disease Management; DVA, Department of Veterans' Affairs; GP, general practice; MMM, Modified Monash Model; NDIS, National Disability Insurance Scheme.

Table 2. Demographic and workplace information of participants.

Participant number	Gender	Highest tertiary qualification	Location of entry-level training	Physiotherapy experience (years)	Classification of workplace location (MMM)	Principal physiotherapist	Organisational model	Co-located
1	Female	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	No
2	Female	Bachelor degree	New Zealand	3	MMM 2	No	Multiprofessional	No
3	Male	Bachelor degree	Australia	9	MMM 2	No	Multiprofessional	No
4	Female	Bachelor degree	Australia	2	MMM 2	No	Monoprofessional	Yes
5	Female	Masters degree	Australia	10	MMM 2	No	Multiprofessional	No
6	Female	Bachelor degree	Argentina	3	MMM 2	No	Multiprofessional	No
7	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
8	Male	Bachelor degree	Australia	7	MMM 2	No	Multiprofessional	No
9	Female	Bachelor degree	Australia	11	MMM 2	Yes	Monoprofessional	No
10	Female	Masters degree	Australia	13	MMM 2	Yes	Monoprofessional	Yes
11	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
12	Male	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	Yes
13	Female	Bachelor degree	Australia	25	MMM 2	No	Monoprofessional	Yes
14	Male	Bachelor degree	Australia	2	MMM 4	No	Multiprofessional	Yes
15	Male	Graduate certificate	Australia	10	MMM 4	No	Multiprofessional	Yes
16	Male	Masters degree	Australia	12	MMM 2	Yes	Monoprofessional	Yes
17	Male	Bachelor degree	Australia	6	MMM 2	No	Multiprofessional	Yes
18	Male	Bachelor degree	Australia	5	MMM 2	No	Multiprofessional	Yes
19	Female	Masters degree	Estonia	5	MMM 2	No	Multiprofessional	No
20	Female	Bachelor degree	New Zealand	19	MMM 2	No	Multiprofessional	No
21	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
22	Male	Graduate diploma	Australia	38	MMM 5	No	Multiprofessional	No
23	Male	Masters degree	Australia	15	MMM 4	Yes	Multiprofessional	Yes
24	Male	Masters degree	Australia	21	MMM 5	Yes	Monoprofessional	Yes
25	Female	Masters degree	Ireland	14	MMM 2	Yes	Multiprofessional	No
26	Female	Bachelor degree	Australia	1	MMM 2	No	Monoprofessional	Yes
27	Male	Masters degree	Australia	1	MMM 2	No	Monoprofessional	Yes
28	Male	Masters degree	Australia	15	MMM 2	Yes	Multiprofessional	Yes

MMM, Modified Monash Model.

The need for effective interprofessional communication

This theme describes the importance of effective interprofessional communication to facilitate optimal client outcomes. Participants considered that good interprofessional communication had positive effects on physiotherapists' clinical practice, which in turn, resulted in better outcomes for their clients: "If there's better communication between all the clinicians involved in a patient's care, I tend to find I can be better at what I do and I can probably provide better education, or better treatment to patients" (P15) Participants described effective interprofessional communication as ensuring that the client journey is more streamlined and efficient:

> ... if you've got the communication between different health professionals, it's going to make a patient's health treatment ... a lot easier for them. They're going to have a lot better intertwined treatment between professions if and it just makes the whole process a lot smoother for them as well. (P26)

Several participants however asserted that when clinical discussion is low, this can produce negative effects:

> I think that sometimes there can be confusion if there's not enough discussion, or the quality of discussion between professionals isn't appropriate, or as much as it needs to be. So, then there can be a profession ... doing a certain intervention for the patient that might not line up exactly with what another professional is doing. If that creates confusion for the patient, that can be detrimental. (P17)

One physiotherapist held the opinion that when there are multiple practitioners involved in a client's care, this will inherently lead to communication issues: "The more providers involved, of course the more difficult the communication problems are." (P28) Although there might be the chance that more problems could arise, this largely depends on the skills of the individual practitioners and their ability to include clients in decision-making processes. One participant, for example, reported that physiotherapists are well positioned to clarify messages for clients that have had difficulty interpreting from other health practitioners, namely medical specialists: "I've had people that have been seeing specialists for several years, and they'll come in and you'll explain to them what is going on and then it will be like, 'Really? That's what's wrong with me?'" (P22)

Fostering a positive work culture

This theme explains how effective IPCP builds camaraderie between practitioners from multiple professions that can lead to the development of an interprofessional network with reciprocal benefits. For sole practitioners or participants employed in single specialty clinics, engaging in IPCP meaningfully resulted in stronger rapport and relationships with health professionals from various external organizations within the region. Participants working in multiple specialty clinics likened IPCP to feeling valued as a team member, whereby conflict was largely non-existent. Although participants acknowledged that there are situations when the role of one practitioner is more dominant, they also described instances where all clinicians involved were given equal opportunity to

contribute and provide input to a client's care. Such occasions were associated with high levels of practitioner satisfaction:

> Often with patients there's a particular profession that isn't as necessary as it might otherwise be. But I can recall for this particular patient, everyone was essentially playing a significant part, which made the collaborative process truly collaborative, in that when we would have a team meeting, everyone had an equal amount to say. It was quite enjoyable professionally to bounce things off everyone else (P17)

Physiotherapy private practitioners who did not adopt an interprofessional approach to care were perceived by interview participants to be potentially missing out on opportunities to learn and develop as practitioners. Several physiotherapists held the belief that working in an interprofessional manner was much more professionally rewarding and personally satisfying when compared to practising in isolation from other professions: " . . . it's definitely more rewarding. It's eye opening. You find out about your other clinicians and other professions in a more intimate way, and it's actually quite rewarding in that aspect too. It's definitely more interesting." (P3)

Several participants believed that interprofessional team environments could alleviate professional isolation. One physiotherapist, who had several years' experience working as sole practitioner in a rural town, believed that some private practice facilities promote a stronger sense of collegial team culture than others – a factor which could be highly desirable for prospective employees:

> I worked for myself . . . and it was a very successful clinic. I was booked solid for months and months. However, I began to feel it would be nice to have more professional collaboration with people. So, it was one of the reasons that I moved. When I came to [this town], I didn't look for a job on offer, I targeted this place, and came in and saw [the practice principal] for that exact reason. So, talking to me about interprofessional collaboration, you're pretty well singing to the choir. (P5)

Most study participants identified as being a member of an interprofessional team and were appreciative to work as part of one. A physiotherapist with a strong sense of interprofessional identity issued a call to action inviting all health practitioners working in their respective silos to become more collaborative:

> I love working in an interdisciplinary practice. I feel very lucky, and I love that I've got access to lots of brains in lots of different areas . . . and if you have never worked in an interdisciplinary team, you don't know what you're missing out on. (P20)

Fear of losing clientele

This theme described physiotherapy private practitioners' opinions regarding whether interprofessional referral practices resulted in a loss of clientele. This issue was perceived to be largely specific to private practice and may not be observed in other settings. Many participants believed that by referring a client to a health practitioner at another organization who happened to work in close proximity with other physiotherapists, the client would recognize this act of good faith and repay them with their ongoing loyalty:

> . . . they will not lose the patient by referring them to someone else for something else. They'll gain their trust because that person knows that you have their best interests at heart. You send the person to somebody else, they'll come back to you because they know you want the best for them. (P5)

Principal physiotherapists asserted that engaging in IPCP meaningfully enabled the establishment of a stable referral base, as one explained: "We rely on and utilize our relationships with local GPs [general practitioners] and specialists to generate a large portion of our referral base." (P28) Another practice principal argued that participating in IPCP resulted in more appropriate referrals from a greater number of practitioners:

> I just think it's a really important part of what we do. Even if you don't want to justify it from a patient continuity of care perspective, I think the biggest thing is it's really good for your business model. In private practice, you get more referrals, you get better referrals . . . you get more timely referrals, and you get more appropriate referrals. (P23)

Some participants, however, recalled the negative effects of IPCP in physiotherapy private practice, whereby referrals to health practitioners at different private sector organizations had resulted in the client being redirected away from them for that episode of care:

> We've had people redirected from us. So, that's a bit disappointing. So, we've recommended a surgeon to somebody, they've had surgery and they've got a physio in their rooms. And that surgeon has recommended that physio because they have a mateship or an agreement. So, that's just a disappointing part of the job that exists. (P16)

Even participants who had not experienced occasions whereby clientele had been diverted away from their care following a well-intentioned interprofessional referral regarded the act as a possible unintended consequence of IPCP that would leave them relatively confused and frustrated:

> If by me sending them to the doctor they were then referred away from me, I'd be pretty p . . . ed off. That's a bit of bad faith and I don't operate like that. So, if it did happen to me, it would very much leave a sour taste. (P18)

One participant stressed that physiotherapy private practitioners should not take it personally when clients do not return after accessing the services of another health profession, assuming client goals are being met:

> I'd be concerned if they didn't come back to see me, but as long as they're reaching their goals with . . . other [health professions] like exercise physiologists and OTs [occupational therapists] . . . and they're still being treated and going in the right direction. I think that's the most important thing. (P27)

Many participants strongly believed that the client-related benefits of IPCP should be the primary motivating factor to engaging in collaborative processes and fearing loss of income should not underpin such decisions: "If that's their view, then they're in private practice for the wrong reasons." (P1). "It should always be what's best for the patient. So, if we've acknowledged that [interprofessional] collaboration is best for the patient, we can't possibly say it's not going to do us any favors." (P9)

Discussion

The aim of this study was to explore Australian physiotherapy private practitioners' opinions regarding IPCP. This study builds on, and explores, preliminary findings from an online survey (J. A. Seaton et al., 2020), with a sample of physiotherapists employed in private practice sites within the NQPHN region. Five main themes characterized physiotherapy private practitioners' views and experiences regarding IPCP: (a) quality of care considerations; (b) not a one-size-fits-all approach; (c) the need for effective interprofessional communication; (d) fostering a positive work culture; and (e) fear of losing clientele.

Interprofessional collaborative practice was considered to be an approach to clinical care that better meets the needs of people with chronic and complex health conditions given that no single health profession has all of the skills and expertise required to intervene adequately and holistically (Andermann, 2016). Increasingly, people are experiencing multiple chronic conditions and frequently present to primary care practitioners, including physiotherapists (Australian Bureau of Statistics, 2022; Australian Institute of Health and Welfare, 2022). The sharp rise in multimorbidity within the community is contributing to increased complexity of care, which, in turn, is often associated with an increase in the number of health practitioners involved in a person's care (Jansen et al., 2015). These patients may express concerns about multiple appointments, a loss of continuity of care, inadequate and conflicting information, and communication issues with and among treating clinicians (Adeniji et al., 2015; Boeckxstaens et al., 2020). Although the results of this study provide evidence in support of IPCP models of care as best practice for people with multiple comorbidities, the value of receiving care from a single health practitioner who has an established rapport with clients was considered an appropriate service delivery model for less complex conditions. At present, research suggests that care recipients lack opportunities to provide direct feedback concerning their service needs and preferences in primary care (Soklaridis et al., 2017). Further research to gain an in-depth understanding of the client perspective is required to improve the overall quality of IPCP in primary care.

According to study participants, individuals with acute presentations requiring rapid intervention are less likely to benefit from intensive IPCP compared to people with chronic and complex conditions. Most physiotherapists stressed that acute musculoskeletal problems can be appropriately managed by physiotherapy alone, without compromising quality of care. Experienced clinicians argued that IPCP does not necessarily eliminate the need for single specialty care, nor should it be discouraged. There is strong evidence demonstrating that excellent clinical outcomes for musculoskeletal conditions, such as knee osteoarthritis, can be achieved by one profession (Barton et al., 2021).

The critical role of effective communication to facilitate successful IPCP in primary care was highlighted in this study. However, physiotherapy private practitioners also had concerns that involving too many practitioners from various professions in a client's care can lead to communication issues. Although this may be a misguided assumption based on anecdotal evidence, it is important to acknowledge that health practitioners, including physiotherapists, may not always possess the requisite communication skills for IPCP in primary care (Szafran et al., 2018). Health practitioners remain primarily educated in silos with an emphasis on uniprofessionalism despite most of clinical practice requiring collaboration (Health Professions Accreditors Collaborative, 2019).

Interprofessional collaborative practice was perceived to break down traditional silos and reduce the burden on individual practitioners. Participants reported that effective IPCP resulted in believing they were valued as a part of a primary care team, where significant autonomy was given to them, and conflict was largely non-existent. It is possible that physiotherapy private practitioners' service delivery model may have influenced their attitudes toward IPCP. More than half of study participants worked in multiprofessional clinics, which were regarded as supportive team environments where shared decision-making could be achieved. Among participants working in single specialty clinics, most were co-located with other health services. Co-location has been found to intensify interprofessional interactions and consequently informal and formal communication and knowledge exchange (Bonciani et al., 2018). Physiotherapy private practitioners working in isolation from other health professions may therefore not report the same effects of IPCP as those who work in close physical proximity to clinicians from different professional backgrounds. Future research should investigate the facilitators and barriers to IPCP across a diverse range of physiotherapy private practice contexts. Such research will allow the identification and development of practical strategies to improve, where needed, IPCP for private sector physiotherapists.

Physiotherapy private practitioners, especially those who had a financial stake in their respective clinics, acknowledged that participation in IPCP helped build a referral network to generate client referrals, and can enhance professional reputation. However, for some physiotherapy private practitioners prioritizing the benefits of IPCP for clients came at a financial cost. The act of referring clients to medical specialists, namely orthopedic surgeons working at other private sector facilities, occasionally resulted in a loss of clientele. Participants attributed this observation to the growing trend of specialists employing a physiotherapist in their clinic. Similarly, referring clients to health practitioners at another private practice facility where physiotherapy services were also offered was viewed as a potential threat to business. Previous research suggests that it is perhaps in the financial interests of principal physiotherapists to employ practitioners from the professions that are frequently referred to within their facility, rather than continuing to seek the services of these health professionals at external organizations (Myburgh et al., 2014; Perreault et al., 2014).

Limitations

There are limitations of the present study. One limitation is a potential volunteer bias. Although physiotherapy private practice sites were carefully selected to ensure that recruited

participants were "information-rich" (Patton, 2015), those eligible for study inclusion were chosen from a list of survey respondents who expressed interest in further research (J. A. Seaton et al., 2020). Physiotherapy private practitioners may have therefore agreed to participate in the current study because they were either interested in engaging in, or held strong opinions toward, IPCP. This study, however, deepens our understanding of IPCP from the perspective of an understudied population, physiotherapists working in private practice in regional and rural Australia. Additionally, no health practitioners from other professions were included in the study. Although this might be viewed as a limitation because it may not capture a holistic definition of IPCP, it was considered a strength of this study. In line with social constructivism, the objective was to bias and privilege the accounts of physiotherapy private practitioners, whose voice is largely omitted from the published literature despite comprising a growing proportion of the Australian primary care workforce (Department of Health and Aged Care, 2021).

Conclusion

This study provides new and relevant information pertaining to physiotherapy private practitioners' opinions regarding IPCP. The findings from this study suggest that physiotherapy private practitioners value IPCP because it can deliver superior client outcomes, strengthen relationships with practitioners from other professions by nurturing a positive work environment, and create a competitive advantage for practice owners through enhancing their professional reputation. Participants also claimed that when performed inappropriately, IPCP can contribute to potentially over-complicated management, which may contribute to poor client outcomes and some reported approaching interprofessional referrals to practitioners at other private sector facilities with caution due to past experiences that resulted in a loss of clientele. The mixed views toward IPCP in this study highlight the need to explore the facilitators and barriers to IPCP in the Australian physiotherapy private practice setting. Future researchers should consider employing direct observational methods to compare whether physiotherapy private practitioners' self-reported accounts align with their actual interactions. Such research may inform the development of flexible and practical strategies that will support sustainable models of IPCP in physiotherapy private practice.

Authors' contributions

JS was responsible for collecting and interpreting the participant data. JS and AJ were both responsible for data analysis. JS conducted the primary manuscript draft. JS, AJ, CJ and KF completed subsequent manuscript revisions. All authors read and approved the final manuscript.

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Appendix 5: Peer-reviewed publication – 'Facilitators of effective interprofessional collaborative practice for physiotherapy private practitioners: An interpretive descriptive study'

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2023b). Facilitators of effective interprofessional collaborative practice for physiotherapy private practitioners: An interpretive descriptive study. *Journal of Interprofessional Education & Practice, 33*, 100671. https://doi.org/10.1016/j.xjep.2023.100671

Abstract

Introduction: Despite the growing presence of physiotherapy private practitioners within Australia's health care workforce, little is known about their perspectives of IPCP. The aim of this study was to explore the facilitators of IPCP from the perspective of Australian physiotherapy private practitioners. **Methods:** Semi-structured interviews were conducted with 28 physiotherapists and 64 h of observation was completed in 10 private practice sites in Queensland, Australia. Interview and observation data were pooled and analysed using reflexive thematic analysis. **Results:** Data analysis produced four main themes and three sub-themes that characterised physiotherapists' perspectives on the facilitators of IPCP: (a) close physical proximity (integrated team membership; co-location; interior architecture); (b) technological advancements; (c) complex client presentations; and (d) positive professional reputation. **Conclusion:** This study provides valuable insights into the facilitators of IPCP from the perspective of physiotherapy private practitioners. Emphasising close physical proximity of multiple health practitioners, leveraging technological innovations, recognising the value of IPCP for clients with chronic and complex care needs, and cultivating positive professional reputations can promote effective IPCP for physiotherapy private practitioners. The findings from this research may be used to guide the development of innovative strategies that will support robust and sustainable models of IPCP in the physiotherapy private practice setting.

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Facilitators of effective interprofessional collaborative practice for physiotherapy private practitioners: An interpretive descriptive study

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ABSTRACT

Introduction: Despite the growing presence of physiotherapy private practitioners within Australia's health care workforce, little is known about their perspectives of interprofessional collaborative practice (IPCP). The aim of this study was to explore the facilitators of IPCP from the perspective of Australian physiotherapy private practitioners.

Methods: Semi-structured interviews were conducted with 28 physiotherapists and 64 h of observation was completed in 10 private practice sites in Queensland, Australia. Interview and observation data were pooled and analysed using reflexive thematic analysis.

Results: Data analysis produced four main themes and three sub-themes that characterised physiotherapists' perspectives on the facilitators of IPCP: (a) close physical proximity (integrated team membership; co-location; interior architecture); (b) technological advancements; (c) complex client presentations; and (d) positive professional reputation.

Conclusion: This study provides valuable insights into the facilitators of IPCP from the perspective of physiotherapy private practitioners. Emphasising close physical proximity of multiple health practitioners, leveraging technological innovations, recognising the value of IPCP for clients with chronic and complex care needs, and cultivating positive professional reputations can promote effective IPCP for physiotherapy private practitioners. The findings from this research may be used to guide the development of innovative strategies that will support robust and sustainable models of IPCP in the physiotherapy private practice setting.

1. Introduction

Interprofessional collaborative practice (IPCP) is an integral component of modern health care delivery.[1,2] Interprofessional collaborative practice refers to cooperation and communication among health practitioners from diverse professional backgrounds.[2] The combination of health practitioners' collective knowledge, skills and expertise provides safe, timely, efficient, effective, and equitable patient care.[3,4] Effective IPCP contributes to positive patient outcomes, cost-effective health care and higher satisfaction levels for both patients and practitioners.[4] However, despite its many benefits, IPCP can be difficult to implement in clinical practice. Communication problems, power imbalances and a lack of understanding of other professions' expertise may present challenges to successfully implementing IPCP in the clinical setting.[1,5]

Physiotherapy represents one of the largest allied health professions in Australia, accounting for more than 40,000 qualified practitioners.[6] In Australia, most physiotherapists work primarily as clinicians in private practices, which are professional businesses, or for-profit organisations, that are not directly funded through government departments.[7,8] Physiotherapy services in private practice are typically administered to consumers via private health insurance packages through a fee-for-service model.[9] Physiotherapists working in private practice are reported to account for 70% of the total physiotherapy workforce in Australia,[6] and it is estimated that the physiotherapy private practice is a $2.2 billion AUD industry made up of more than 7000

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businesses.[9] The strong growth of the physiotherapy private practice industry in Australia may reflect financial constraints on the public health care system, as well as increasing demand for access to physiotherapy in the community.[10]

The availability of information regarding how IPCP is influenced and operationalised for physiotherapy private practitioners is scarce.[5] The factors facilitating effective IPCP have been previously reported in the literature, however much of this research has emanated from acute inpatient settings where formalised team environments are common and predominately focused on perspectives from medical and nursing professions.[11–13] In formal team-based settings, collaborative practice is most successfully achieved when opportunities for unplanned informal contact and spontaneous interaction with health practitioners from other professions are high.[14,15] Given that physiotherapy private practices often employ only one professional group or rely on a sole practitioner model of care,[7] physiotherapists working in these clinics may experience facilitators of IPCP that differ from health professionals practising in other clinical contexts. Research is therefore needed to examine the facilitators of IPCP from the perspective of physiotherapy private practitioners, especially those working in isolation from other health professions.

Physiotherapists are crucial members of collaborative models of care due to their skills in addressing issues associated with an increased chronic disease burden, an ageing population, rapidly rising health care costs, and human resource shortages.[16–18] However, little is currently known about IPCP from the perspective of physiotherapy private practitioners.[5] A comprehensive understanding of the perspectives of physiotherapy private practitioners, including information regarding how collaborative practice models can be implemented in the absence of integrated multiprofessional team environments, is required to inform the development of innovative strategies to promote successful IPCP in the physiotherapy private sector. This knowledge will ensure that strategies developed are tailored to the specific needs of physiotherapy private practitioners, but also contribute to the provision of high-quality

Fig. 1. Northern Queensland Primary Health Network region – study locations.[23]

patient care and increased efficiency in health care delivery.[3] The aim of this study was to explore the facilitators of IPCP from the perspective of physiotherapy private practitioners.

2. Methods

2.1. Study design

This study was part of a larger sequential explanatory mixed methods project[19] which sought to lay the theoretical foundation for education, practice, research and policy regarding IPCP in the physiotherapy private sector.[5,20] Interpretive description (ID) was chosen as the methodological framework for this study due to its unique ability to facilitate the exploration and interpretation of complex social phenomena, particularly in health care settings.[21] As an inductive analytical approach underpinned by constructivist epistemological assumptions, ID asserts that knowledge is not absolute, but is "socially constructed through the subjective person who experiences it".[22] Interpretive description minimises the distance between researcher and participant, allowing those closest to the phenomenon under investigation to share their experiences and interpretations of their lived reality, while emphasising the significance of context in shaping participants' behaviours.[22] Ethics approval was obtained from the James Cook University Human Research Ethics Committee (H7951).

2.2. Study setting

Participants were physiotherapists from private practice facilities in the region covered by the Northern Queensland Primary Health Network (NQPHN) (Fig. 1). Spanning an area of 510,000 square kilometres, this region is home to an estimated 730,000 people.[23] Most of the population are located within the major regional centres of Cairns, Mackay and Townsville, while approximately 8% of inhabitants live in remote and very remote areas.[23] The MM Model classification system categorises different geographical areas in Australia based on population size and relative remoteness.[24] It consists of seven categories, with MM category 1 representing metropolitan areas and MM category 7 representing very remote communities. Sites eligible for recruitment were in Modified Monash (MM) categories 2–7[24] and employed physiotherapists registered with the Australian Health Practitioner Regulation Agency (AHPRA).

2.3. Site selection and participant recruitment

Site selection was informed by the findings of an online survey conducted in the first phase of the larger mixed methods project.[20] Eligible sites ($n = 105$) were identified from the publicly accessible 'Find a Physio' search tool, an index of physiotherapy private practices in Australia maintained by the Australian Physiotherapy Association (https://choose.physio/findaphysio, accessed 15 May 2019), as well as online business directories. For inclusion in the study, participants were required to be: (a) registered physiotherapists with AHPRA; (b) employed in a physiotherapy private practice within the NQPHN region for no less than one month; (c) over the age of 18 years and willing to consent to the study; and (d) proficient in spoken and written English.

Physiotherapy private practitioners ($n = 31$) who were interested in participating in further research provided their contact information on their submitted online survey. These physiotherapists were subsequently emailed and provided with a participant information sheet detailing the study purpose. Recruitment was predominately convenience based, in that participants were selected on a first-come-first-served basis.[25] This approach was used to efficiently recruit participants who were readily available and willing to participate in the study. A semi-purposive stratified element was also used to ensure participating physiotherapists worked at a range of private practice sites, varying with respect to organisational model, service provision, team composition and geographic location.[25] Site sampling was ceased once these purposive criteria were met.

Physiotherapists ($n = 10$) from a total of ten private practice sites within the NQPHN region agreed to participate in the study. The characteristics of the participating sites are presented in Table 1. The physiotherapy private practitioners who agreed to participate in the study were then asked to identify other physiotherapists employed at their clinic to take part in an interview through a process of snowball sampling. Invitations to participate in an interview were sent to all identified individuals, of which an additional 18 physiotherapists agreed. Fig. 2 illustrates the recruitment process for the study.

2.4. Data collection

2.4.1. Interviews

Individual interviews were conducted with 28 physiotherapists (Table 2) between March 2020 and February 2021. Semi-structured interviews allowed for the exploration of each participant's individual unique views and experiences of IPCP, while ensuring that the data collected were relevant to the research aim. The interview guide utilised in the study was developed by the multiprofessional research team and its contents were informed by the findings from an online survey conducted earlier.[20] The interview guide was piloted with two physiotherapists who had greater than ten years clinical experience in private practice to ensure that questions and exploratory probes elicited responses with the intended focus on the perceived facilitators of IPCP in the physiotherapy private sector. The final interview guide is available in Appendix 1.

As interviews commenced, demographic information was collected from the participants via a paper-based questionnaire (Appendix 2). The demographic data was collected to provide context for participants' responses. Interviews were conducted individually in private consultation rooms at each private practice site, with an average duration of 39 min (range 16–117 min). Memos were immediately recorded after each interview to ensure that a reflexive stance was maintained in relation to the research and participants.[26] All participants provided written informed consent and agreed to the interview being audio-recorded and transcribed. Audio-recorded interviews were transcribed verbatim with the assistance of secure online transcription software (https://otter.ai). Each participant was provided with a copy of the interview transcription and an opportunity to make any necessary corrections or omissions before the analysis.[27]

2.4.2. Observation

To better understand and capture the context within which IPCP occurs in physiotherapy private practice, overt non-participant observational data was collected.[28] This involved the researcher (JS) attending study sites and observing the activities, events and interactions taking place, without participating in them.[29] At each initial visit to participating physiotherapy private practice sites, an informal meeting was held to explain the purpose of the research to all staff members. Private practice staff, including physiotherapists, were informed that they could decline participation or ask the researcher to leave the site at any time during the fieldwork. Verbal consent for observations was obtained from all participating staff members at each site by the first author. To protect client confidentiality and privacy, consultations between health practitioners and clients were not observed, and the research team did not collect any individual client information or access client charts.

In total, 64 h of observational data were collected, with JS spending one to four days at participating sites. The observations were conducted at different times of the day and included various structured and unstructured events. Activity was observed in public and staff-only shared spaces throughout the sites, including conference rooms, offices, and hallway corridors. The distance between the observer and the observed was unobtrusive but allowed for clear audibility of conversations

Table 1
Characteristics of participating physiotherapy private practice sites.

Site number	Organisational model	Primary physiotherapy clinical area	Physiotherapy services provided[a]	Health professions employed	Co-located health services	Classification of facility location (MMM)
1	Multiprofessional	Neurological	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology (n = 2) Nursing (n = 1) Nutrition and dietetics (n = 4) Occupational therapy (n = 8) Physiotherapy (n = 6) Psychology (n = 4) Social work (n = 1) Therapy assistant (n = 5)	Nil	MMM 2
2	Monoprofessional	Paediatrics	NDIS Telehealth	Physiotherapy (n = 1)	Nil	MMM 2
3	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Physiotherapy (n = 3)	Dental clinic GP clinic Pathology Pharmacy Podiatry	MMM 2
4	Multiprofessional	Musculoskeletal	DVA Medicare CDM NDIS Work injury compensation	Exercise physiology (n = 1) Physiotherapy (n = 4)	Occupational therapy Speech pathology	MMM 4
5	Monoprofessional	Musculoskeletal	DVA Medicare CDM Work injury compensation	Physiotherapy (n = 1)	Massage therapy Podiatry	MMM 5
6	Multiprofessional	Pain	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Exercise physiology (n = 1) Medicine (n = 1) Occupational therapy (n = 1) Physiotherapy (n = 2) Psychology (n = 1)	Ear, nose and throat surgery clinic Obstetrics and gynaecology clinic Ophthalmology clinic Optometry Private hospital Psychology Speech pathology	MMM 2
7	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Physiotherapy (n = 9)	Exercise physiology GP clinic Massage therapy Orthopaedic surgery clinic Pathology Pharmacy Podiatry Psychology	MMM 2
8	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Work injury compensation	Nursing (n = 3) Medicine (n = 9) Physiotherapy (n = 1) Psychology (n = 1) Social work (n = 1)	Nil	MMM 5
9	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology (n = 3) Occupational therapy (n = 1) Physiotherapy (n = 6)	Audiology Cardiology clinic GP clinic Paediatric clinic Pharmacy Private hospital Psychology	MMM 2
10	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Massage therapy (n = 1) Physiotherapy (n = 6)	Nil	MMM 2

CDM, Chronic Disease Management; DVA, Department of Veterans' Affairs; GP, general practice; MMM, Modified Monash Model; NDIS, National Disability Insurance Scheme.

[a] As denoted on Australian Physiotherapy Association 'Find a Physio' search tool.

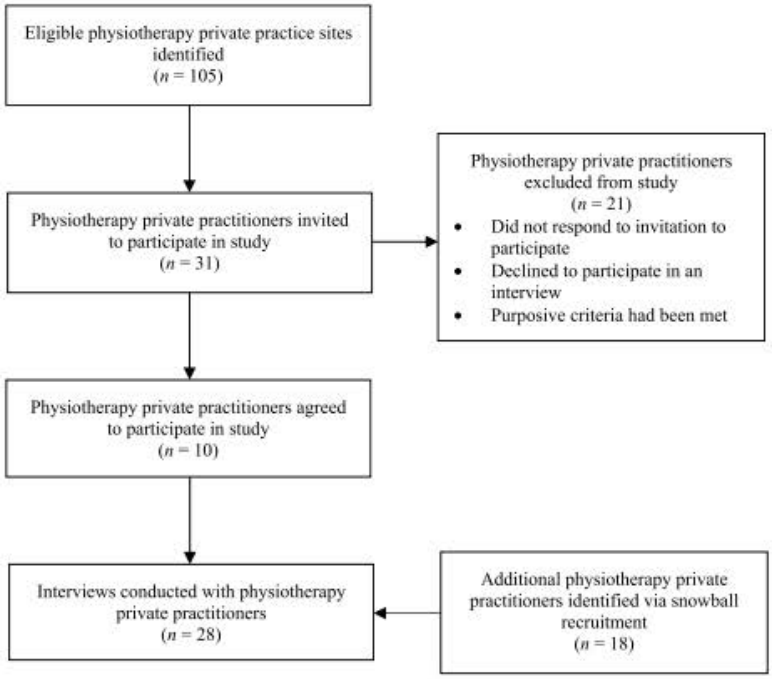

Fig. 2. Flow chart illustrating the recruitment process for the study.

Table 2
Demographic and workplace information of participants.

Participant number	Gender	Highest tertiary qualification	Location of entry-level training	Physiotherapy experience (years)	Classification of workplace location (MMM)	Principal physiotherapist	Organisational model	Co-located
1	Female	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	No
2	Female	Bachelor degree	New Zealand	3	MMM 2	No	Multiprofessional	No
3	Male	Bachelor degree	Australia	9	MMM 2	No	Multiprofessional	No
4	Female	Bachelor degree	Australia	2	MMM 2	No	Monoprofessional	Yes
5	Female	Masters degree	Australia	10	MMM 2	No	Multiprofessional	No
6	Female	Bachelor degree	Argentina	3	MMM 2	No	Multiprofessional	No
7	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
8	Male	Bachelor degree	Australia	7	MMM 2	No	Multiprofessional	No
9	Female	Bachelor degree	Australia	11	MMM 2	Yes	Monoprofessional	No
10	Female	Masters degree	Australia	13	MMM 2	Yes	Monoprofessional	Yes
11	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
12	Male	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	Yes
13	Female	Bachelor degree	Australia	25	MMM 2	No	Monoprofessional	Yes
14	Male	Bachelor degree	Australia	2	MMM 4	No	Multiprofessional	Yes
15	Male	Graduate certificate	Australia	10	MMM 4	No	Multiprofessional	Yes
16	Male	Masters degree	Australia	12	MMM 2	Yes	Monoprofessional	Yes
17	Male	Bachelor degree	Australia	6	MMM 2	No	Multiprofessional	Yes
18	Male	Bachelor degree	Australia	5	MMM 2	No	Multiprofessional	Yes
19	Female	Masters degree	Estonia	5	MMM 2	No	Multiprofessional	No
20	Female	Bachelor degree	New Zealand	19	MMM 2	No	Multiprofessional	No
21	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
22	Male	Graduate diploma	Australia	38	MMM 5	No	Multiprofessional	No
23	Male	Masters degree	Australia	15	MMM 4	Yes	Multiprofessional	Yes
24	Male	Masters degree	Australia	21	MMM 5	Yes	Monoprofessional	Yes
25	Female	Masters degree	Ireland	14	MMM 2	Yes	Multiprofessional	No
26	Female	Bachelor degree	Australia	1	MMM 2	No	Monoprofessional	Yes
27	Male	Masters degree	Australia	1	MMM 2	No	Monoprofessional	Yes
28	Male	Masters degree	Australia	15	MMM 2	Yes	Multiprofessional	Yes

MMM, Modified Monash Model.

physiotherapists and other practice staff. Direct observation of IPCP at one study site was not possible because the physiotherapist was providing services in various outreach locations, rather than working from a single, stationary workplace. Outreach services are designed to provide health care services and supports to communities who may not have access to health care facilities or resources locally.[30] As a result, it was difficult to monitor and observe their interprofessional interactions with other health practitioners.

The process of recording preliminary fieldnotes during each observation session involved jotting down brief notes by hand, which were later transcribed in more detail into a Microsoft® Word document.[31] The fieldnotes captured the observed interactions, including the type of interaction, participants involved, location and duration of time spent in each environment. The researcher also engaged in brief, informal conversations with physiotherapists to explore any questions and ideas that emerged during the observations. These conversations ranged from seeking clarification on certain events to asking for an explanation of specific tasks undertaken by physiotherapy private practitioners during their administrative and professional responsibilities, such as managing practice staff, coordinating schedules, and communicating with health care providers from external organisations through phone calls or email. Audio-recording of informal conversations did not take place. Instead, upon conclusion of the conversation, the researcher recorded the key points exchanged. Fieldnotes incorporated reflections by the first author that included personal feelings, actions, and responses to the situations observed[32] and were peer-reviewed by the research team. Reviewing the fieldnotes collectively allowed the researchers to obtain a broader understanding of the events and interactions that occurred, enhancing the trustworthiness of the data.[33]

2.4.3. Data analysis

Reflexive thematic analysis was employed to facilitate the identification of patterns or themes in the pooled interview and observation data.[34] Reflexive thematic analysis is an iterative approach that emphasises the importance of reflexivity and critical reflection throughout the process to ensure that the researcher's biases and assumptions are acknowledged and accounted for in the analysis.[35] Reflexive thematic analysis aligns well with ID as both approaches prioritise the researcher's active engagement with the data and the need for a nuanced and contextually sensitive analysis.[22,34]

The first analytic step was familiarisation with the data through careful and repeated reading of interview transcripts, memos and fieldnotes (including observational and informal conversation notes) to gain a sense of the content and identify any initial impressions. Next, the data were analysed line-by-line to generate initial codes that represent patterns and themes in the data. This involved searching for recurring patterns, concepts, and ideas in the data in a process of open coding. After this, codes were consolidated and grouped into themes relating to the facilitators of IPCP. Once the identified potential themes had been reviewed and refined, clear and concise descriptions accurately capturing the meaning of each theme were created and then named. Finally, endorsed themes were incorporated into a comprehensive description and populated with relevant quotes that were carefully selected to ensure they accurately represented the themes. By incorporating these quotes, the resulting account provided a robust and authentic representation of the participants' perspectives regarding the facilitators of IPCP. Data were managed using NVivo software (QSR International; https://www.qsrinternational.com).

3. Results

3.1. Overview

Reflexive thematic analysis of the data produced four overarching themes and three sub-themes that characterised physiotherapy private practitioners' perspectives on the facilitators of IPCP: (a) close physical proximity (integrated team membership; co-location; interior architecture); (b) technological advancements; (c) complex client presentations; and (d) positive professional reputation.

3.2. Theme 1: close physical proximity

3.2.1. Sub-theme 1.1: integrated team membership

This sub-theme describes how the workforce composition of private practice sites contributes to the promotion of IPCP. Participants employed in multiprofessional sites reported having more opportunities to interact with clinicians from other health professions than physiotherapists working as sole traders or in monoprofessional private practices:

> We're lucky here because we see that interdisciplinary approach a formality. It's easy for us because we have so many different professions under the same roof. I guess it's a lot trickier for smaller private practices that only have [employ] physios [physiotherapists]. (P8, Site 1, Interview)

Participants working at monoprofessional sites argued that multiprofessional private practice models provided opportunities to engage in interprofessional teamwork that were not afforded to them:

> … if you've literally got a team that has OTs [occupational therapists], physios [physiotherapists], exercise physiologists … they're literally in the practice, so you can talk to them as required and you can … discuss what options are available from their ends. So, it's a lot easier and … a lot less time consuming … to be able to do that. (P26, Site 3, Interview)

> The principal physiotherapist of a multiprofessional private practice recognised the benefits of employing multiple health professions at their organisation, including the ability to develop a better understanding of other professions' roles and responsibilities: "I probably make a point of spending time with our OTs [occupational therapists] and EPs [exercise physiologists] … because I learn things about their professions and that's actually really good for interdisciplinary practice." (P28, Site 9, Interview) Participants at site one regarded their community outreach service to be a major facilitator of IPCP because it provided an opportunity to learn with, and from, other health professionals:

> … we go on outreach locations where one person from each discipline will go in the car together … and that's probably where a lot of our interdisciplinary work occurs. I feel like I've learnt more about the other disciplines on outreach than anything else I've done before. (P2, Site 1, Interview)

Physiotherapists employed in multiprofessional clinics considered themselves fortunate to have unrestricted access to health practitioners from a range of professions. These participants had the freedom to choose when a client may be better serviced by one profession and not the other:

> We've got access to so many allied health professions here, so we can pick each other's brains. For example, someone might have a hand injury. If I'm not quite sure how to manage it, we've got one of the OTs that's worked a lot in hands, so we can immediately access her experience with dealing with that. (P20, Site 1, Interview)

3.2.2. Sub-theme 1.2: Co-location

Physiotherapy private practitioners who worked at sites that were co-located with other health services considered this arrangement to help facilitate IPCP. Co-location refers to health services that are situated in the same physical space (for example, an office, building or campus), although they are not necessarily fully integrated with one another. Participants who worked in close physical proximity to health practitioners from other professions through co-location declared that it

was a convenient way of sharing knowledge and resources with each other: "We've got professions like dietetics and psychology in our complex … so we invite them over and have lunch and we do in-services with them." (P28, Site 9, Interview) Many participants reported that they were more inclined to refer their clients to health practitioners with whom they were co-located, rather than seek that profession's services from another clinic:

> I think you're certainly far more likely to use or refer to health services that are co-located … because they're right at your doorstep. I suppose you've got that trust with them … and … I suppose you make an active effort to build that relationship a little bit more. (P11, Site 7, Interview)

Many participants acknowledged that some interprofessional relationships may not have developed if they were not co-located with other health practitioners:

> We've got a really good relationship with the pharmacist in the shop next door. To be honest, he's probably one of my most commonly used other health professionals that I would ask opinions for. I know way more about medications now than I would have ever … know. It's helped so many patients as well. I wouldn't have ever learnt or known about half the medications if I'd never really talked to him … a lot about it. That relationship probably wouldn't have developed if we weren't co-located. (P10, Site 3, Interview)

Participants explained how when health practitioners work in the same location, client care can be more easily coordinated. Most participants indicated that referrals between co-located health professionals were common practice:

> In my previous workplace, I was co-located with a podiatrist and an osteopath. It was awesome. Sometimes … I would send business to the podiatrist, the podiatrist would send business to me, and the osteopath and I would talk, and send business back and forth to each other. (P5, Site 10, Interview)

Although most participants regarded co-location as having the potential to facilitate IPCP, many physiotherapists asserted that close physical proximity alone was not enough to ensure effective IPCP: "I'm sure co-location would help facilitate interprofessional collaboration. It wouldn't be the only step, but it would definitely help and go a long way, I think." (P1, Site 10, Interview) Several participants working at sites co-located with other health services that employed clinicians from different professions claimed this had little influence on their IPCP:

> I don't think being co-located with other health services has made a difference to my practice to be honest. It probably should, but I don't think it has for me. I don't think I've … felt like if … someone needed psychology, I haven't … just gone around the corner and chatted to the psychologists right next door. Same goes for podiatry. I know there's podiatrists just a stone's throw away across the road, but I think … even if it's a short distance, as soon as it's … outside the practice, it's a completely different story. (P12, Site 9, Interview)

Observation of physiotherapy private practitioners suggested that co-location of study sites with other health services had a varying influence on IPCP. Some private practice sites appeared to work closely with health practitioners to whom they were co-located, while other sites did not seem to utillise the co-located health services to their full potential. Site seven was located on a designated health campus, situated between an exercise physiology clinic on one side and a podiatry service on the other. Internally, two sliding doors had been erected, facilitating convenient access between the physiotherapy and exercise physiology clinics, and the physiotherapy and podiatry clinics. The passageway between physiotherapy and exercise physiology was open during operating hours and routinely used to facilitate informal interprofessional interaction:

> It's really beneficial having them [the exercise physiologists] in-house here so that you can have that face-to-face interaction and actually … see what patients have been up to in the gym. So, even if it's … casual communication in passing, just checking in on how someone's going or even walking through … and watching someone [a patient] for a little bit and speaking to whoever's working in there. (P13, Site 7, Interview)

The internal door between physiotherapy and podiatry, however, remained closed and the passageway had been obstructed by objects placed on the floor in front of it within the physiotherapy clinic. As a possible consequence of this action, no face-to-face interprofessional contact was observed between physiotherapists at site seven and the podiatrists in the adjoining clinic during fieldwork. It was unclear why, and for how long, these objects had been placed in front of this passageway.

3.2.3. Sub-theme 1.3: interior architecture

The interior architecture of private practice sites was observed to influence the ease and frequency of interprofessional communication. At several sites, the use of informal shared spaces was high. These spaces were seen to enhance IPCP by promoting socialisation and building rapport among team members. The break room at site one was a medium-sized space where many staff, including physiotherapists, would attend to complete non-clinical tasks, such as typing notes on their laptop computers. The room had plenty of seating capacity in the form of stools and lounges:

> I really like going there [the break room] to do charts because it's a … quiet space away from patients where I can … focus and get my work done without interruption. It's also nice to have the opportunity to interact with colleagues in a more relaxed setting … where we can chat about cases, bounce ideas off each other and … take a break from the intensity of the clinical environment. (P2, Site 1, Interview)

Although the break room at site one created an informal interprofessional team environment, using this space for work-related duties was strongly discouraged by senior staff at a formal practice meeting. The chairperson of the meeting indicated that the stools and lounges in the break room did not have sufficient ergonomic clearance from a work health and safety perspective and advised all health practitioners to complete computer tasks in profession-specific areas, potentially limiting subsequent opportunities for IPCP.

Several multiprofessional sites included open-plan workspaces, such as gyms, that had potential to bring multiple health practitioners together in closer proximity for IPCP. At most sites however, physiotherapists were predominately confined to their individual treatment spaces with the curtains or offices doors closed when they were in client consultations. Often, physiotherapists emerged only temporarily from their treatment area when there was a need to acquire specific items, such as a printed exercise handout. At site four, the exercise physiologist frequently brought clients to the shared gym area; the physiotherapists however, used this space with a comparably smaller proportion of their clientele. At site one, physiotherapists, exercise physiologists and occupational therapists mostly used the large therapy gym, while psychologists, dietitians and social workers tended to access enclosed offices, thereby limiting visibility and making it difficult for other health practitioners to connect with them.

3.2.4. Theme 2: technological advancements

This theme describes how advancements in information technology can support IPCP. These factors were perceived to help physiotherapy private practitioners secure more time to engage in collaborative processes. Clinical information systems, such as Medical-Objects (https://www.medicalobjects.com/), were perceived to facilitate communication and coordination among health practitioners from different professions and organisations. Medical-Objects enables health

practitioners to send and receive client information securely and in compliance with Australian privacy and security standards. Client records and clinical data can be accessed and shared electronically between health practitioners via Medical-Objects:

> When you have to fax and upload and restore documents, it is time consuming. The Medical Objects system is a game changer. When you can press one button and it imports all that patient's data, I think there's no reason why we can't make time for that. The introduction of Medical-Objects I think has been great for interdisciplinary collaboration. (P23, Site 4, Interview)

Similarly, shared radiology portals were perceived to increase efficiency by reducing the need for duplicate imaging studies. These portals allowed a wide range of health practitioners access to existing images, rather than ordering new ones, which saved time and reduced costs:

> They've recently created a big … private radiology portal, where you can log in and access client x-ray reports and scans so that you don't have to call around to each practice trying to chase where they are. It all just gets uploaded onto one system. So, I find that that's really good to have access to all the reports that you need to. It's a massive time saver. (P1, Site 10, Interview)

Internal communication systems were also used at multiprofessional sites to facilitate time-efficient interprofessional communication among team members: "The internal memo system is great. I can just send an internal message to the GP next door to me rather than barge into their office because sometimes I can hear that they're busy with a client." (P22, Site 8, Interview) Some physiotherapists claimed that IPCP can be effective regardless of other health practitioners' location or time zone because technological advancements have made communication easier and more efficient:

> You can work along with as many other disciplines as you want … but it doesn't mean that we all have to be in the same physical space. Interprofessional communication can be over … Skype or Zoom or Teams … and you're still working with other disciplines. It shouldn't matter where you work. (P19, Site 10, Interview)

3.2.5. Theme 3: complex client presentations

This theme explores how complex client presentations in physiotherapy private practice can facilitate IPCP. Some client presentations, such as those involving multiple chronic conditions, were perceived to be more amendable to an interprofessional management approach, thereby promoting IPCP: "… there are certainly situations where a really coherent and collaborative approach is needed to help the patient recover, especially where someone's got a very complex situation, or they have complex physical and psychiatric illnesses." (P28, Site 9, Interview) A client's presentation was considered to impact participants' scope of practice by influencing what interventions physiotherapy private practitioners are permitted to perform, which, in turn, may promote IPCP. Participants reported that when a client's condition was outside their scope of practice, they often needed to refer the client to another health professional who had the necessary training and expertise: "When our resources and knowledge is exhausted, we need to be referring to … a specialist or someone else who has a bit more experience in that field." (P26, Site 3, Interview)

One participant stressed the importance of physiotherapy private practitioners assessing their knowledge and skills before providing care to ensure that it falls within their professional boundaries: "Good interprofessional practice is just being mindful and always questioning whether it's something that's within our scope, or if it is something that someone in another profession is better to offer." (P13, Site 7, Interview) The principal physiotherapist of a monoprofessional private practice suggested that experienced clinicians are more likely to have a better understanding of their practice parameters compared to less experienced clinicians:

> … different people have different capabilities, and everyone's got slightly different scopes. I think the very mature clinician knows very much what their scope is and where their boundaries are and where someone else's expertise is probably necessary. So, that group of clinicians knows exactly the right time when interdisciplinary practice is required. (P28, Site 9, Interview)

3.2.6. Theme 4:Positive professional reputation

This theme describes how the desire to develop and sustain a positive professional reputation in private practice influences the degree of IPCP between physiotherapists and other health practitioners. A good professional reputation had the potential to strengthen relationships with local health practitioners and attract more client referrals. This was also recognised as having financial implications for physiotherapy private practitioners:

> The thing with private practice is … your name is on the line. As a sole trader there's no one else to blame either. You have to do everything and anything to keep the hand that feeds happy. I want to have a good reputation. I want to keep him [the paediatrician] happy, so I make probably more of a concerted effort … to feed back. It sounds bad, but it's business. (P9, Site 2, Interview)

Several participants also highlighted the importance of client word-of-mouth to enhance physiotherapy private practitioners' professional reputation and promote IPCP. Participants claimed that when clients have positive dealings with physiotherapy, they are more likely to share their experiences with their general practitioner (GP), which can lead to increased client referrals:

> A truly positive GP-physio link is your patient. If the patient has a good experience, they're going to tell the GP. That's your best option for improving collaboration. If you don't treat your patient well, they'll tell their doctor. That word-of-mouth is really critical because the GP keeps hearing the same clinic name spoken of positively and then you get referrals. (P5, Site 10, Interview)

The growing role of social media in building brand awareness and enhancing professional reputation was highlighted by some participants. The social media presence of a physiotherapy private practice clinic was understood to positively influence IPCP by reaching more health practitioners from more professions, but also improving revenue streams by driving more referrals to physiotherapy:

> Health professionals in this community know [our clinic] as an entity. [The principal physiotherapist] has been very good at promoting the place on social media. I think that's the future. Getting your name out there on social media is definitely going to become more common practice … and I think not only will that be good for your business … but it will be good for interprofessional collaboration. (P6, Site 10, Interview)

4. Discussion

The aim of this study was to explore the facilitators of IPCP from the perspective of Australian physiotherapy private practitioners and expand on preliminary findings from an online survey[20] with a sample of physiotherapists employed in private practice sites within the NQPHN region. Four main themes characterised physiotherapy private practitioners' perspectives regarding the facilitators of IPCP: (a) close physical proximity; (b) technological advancements; (c) complex client presentations and (d) positive professional reputation.

This study highlights the significance of multiprofessional private practices in promoting IPCP for physiotherapists employed in these clinics. Participants employed in multiprofessional private practice sites reported having more opportunities to interact with health practitioners from other professions than those working as sole traders or in

monoprofessional clinics. The presence of practitioners from multiple professions working together in the same practice can facilitate interprofessional learning, which can lead to better understanding and appreciation of the roles and responsibilities of different professions.[36] When health practitioners from different professional backgrounds have a better understanding of each other's roles and responsibilities they are better able to work together to provide comprehensive and coordinated client care, which in turn may produce superior outcomes.[3] However, given that many physiotherapy private practitioners in Australia do not work in multiprofessional clinics,[7] it is necessary to explore the barriers to IPCP from the perspective of this group within the physiotherapy workforce.

Co-location of health services was regarded to be an efficient means of facilitating IPCP for physiotherapy private practitioners. The close physical proximity of health practitioners from different professions in one location intensifies informal interprofessional interactions and provides convenient opportunities to share knowledge and resources, and discuss clinical cases.[37] However, this study suggests that co-location alone is not enough to achieve successful IPCP, as effort and intentionality are required. The effectiveness of co-location in promoting IPCP may depend on various factors, such as the nature of relationships between health practitioners, workplace culture and the willingness of individual practitioners to engage in collaborative practice.[38] The nature of health services available in a building or campus may have also influenced the degree of IPCP in this study. For example, although co-location increased the frequency of interprofessional interactions between physiotherapists at site seven and the exercise physiologists with whom they were co-located, this arrangement did not appear to improve IPCP with the podiatrists working at the other adjacent clinic. It is possible that the limited interprofessional contact between physiotherapists and podiatrists could be attributed to various factors, including philosophical differences towards treatment orientation or individual factors such as personality conflicts or challenges arising from busy schedules, which might have hindered engagement and prioritisation of IPCP.[39] A more thorough examination of co-located health services is warranted before practical advice can be provided to current or prospective physiotherapy private practice owners who may be considering this option as a viable method to improve their collaborative arrangements.

The built environment, including the physical infrastructure and design of buildings, and the surrounding spaces, such as the arrangement of rooms, furniture and equipment, can have a significant impact on IPCP in health care.[40] The interior architecture of private practice facilities was observed to influence physiotherapists' ability to communicate and collaborate. In some clinics, the physical layout of the practice setting contributed to increased informal interaction between team members, regardless of professional background. Careful consideration should therefore be given to the design of physiotherapy private practices and other health care settings to facilitate IPCP. Providing shared spaces and open-plan workspaces may promote socialisation and increase visibility between health practitioners, potentially leading to improved IPCP.[40]

The findings from this study raise awareness of the potential for health information technology (IT) to facilitate IPCP. Many study participants indicated that IPCP can be successful despite other health professionals' geographic location or time zone due to recent technological innovations that have strengthened clinical information systems. Although health professionals working in regional, rural and remote areas may report more barriers to participating in IPCP than their urban counterparts,[41] this study provides preliminary evidence in support of IT software platforms to overcome some of these challenges. Technological innovations in health care were perceived by physiotherapy private practitioners to facilitate more efficient communication and support coordination of care efforts within and between health care organisations. Technologies used to manage and share health information allowed physiotherapists in private practice to securely send and receive client communication, access and share clinical data and records electronically, and reduce the need for duplicate investigations and imaging studies. Digital technology has the capacity to transform IPCP by improving communication, facilitating shared decision-making and joint consultations, and increasing access to health care services.[42] As digital technologies continue to advance and become more integrated into health care systems, they may play an increasingly prominent role in the development of future health policies and programs aimed at enhancing IPCP and optimising client outcomes.[43]

Physiotherapists in the present study regarded IPCP as essential in the management of clients with chronic and complex care needs. Senior physiotherapists in this study reported possessing a greater understanding of their scope of practice and considered themselves more likely to recognise the need for the initiation of interprofessional contact. When clients' health care needs were perceived to be beyond a physiotherapists' scope of practice or their capabilities and competencies, participants often referred these clients to other health professionals with the necessary training and expertise, thus promoting IPCP. For IPCP to be successful, health practitioners, including physiotherapists, must be responsive to the unique needs and circumstances of each individual client.[44] These findings may highlight a need for ongoing professional development to expand the knowledge and skills of less experienced physiotherapists to enable them to better recognise when to seek IPCP for their clients. Gaining a deeper understanding of the client perspective is critical to improving the overall quality of IPCP in physiotherapy private practice.

The current study suggests that establishing a positive professional reputation strengthens interprofessional relationships, which ultimately attracts more client referrals and subsequently increases business revenue. The importance of building strong connections with other health practitioners such as general practitioners, who are often a major source of referrals to physiotherapy,[45] was also highlighted. Physiotherapists working in private practice need to navigate a delicate balance between prioritising client-centred care and fostering effective interprofessional communication, to produce positive client outcomes, with the need to remain financially viable as a business entity. Examining whether financial considerations, such as competition for clientele or the rules of funding schemes, present barriers to IPCP for physiotherapy private practitioners is an area worthy of future study.

The main limitation of the current study is a potential volunteer bias. Although physiotherapy private practice sites were carefully selected to ensure that recruited participants were 'information-rich',[27] those eligible for study inclusion were chosen from a list of survey respondents who expressed interest in further research.[20] Physiotherapy private practitioners may have therefore agreed to participate in the study because they were either interested in engaging in, or held strong opinions towards, IPCP. This study, however, deepens our understanding of IPCP from the perspective of an understudied population, physiotherapists working in private practice in regional and rural Australia. The presence of the Hawthorne effect (HE) may be considered an additional study limitation. The HE refers to the phenomenon whereby study participants modify their behaviour in response to being observed or studied, which can bias the collected data.[46] However, several steps were taken to ensure that the data collected was a true reflection of the participants' behaviour and experiences, rather than being influenced by the HE. For example, unobtrusive observation methods, such as dressing and behaving in ways that aligned with the observed setting,[28] were used to reduce the impact of the observer on the behaviour of research participants. Additionally, the researcher built strong rapport with the participants and ensured they were aware of the study purpose and informed that their behaviour was being observed. This may have helped to reduce any pressure to conform to the expectations of the researcher.

5. Conclusion

This study provides valuable insights into the facilitators of IPCP from the perspective of physiotherapy private practitioners. By identifying these facilitators, this study sheds light on how contextual factors, including the organisational characteristics of physiotherapy private practices, influence and shape the process of IPCP and contributes towards strengthening IPCP within the Australian physiotherapy private practice setting. Emphasising close physical proximity of multiple health practitioners, leveraging technological innovations, recognising the value of IPCP for clients with chronic and complex care needs, and cultivating positive professional reputations can promote effective IPCP involving physiotherapy private practitioners. Ultimately, embracing these facilitators can enhance client-centred care, improve health outcomes and optimise resource utilisation. The findings from this research may be used to guide the development of innovative strategies that will support robust and sustainable models of IPCP in the physiotherapy private practice setting.

CRediT authorship contribution statement

Jack Seaton: made a substantial contribution to conception and design of the study, to data acquisition, data analysis and interpretation, and prepared the original draft manuscript. **Anne Jones:** made a substantial contribution to conception and design of the study, data analysis and interpretation, and revised draft manuscripts. Catherine Johnston: made a substantial contribution to conception and design of the study and revised draft manuscripts. **Karen Francis**: revised draft manuscripts and provided mentorship to the research team. All authors read and approved the final manuscript.

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Appendix A. Supplementary data

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Appendix 6: Peer-reviewed publication – 'The barriers to interprofessional collaborative practice: Perspectives from Australian physiotherapy private practitioners'

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Abstract

Background: Despite the growing presence of physiotherapy private practitioners within Australia's healthcare workforce, little is known about their perspectives of IPCP. This study aims to explore the barriers to IPCP from the perspective of Australian physiotherapy private practitioners. **Methods:** Semi-structured interviews were conducted with 28 physiotherapists and 64 hours of observation was completed in 10 private practice sites in Queensland, Australia. Interview and observation data were pooled and analysed using reflexive thematic analysis. **Findings:** Data analysis produced five themes that characterised physiotherapists' perspectives of IPCP: a) competition for clientele, b) personal attitudes and beliefs, c) time constraints and work schedules, d) geographic location, and e) rules of funding schemes. **Conclusion:** The findings from this study suggest that implementing IPCP in the Australian physiotherapy private practice setting presents several challenges. Financial concerns, such as physiotherapy private practitioners' perceived need to compete for clientele, were significant barriers to IPCP. The introduction of financial incentives and adoption of alternative payment models may be necessary to provide physiotherapy private practitioners with a clear motivation to engage in IPCP. The need for more formal opportunities to bring health practitioners from diverse professional backgrounds together to gain new insights and knowledge of other professions' expertise and challenge their own assumptions was also highlighted.

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The Barriers to Interprofessional Collaborative Practice: Perspectives from Australian Physiotherapy Private Practitioners

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Abstract

Background: Despite the growing presence of physiotherapy private practitioners within Australia's healthcare workforce, little is known about their perspectives of interprofessional collaborative practice (IPCP). This study aims to explore the barriers to IPCP from the perspective of Australian physiotherapy private practitioners.

Methods: Semi-structured interviews were conducted with 28 physiotherapists and 64 hours of observation was completed in 10 private practice sites in Queensland, Australia. Interview and observation data were pooled and analyzed using reflexive thematic analysis.

Findings: Data analysis produced five themes that characterized physiotherapists' perspectives of IPCP: a) competition for clientele, b) personal attitudes and beliefs, c) time constraints and work schedules, d) geographic location, and e) rules of funding schemes.

Conclusion: The findings from this study suggest that implementing IPCP in the Australian physiotherapy private practice setting presents several challenges. Financial concerns, such as physiotherapy private practitioners' perceived need to compete for clientele, were significant barriers to IPCP. The introduction of financial incentives and adoption of alternative payment models may be necessary to provide physiotherapy private practitioners with a clear motivation to engage in IPCP. The need for more formal opportunities to bring health practitioners from diverse professional backgrounds together to gain new insights and knowledge of other professions' expertise and challenge their own assumptions was also highlighted.

Keywords: collaboration, interdisciplinary, physical therapy, primary care, qualitative

Introduction

Interprofessional collaborative practice (IPCP) refers to the interactions and relationships between and among health practitioners from differing professional backgrounds [1]. Utilising IPCP enables health practitioners to fully apply their knowledge, skills, and abilities, increasing the likelihood of safe, timely, efficient,

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effective, and equitable patient care provision [2,3]. Effective IPCP contributes to superior patient outcomes, facilitates cost-efficient health care, and increases patient and practitioner satisfaction [3]. Additionally, IPCP may address the difficulties associated with recruitment and retention of rural health practitioners by alleviating professional isolation [4,5]. There are numerous challenges, however, to achieving effective IPCP in clinical practice. Communication problems, power imbalances, and a lack of awareness of other health professions' expertise have the potential to hinder IPCP [6,7].

Physiotherapy represents one of the largest allied health professions in Australia, accounting for more than 40,000 qualified practitioners [8]. In Australia, physiotherapists are employed in both the public and private sectors and in metropolitan, regional, rural, and remote locations [9]. Most physiotherapists work primarily as clinicians and practice in a range of settings including hospitals, private practice, community and rehabilitation centers, residential aged care, and sporting organizations [9]. The remainder of Australian physiotherapists assume principal roles in areas such as academia and management [9].

In recent decades, there has been a significant rise in the proportion of Australian physiotherapists working in private practices, which are professional businesses or for-profit organizations that are not directly funded through government departments [10]. Estimated to be less than one-third of all physiotherapists in 1975 [11], those working in private practice are now reported to account for 70 percent of the total physiotherapy workforce in Australia [9]. Since 2013, the physiotherapy private practice industry has grown from being a AUD$1.5 billion industry made up of approximately 4,200 businesses [12] to a nearly AUD$2.2 billion industry made up of more than 7,000 businesses [13]. Physiotherapy services in private practice are predominately administered to consumers via private health insurance packages in a fee-for-service environment and supplemented by the Australian Government's Medicare Benefits Schedule (MBS) and out-of-pocket payments [13]. The strong growth of the physiotherapy private practice industry in Australia may reflect financial constraints on the public health care system, as well as increasing demand for access to physiotherapy in the community [14].

The predominant service delivery model in the Australian physiotherapy private practice setting is the small-scale monoprofessional clinic [9,15]. These clinics typically employ only one professional group or rely on a sole practitioner model of care. Collaborative practice, which is crucial for optimal care, is most effectively achieved through formal team structures and frequent informal communication [16,17]. However, physiotherapists working in monoprofessional clinics may have limited opportunities for unplanned informal contact and spontaneous interaction with health practitioners from different professions [18]. Although physiotherapy private practitioners consider IPCP to be necessary to provide adequate patient care, their interprofessional interactions have been reported as infrequent and mainly limited to tasks such as receiving referrals from, and sending client correspondence to, a small number of other health professionals [15]. Physiotherapy private practitioners' understanding of what constitutes IPCP may therefore not align with models of best

practice that, for example, advocate for regular multiprofessional team meetings to discuss specific patients [6]. This lack of formal participation in IPCP may lead to fragmented care and poor patient outcomes [2,3].

Physiotherapists have been recognized as crucial members of collaborative models of care due to their skills in addressing issues associated with an increased chronic disease burden, an ageing population, rapidly rising health care costs, and human resource shortages [19–21]. However, research investigating IPCP from the perspective of physiotherapists, particularly those working in private practice, is scarce [7]. Given that health practitioners, including physiotherapists employed in monoprofessional private practices, may work in isolation from other clinicians or in workplaces that do not conform to formal team-based processes, engaging in IPCP may not be feasible [22,23]. Failure to acknowledge the complexity and specificity of the physiotherapy private practice context may lead to poor practices and misunderstandings regarding IPCP. To inform the development of effective and sustainable strategies for promoting successful IPCP in the physiotherapy private practice setting, it is essential to gain a comprehensive understanding of the perspectives of physiotherapists working in this sector, including information regarding the barriers to implementing collaborative practice models. This knowledge will ensure that strategies developed are tailored to the needs of this growing cohort within the Australian physiotherapy workforce. The aim of this study was to explore the barriers to IPCP from the perspective of physiotherapy private practitioners.

Methods

Study design

This study was part of a larger sequential explanatory mixed methods project that sought to lay the theoretical foundation for education, practice, research, and policy regarding IPCP in the physiotherapy private sector [7,15]. Interpretive description (ID) was chosen as the methodological framework for this study due to its unique ability to facilitate the exploration and interpretation of complex social phenomena, particularly in healthcare settings [24]. As an inductive analytical approach explicitly built on constructivist epistemological assumptions, ID minimizes the distance between the researcher and participant and allows for the participants closest to the phenomena to share their voices, experiences, and interpretations of their lived reality [25]. Ethics approval was obtained from the James Cook University Human Research Ethics Committee (H7951).

Theoretical framework and researcher positionality

The study was conducted from a social constructivist perspective, recognizing that knowledge pertaining to IPCP emerges through the interaction and shared experiences of physiotherapy private practitioners [26]. Complexity science provided the structural lens to facilitate understanding of the intricate, non-linear interactions and emergent outcomes within the multifaceted environment of physiotherapy private practice in Australia [27]. This scientific approach offers a framework to examine how diverse stakeholders, adaptive processes, and fluctuating conditions

collectively influence the dynamics of IPCP [28]. The first author's professional background as a registered physiotherapist brought to the study an emic perspective, enabling an enriched analysis through firsthand knowledge of the inherent challenges in private practice and the complex forces shaping the provision of physiotherapy services in this setting [29]. This dual role as a researcher and practitioner cultivated an empathetic understanding and personal motivation to see improvements in interprofessional collaborative processes in physiotherapy private practice.

Participants

Participants were physiotherapists registered with the Australian Health Practitioner Regulation Agency (AHPRA) working at private practice facilities in the region covered by the Northern Queensland Primary Health Network (NQPHN). Spanning an area of 510,000 square kilometers, this region is home to an estimated 730,000 people [30]. Most of the population are located within the major regional centers of Cairns, Mackay, and Townsville, while approximately 8 percent of inhabitants live in remote and very remote areas [30]. Study participants were required to be: a) employed in a physiotherapy private practice facility within the NQPHN region for no less than one month; b) over the age of 18 years and willing to consent to the study; and c) proficient in spoken and written English.

Participant recruitment was informed by the findings of an online survey conducted in the first phase of the larger mixed methods project [15]. Physiotherapy private practitioners ($n = 31$) who expressed interest in participating in further research by providing their contact information on their submitted online survey were emailed and provided with a participant information sheet detailing the study purpose. Participants were selected on a first-come-first-served basis [31]. This approach was used to efficiently recruit participants who were readily available and willing to participate in the study. A semi-purposive stratified element was also used to ensure physiotherapists worked at a range of private practice sites, varying with respect to organizational model, service provision, team composition, and geographic location [31]. Participant recruitment ceased once these purposive criteria were met.

Physiotherapists ($n = 10$) from a total of ten different private practice sites within the NQPHN region agreed to participate in the study. The physiotherapy private practitioners who agreed to participate in the study were then asked to identify other physiotherapists employed at their facility to take part in an interview through a process of snowball sampling. Invitations to participate in an interview were sent to all identified individuals ($n = 29$), of which 18 physiotherapists agreed.

Data collection

Participant demographics

Demographic information was collected from the participants via a paper-based questionnaire. The demographic data was collected to provide context for participants' responses and included details on their age, gender, entry-level physiotherapy qualification, and years of clinical experience as physiotherapists.

Interviews

Semi-structured interviews were conducted face-to-face individually in private consultation rooms at each private practice facility and ranged from 16 to 117 minutes (mean = 39 minutes). Individual semi-structured interviews allowed for the exploration of each participant's experiences and perspectives on IPCP, while ensuring that the data collected were relevant to the research aim. The interview guide (see Appendix) utilized in the study was developed by the multiprofessional research team and its contents were informed by the insights gained from an online survey conducted earlier [15]. To ensure that the interview guide effectively focused on the perceived barriers to IPCP in the physiotherapy private sector, the interview questions and exploratory probes were pilot tested with two physiotherapy private practitioners with over 10 years of clinical experience. Memos were immediately recorded after each interview to ensure that a reflexive stance was maintained in relation to the research and participants [32].

All participants provided written informed consent and agreed to the interview being audio-recorded and transcribed. Audio-recorded interviews were transcribed verbatim with the assistance of secure online transcription software (https://otter.ai). Prior to analysis, participants were given the opportunity to review and make corrections or omissions to the transcripts to ensure the accuracy and authenticity of the data [33].

Observation

Non-participant, observational data was collected to better understand and capture the context within which IPCP occurs in physiotherapy private practice. This involved the researcher (JS) attending study sites and observing the activities, events, and interactions taking place, without participating in them [34]. Upon the initial visit to each physiotherapy private practice site, an informal meeting was held to describe the study to all staff members. Physiotherapists and other private practice staff (for example, health practitioners from other professions, administrative assistants) were informed that participation was voluntary and at any point during the fieldwork, they could decline to participate or ask the researcher to leave the site. All staff at each site verbally consented to the observations. Consultations between practitioners and clients were not observed to ensure client privacy. The research team strictly adhered to ethical guidelines and did not record individual client information or have access to client charts.

In total, 64 hours of observational data were collected, with JS spending one to four days at participating sites. Observation occurred at different times of the day and encompassed a range of structured and unstructured events. Activity was observed in public and staff-only shared spaces throughout the facility, including conference rooms, offices, and hallway corridors. Observations were made at an unobtrusive distance, but close enough to clearly hear conversations between physiotherapists and other practice staff. Direct observation of IPCP at one study site was not possible because the physiotherapist was operating as a mobile sole practitioner with no fixed workplace address. The primary purpose of these observations was not to obtain direct

data, but rather to inform subsequent participant interviews. The observations were important for capturing the workplace environment, understanding the context of physiotherapy private practice, and identifying evidence of IPCP in routine practices.

Preliminary fieldnotes were handwritten in the form of jottings [35] during the observations at each site, which were typed into a Microsoft® Word document in more detail as soon as possible after each fieldwork session. Observed interactions, including the interaction type, who was involved, where the interaction occurred, and how long the interaction lasted, were noted. During periods of observations, JS also held brief, informal conversations with physiotherapists to explore emerging questions and ideas. For example, physiotherapists were sometimes asked to clarify what had just happened or to explain their actions as they were carrying out a task. Informal conversations were not audio-recorded. Instead, JS wrote down the main messages from these conversations. Fieldnotes incorporated reflections by the first author that included personal feelings, actions, and responses to the situations observed [36,37] and were peer-reviewed by the research team.

Data analysis

Reflexive thematic analysis (RTA) was employed to facilitate the identification of patterns or themes in the pooled interview and observation data [38]. Reflexive thematic analysis is an inductive, iterative approach that allows for flexible interpretation of the data, enabling investigation into both surface-level meanings and underlying assumptions.

The first analytic step was familiarization with the data through careful and repeated reading of interview transcripts, memos, and fieldnotes (including observational and informal conversation notes), recording casual observations of initial trends. Next, the data were analyzed line-by-line to identify initial codes during an open coding process. For the first five interview transcripts, coding was completed independently by two authors (JS and AJ) to sense-check ideas and explore multiple assumptions of the data in a reflexive manner. Crucial to this process was the authors' shared understanding of terminology and concepts relevant to IPCP [38]. After this, codes were consolidated and grouped into themes relating to the barriers to IPCP. Themes were refined and named collectively by the research team. Endorsed themes were incorporated into a comprehensive description and populated with relevant quotes to ensure grounding in the data and representation across participants. This approach provided an integrated account of IPCP from the participants' perspective. Data were managed using NVivo software (QSR International; https://www.qsrinternational.com).

Results

Participants

Individual interviews were conducted with 28 physiotherapists (Table 1) between March 2020 and February 2021. The mean age of interview participants was 33 years (range 21–61 years) and they had approximately nine years of clinical experience (range 1–38 years).

Table 1: Demographic and workplace information of participants

Participant number	Gender	Highest tertiary qualification	Location of entry-level training	Physiotherapy experience (years)	Classification of work-place location (MMM)	Principal physiotherapist	Organizational model	Co-located
1	Female	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	No
2	Female	Bachelor degree	New Zealand	3	MMM 2	No	Multiprofessional	No
3	Male	Bachelor degree	Australia	9	MMM 2	No	Multiprofessional	No
4	Female	Bachelor degree	Australia	2	MMM 2	No	Monoprofessional	Yes
5	Female	Masters degree	Australia	10	MMM 2	No	Multiprofessional	No
6	Female	Bachelor degree	Argentina	3	MMM 2	No	Multiprofessional	No
7	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
8	Male	Bachelor degree	Australia	7	MMM 2	No	Multiprofessional	No
9	Female	Bachelor degree	Australia	11	MMM 2	Yes	Monoprofessional	No
10	Female	Masters degree	Australia	13	MMM 2	Yes	Monoprofessional	Yes
11	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
12	Male	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	Yes
13	Female	Bachelor degree	Australia	25	MMM 2	No	Monoprofessional	Yes
14	Male	Bachelor degree	Australia	2	MMM 4	No	Multiprofessional	Yes
15	Male	Graduate certificate	Australia	10	MMM 4	No	Multiprofessional	Yes
16	Male	Masters degree	Australia	12	MMM 2	Yes	Monoprofessional	Yes
17	Male	Bachelor degree	Australia	6	MMM 2	No	Multiprofessional	Yes
18	Male	Bachelor degree	Australia	5	MMM 2	No	Multiprofessional	Yes

Table 1 (continued)

Participant number	Gender	Highest tertiary qualification	Location of entry-level training	Physiotherapy experience (years)	Classification of work-place location (MMM)	Principal physiotherapist	Organizational model	Co-located
19	Female	Masters degree	Estonia	5	MMM 2	No	Multiprofessional	No
20	Female	Bachelor degree	New Zealand	19	MMM 2	No	Multiprofessional	No
21	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
22	Male	Graduate diploma	Australia	38	MMM 5	No	Multiprofessional	No
23	Male	Masters degree	Australia	15	MMM 4	Yes	Multiprofessional	Yes
24	Male	Masters degree	Australia	21	MMM 5	Yes	Monoprofessional	Yes
25	Female	Masters degree	Ireland	14	MMM 2	Yes	Multiprofessional	No
26	Female	Bachelor degree	Australia	1	MMM 2	No	Monoprofessional	Yes
27	Male	Masters degree	Australia	1	MMM 2	No	Monoprofessional	Yes
28	Male	Masters degree	Australia	15	MMM 2	Yes	Multiprofessional	Yes

Notes: MMM, Modified Monash Model

Participants worked across 10 private practice facilities (Table 2) within the NQPHN region. Six of these facilities were co-located with at least one other health service. Co-location refers to health services that are situated in the same physical space (for example, a building or campus) but not necessarily fully integrated with one another. Seven participants identified as the principal physiotherapist at their private practice facility. In the Australian physiotherapy private practice setting, a principal physiotherapist is typically owner or director of the clinic. Principal physiotherapists are responsible for the overall management and administration of their practice, which includes overseeing the financial aspects of the business, as well as hiring and managing other physiotherapists and support staff.

Table 2. Characteristics of participating physiotherapy private practice sites

Site no.	Organizational model	Primary physiotherapy clinical area	Physiotherapy services provided[a]	Health professions employed	Co-located health services	Classification of facility location (MMM)[b]
1	Multiprofessional	Neurological	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology ($n = 2$) Nursing ($n = 1$) Nutrition and dietetics ($n = 4$) Occupational therapy ($n = 8$) Physiotherapy ($n = 6$) Psychology ($n = 4$) Social work ($n = 1$) Therapy assistant ($n = 5$)	Nil	MMM 2
2	Monoprofessional	Paediatrics	NDIS Telehealth	Physiotherapy ($n = 1$)	Nil	MMM 2
3	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Physiotherapy ($n = 3$)	Dental clinic General practice clinic Pathology Pharmacy Podiatry	MMM 2
4	Multiprofessional	Musculoskeletal	DVA Medicare CDM NDIS Work injury compensation	Exercise physiology ($n = 1$) Physiotherapy ($n = 4$)	Occupational therapy Speech pathology	MMM 4
5	Monoprofessional	Musculoskeletal	DVA Medicare CDM Work injury compensation	Physiotherapy ($n = 1$)	Massage therapy Podiatry	MMM 5
6	Multiprofessional	Pain	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Exercise physiology ($n = 1$) Medicine ($n = 1$) Occupational therapy ($n = 1$) Physiotherapy ($n = 2$) Psychology ($n = 1$)	Ear, nose and throat surgery clinic Obstetrics and gynaecology clinic Ophthalmology clinic Optometry Private hospital Psychology Speech pathology	MMM 2

Table 2. (continued)

Site no.	Organizational model	Primary physiotherapy clinical area	Physiotherapy services provided[a]	Health professions employed	Co-located health services	Classification of facility location (MMM)[b]
7	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Physiotherapy ($n = 9$)	Exercise physiology General practice clinic Massage therapy Orthopaedic surgery clinic Pathology Pharmacy Podiatry Psychology	MMM 2
8	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Work injury compensation	Nursing ($n = 3$) Medicine ($n = 9$) Physiotherapy ($n = 1$) Psychology ($n = 1$) Social work ($n = 1$)	Nil	MMM 5
9	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology ($n = 3$) Occupational therapy ($n = 1$) Physiotherapy ($n = 6$)	Audiology Cardiology clinic General practice clinic Paediatric clinic Pharmacy Private hospital Psychology	MMM 2
10	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Massage therapy ($n = 1$) Physiotherapy ($n = 6$)	Nil	MMM 2

Notes: 1. CDM, Chronic Disease Management; DVA, Department of Veterans' Affairs; GP, general practice; MMM, Modified Monash Model; NDIS, National Disability Insurance Scheme; [a] As denoted on Australian Physiotherapy Association 'Find a Physio' search tool (https://choose.physio/findaphysio). [b] The MMM classification system categorizes different geographical areas in Australia based on population size and relative remoteness. It consists of seven categories, with Modified Monash category 1 representing metropolitan areas and Modified Monash category 7 representing very remote communities.

Themes

Reflexive thematic analysis of the data produced five overarching themes pertaining to physiotherapy private practitioners' perspectives on the barriers to IPCP: a) competition for clientele, b) personal attitudes and beliefs, c) time constraints and work schedules, d) geographic location, and e) rules of funding schemes.

Competition for clientele

This theme describes how physiotherapy private practitioners' perceived need to protect their income can present barriers to IPCP. Many participants admitted that protecting and preserving their income was often a higher priority than IPCP. Referring clients to health professionals working at external organizations was perceived to result in lost clientele:

> It's private practice, it's a competition. If you don't see people … and if they want to go to someone else instead of you, then you're not making money and you don't have a job and you can't employ other people. So, do we really want to involve … other professions? (P9, Site 2, Interview)

> Very few people willingly hand over their patient … and refer them to another clinic because we're regarded as competition for each other sometimes unfortunately, so then nothing collaborative happens. (P5, Site 10, Interview)

General practitioners' referral practices were perceived to have significant bearing on physiotherapy private practitioners' ability to generate income. Hence, there was a perceived need for physiotherapists to be mindful of how they conveyed information to general practitioners (GPs):

> Because we get that steady stream of patients being referred from doctors, you don't want to annoy them or call them out for things that they shouldn't be doing. If I email or send a letter to a doctor telling them all the things that I think they've done wrong, do … they then refer patients to another physio clinic? If I call them out for giving a patient poor advice, I might lose the next patient … so it's a tough balance. (P14, Site 4, Interview)

Various participants postulated that IPCP may be strengthened between physiotherapists and GPs if the two professions worked in the same clinic. However, some participants believed this would have significant financial implications. These participants argued that other GPs in the community would not refer to a physiotherapist working at a general practice clinic due to their own perceived fears that referred clients would begin seeing a general practitioner (GP) who worked with the physiotherapist:

> I had a doctor surgery approach me and say, "we would love you to come and work for us in our practice as our … physio," but I knew

> I would immediately eliminate people who didn't like that doctors' surgery … or didn't agree with it. They wanted their doctors to be able to refer directly to me in the clinic, but that would mean any other clinic would not refer to me. Guaranteed. They would not. They won't refer to an allied health professional in another doctor practice. No way. They'd rather farm it out to … a physio group … rather than risk losing the patient to a doctor in that practice. (P5, Site 10, Interview)

Several physiotherapists working in multiprofessional centers believed that their site employed enough health practitioners from different professions to demonstrate effective IPCP without the need for collaboration with external agencies. Some participants who worked in multiprofessional private practices considered referrals to health professionals outside of their clinic to constitute unnecessary and avoidable financial risk:

> In private practice it's all about keeping the business afloat. You need to earn your way here, so you can't be sending people willy-nilly [haphazardly] to other practices because they may not come back to you. I think having so many professions under the one roof here … helps prevent that from happening too much. (P20, Site 1, Interview)

Despite working alongside an exercise physiologist in a multiprofessional clinic, one physiotherapist indicated they occasionally withheld referrals from the in-house exercise physiology service to personally reap the financial benefits:

> It's probably a little bit of a control freak point of view, but I'd rather take someone to the pool or to the gym myself rather than refer them to exercise physiology. The financial benefits are obviously there if I take someone myself. (P18, Site 6, Interview)

Other participants outlined personal reasons that may influence low levels of collaboration with health practitioners from other professions in the private health sector:

> I think we don't use other professions in private practice as much as we could because you're trying to keep that client base in your own clinic and not refer away from yourself. Most physios in private practice will be paid on a percentage of … billings basis, so as much as that doesn't sound ethically … or morally correct, people have bills to pay, and they're inclined to empty a spot in their diary to divert that income out of your practice to someone somewhere else. It's definitely the elephant in the room. You're not taught to think like that, but … people have mortgages, people have kids. In the end, if you're worried that you're not going to make a good enough income … you're going to do everything you can to try and keep that income. (P15, Site 4, Interview)

> I think there's financial reasons that people work in silos … for physios [physiotherapists], especially. Sure, you can work for somebody in a big multidisciplinary clinic and have better collaboration, but you might not get paid very much because your boss takes a percentage of your billings. Whereas working for yourself and running your own business, you can run it exactly how you want … and make more money. (P5, Site 10, Interview)

Personal attitudes and beliefs

This theme explores how personal attitudes and beliefs towards health practitioners from different professions can create barriers to effective IPCP. Several physiotherapists were critical of the way medical practitioners carried out their duties. Participants reported that this contributed to a lack of respect for, and trust in, their colleagues from the medical profession:

> I've worked with doctors who don't seem to take musculoskeletal conditions seriously and … they don't order the right tests and they don't listen to patients' concerns and they're … quick to dismiss any advice from … physios [physiotherapists]. It's frustrating because we're all working towards the same goal of helping the patient, but it feels like we're not on the same page. (P18, Site 6, Interview)

During an in-service at Site 10, whereby a senior physiotherapist was presenting information on men's health, the urologist who had performed surgery on the physiotherapist's client was heavily criticized for their perceived lack of communication with the client. This physiotherapist expressed frustration that the urologist had not informed the individual undergoing surgery of the potential complications and risks: "That information needs to be disclosed from the outset … before the patient even consents to the procedure. It's part of a surgeon's job to outline all the risks" (P5, Site 10, Fieldnote). The physiotherapist appeared to place sole responsibility on the treating medical specialist in delivering the client this information, rather than suggest the need for IPCP, and did not indicate whether other health practitioners may have been able to perform this task.

The perceived lack of competence of some health practitioners from other professions contributed to a reluctance to engage in IPCP for many participants. At several study sites, medical mismanagement of clinical cases strongly featured in practice meetings or educational in-services. Medical officers working in the emergency department at the local public hospital near Site 4 were condemned at a weekly in-service for discharging a person who presented with posterior neck pain following a sporting trauma, in which an unstable cervical spine fracture was confirmed on imaging the next day: "It's totally unacceptable to send a patient home with that mechanism of injury and those signs and symptoms, without a proper work-up. I was shocked when I heard about it" (P23, Site 4, Fieldnote). Consequently, participants perceived some medical practitioners to lack proficiency in the diagnosis and management of musculoskeletal conditions. Many participants regarded physiotherapists

to be better placed than medical practitioners to arrange appropriate investigations for musculoskeletal concerns: "I think we're definitely in a much better position than … GPs in knowing when a patient does need a scan and when they don't need a scan. I think a lot of GPs … over scan" (P7, Site 7, Interview).

Implicit biases held by participants about other health professions were also considered to present challenges to effective IPCP. According to several study participants, health practitioners from some professions, such as chiropractic and osteopathy, adopted a reactive approach to health care, rather than working within a client-centered care paradigm that prioritizes health promotion and prevention. Participants were reluctant to collaborate with health practitioners from these professions due to these ideologically opposed differences regarding treatment orientation: "I'm less inclined to communicate with chiros [chiropractors] and osteos [osteopaths] … because they're … more focused on passive treatment and less about patient-driven outcomes" (P23, Site 4, Interview). A minority of study participants therefore asserted that services delivered by physiotherapy private practitioners were superior to those provided by other professional groups. For example, the principal physiotherapist of a monoprofessional private practice believed that chiropractic and osteopathy were not evidence-based professions:

> We need to get to a point where 99.9% of the population have an injury and they think about a physio [physiotherapist]. That's what I want. I don't want them to even entertain chiros [chiropractors] and osteos [osteopaths] … because they're not evidence-based professions. (P16, Site 7, Interview)

Time constraints and work schedules

This theme describes how time constraints and workload schedules can present challenges to effective IPCP. A perceived lack of time was reported as a significant barrier to IPCP by most study participants: "To me, interprofessional collaboration fluctuates depending primarily on how busy people are. The biggest barrier to interprofessional collaboration is definitely the lack of time needed to perform it" (P17, Site 6, Interview). Several study participants stated that there was not sufficient time during work hours to engage meaningfully in IPCP. These physiotherapists insisted that treating clients during this time was their highest priority, rather than participating in interprofessional work:

> I think the most important thing about clinic time is treating people. Taking however many hours to … write an email … a letter, you're taking that time away from treating patients and if you've got 50, 60, plus patients a week, there's very little time for anything else. (P14, Site 4, Interview)

A number of participants subsequently contended that interprofessional communication, such as writing referrals and reports to other health practitioners, must be performed in physiotherapy private practitioners' own time outside of clinical

hours: "Your best bet is do … that collaboration … work in your unpaid time. That's when you have to write something up and send it off. I do a ton of unpaid work doing exactly that" (P5, Site 10, Interview).

> Conflicting work schedules were identified as an additional barrier to IPCP. Participants highlighted the challenges of coordinating collaborative efforts among health practitioners working across multiple locations. Although participants perceived medical practitioners as particularly difficult to reach, they acknowledged the time constraints under which they operated:
>
> I do understand that GPs are busy. My brother's a GP and I know how busy he is and how difficult it can be to find the time to write a detailed handover to a physio or anyone else. GPs are people who are time poor and have not just physios who want a piece of their attention. They have inputs coming from everywhere. (P15, Site 4, Interview)

The principal physiotherapist of a monoprofessional private practice explained how a GP clinic conducted regular professional development workshops with local health professionals before the COVID-19 pandemic. Although the workshops were well attended, they were discontinued without notice and this participant questioned whether the intensive time requirements to host the event may have precipitated their conclusion:

> A GP clinic … was hosting interprofessional PD [professional development] days and we had our physios attend those, but they just die out. You can drive something that's motivating and amazing and has great buy in, but nothing is sustainable because people are too busy. (P16, Site 7, Interview)

Geographic location

This theme considers how physiotherapy private practitioners' geographic location impacts IPCP by influencing the ease and frequency of communication and access to resources. Participants who were physically separated from other health professions due to their workplace location reported barriers to IPCP. For example, many participants emphasized how workforce shortages in regional and rural areas made it challenging to collaborative effectively: "Working regionally, it's very difficult not to be siloed … because Australia … has a very small number of health professionals in regional areas. So, it's difficult to find somebody … to collaborate with in regional Australia" (P5, Site 10, Interview). In the absence of health practitioners with specialized skills in regional and rural areas, many physiotherapists assumed expanded scope of practice roles:

> What ends up happening in regional and rural areas, is that you treat what comes through the door because the patient might be … post-surgery and have been brought back from [an urban area], and

> so, you're it. You're now looking after that patient completely. They're not going to anyone else because you're in a … tiny community with limited referral options. (P5, Site 10, Interview)

When health practitioners with advanced skill sets resided in regional and rural areas, participants explained how it was often difficult to retain them because demand for their services may not have been as high compared to in urban locations:

> We had an OT [occupational therapist] in town for a while … and they went and did a whole pile of training on lymphoedema, but then weren't getting any referrals … and so eventually picked up another job in the city and moved … which was a bit of a shame. So, that was an opportunity to collaborate with someone with a unique skill set that didn't last long … and isn't overly uncommon in rural communities. (P22, Site 8, Interview)

Several participants, however, were critical of physiotherapy private practitioners who considered geography to constitute a barrier to IPCP. During a practice meeting at Site 10, the principal physiotherapist stated that they had recently contacted a multiprofessional pediatric incontinence service in a major city over 1,500 kilometers away. This physiotherapist declared that the two organizations had exchanged resources with each other, and the service in the urban area had offered to provide telehealth consultations for any clients that health practitioners at Site 10 were currently treating, who would benefit from further input: "We try and network with other services all across Queensland wherever our interests align. I don't think our geography is necessarily a barrier to interprofessional collaboration. It's a bit of a cop out in my view" (P25, Site 10, Interview).

Rules of funding schemes

This theme describes how funding agency rules can present barriers to IPCP. The rules of some funding schemes were perceived to restrict physiotherapy private practitioners' access to clinicians from other professions: "Funding can impact our ability to collaborate with other professions for sure. Once I recommended someone to see a dietitian and they didn't have enough NDIS [National Disability Insurance Scheme] funds to allow that to happen" (P2, Site 1, Interview). Australia's National Disability Insurance Scheme was designed to provide people with disability the support they need to live a fulfilling and independent life and contribute to their communities.

Several participants explained how rules pertaining to the Federal Governments' Medicare Enhanced Primary Care (EPC) scheme meant that physiotherapists employed in private practice often needed to send clients back to their regular GP who, in turn, would refer them to other allied health professionals. Physiotherapists are entitled to provide services under the Medicare EPC scheme; however, the rules prevent them from referring clients to other allied health professionals. Although physiotherapists may refer directly to other primary care practitioners working in

the private sector, as gatekeepers of the Medicare EPC scheme, only GPs can provide people with access to subsidized allied health treatment:

> Say someone has type 2 diabetes, I know that there's a Medicare referral for that. So, if I think that person will benefit from exercise physiology, I'm more likely to send them back to their GP for onwards referral for the patient to gain the benefits of the Medicare referral system and subsidized exercise physiology. So, I guess you could say I'm still technically collaborating with the GP, but because of restrictions placed on me … by the system, I may not get to collaborate with the EP [exercise physiologist]. (P18, Site 6, Interview)

> I have never actually referred anyone to a dietitian because if I send them, they pay full fee. Whereas if I communicate with their GP and get the GP to send them, they can get a care plan and receive discounted sessions. (P12, Site 9, Interview)

Negative perceptions towards the medical profession were considered to have emerged due to differences in financial reimbursement for the provision of health services. For example, participants who had knowledge of the remuneration that GPs received for performing tasks designed to improve IPCP, such as initiating EPC plans, suggested that inequalities in health system financing can produce feelings of resentment or distrust among members of the interprofessional team:

> GPs are so well compensated for doing the [Medicare] plans even though they just send it off without any further follow up. You're meant to send a letter back to the GP after the initial and at discharge, but it usually just goes to a general fax or email address. We don't know if they have been received or whether they have read it. (P20, Site 1, Interview)

> If you look at what GPs get for doing … paperwork, it's easy to go, "well, I get nothing." (P22, Site 8, Interview)

In Australia, insurance companies are generally required to pay for health services related to motor vehicle accidents under the Compulsory Third Party (CTP) insurance scheme. While it can be appreciated that many insurance providers are profitable organizations, in an observed interaction between two physiotherapists at site one, the companies were depicted as showing no regard for IPCP and dismissive of the exercise physiology profession. During the conversation, one physiotherapist (P3) was informing the other (P8) of the issues that had arisen when interacting with an insurance company in relation to a CTP claim. The physiotherapist managing the claim suggested that the claimant receive fortnightly physiotherapy and twice-weekly exercise physiology to support their recovery. The insurance provider, however, rejected the physiotherapist's recommendation for exercise physiology and instead demanded all the claimant's care be provided by physiotherapy. Visibly frustrated recalling events, P3 remarked: "I wish I knew what they're basing their

decision off. I guess it just shows that it's profits over people for … [insurance companies] at the end of the day, doesn't it?" (P3, Site 1, Fieldnote).

Discussion

The aim of this study was to explore the barriers to IPCP from the perspective of Australian physiotherapy private practitioners. This study builds on, and explores, preliminary findings from an online survey [15], with a sample of physiotherapists employed in private practice sites within the NQPHN region. Five main themes characterized physiotherapy private practitioners' views and experiences regarding IPCP: a) competition for clientele, b) personal attitudes and beliefs, c) time constraints and work schedules, d) geographic location, and e) rules of funding schemes. Given the global expectation for IPCP as a standard of care, the insights derived from this study may hold relevance beyond the current research context [1]. Although this study reports the barriers to IPCP from the perspective of Australian physiotherapy private practitioners, the findings from this research may be of interest to private sector physiotherapists internationally, as well as health practitioners from other professions who work in similar clinical settings with similar clientele.

This study highlights the need to address the financial concerns of physiotherapy private practitioners regarding IPCP. Study participants expressed concerns about referring clients to health professionals working at other primary care facilities, as this could result in lost clientele. Financial competition can negatively impact IPCP, as health practitioners from one profession may be less likely to collaborate with clinicians from another profession if they are perceived as a threat to their income-generating potential [39,40]. In a recent survey [15], physiotherapists employed in private practice were less likely to participate in interprofessional activities such as shared decision-making and team meetings, which may be due to a focus on productivity and individual key performance indicators over collective team or organizational performance. Research also indicates that competition for clientele may undermine IPCP when it is incentivized and encouraged by fee-for-service payment models [41]. In a fee-for-service model of remuneration, healthcare providers are paid for each individual service or treatment they provide to a client. Therefore, the more services a provider delivers, the more they may be financially compensated. This payment model may create a financial incentive for providers to focus on delivering their own services, rather than collaborating with other health professionals. Alternative payment models, such as capitation or bundled payments, have been suggested to promote IPCP [41]. These alternative payment models may offer greater incentive for IPCP by rewarding healthcare providers for working together to achieve better client outcomes and control costs [42]. Financial incentives may help mitigate some of the challenges associated with IPCP by providing physiotherapy private practitioners with a clear motivation to communicate and coordinate care with other health professionals. Physiotherapy private practitioners who are financially rewarded for collaborating effectively may be more likely to share information and resources with members of the interprofessional team and develop comprehensive management plans for clients.

The findings of this study provide support for the need for effective communication and collaboration between physiotherapists and medical practitioners, particularly in the management of musculoskeletal conditions. Several participants were critical of how medical practitioners carried out their duties, citing poor communication and medical mismanagement of clinical cases as barriers to IPCP. However, promising signs of a cultural shift within the medical profession towards interprofessional teamwork, client-centered care, and improved communication have been reported in the literature [43]. This cultural shift is being driven by a variety of factors, including advances in medical technology, changes in health policy, and the increasing diversity of the medical workforce [44–46]. As the culture of the medical profession continues to evolve, it is anticipated that IPCP between physiotherapists and medical practitioners will also improve, ultimately leading to better outcomes for clients. It must be noted, however, that the pace and nature of cultural change within the medical profession may differ significantly across various countries, regions, and healthcare systems.

Study participants stressed that they had to be mindful of how they conveyed client information to GPs. This was based on the premise that GP referrals significantly influence physiotherapy private practitioners' ability to generate income. Physiotherapists in private practice often rely on referrals from GPs to maintain their client base and ensure the financial viability of their organization [47]. This relationship may prove challenging for physiotherapists to be critical of medical practitioners. Physiotherapists in this study reported exercising caution when approaching some medical practitioners, for instance, by not being too affirmative in making their observations regarding client management to prevent unpleasant reactions. The extent to which physiotherapy private practitioners withhold information from GPs and medical specialists due to possible financial ramifications the interaction could have, such as discussing clinical cases where client harm or distress is suspected, is currently unclear. However, all health practitioners, including physiotherapists, have a professional obligation to prioritize the best interests of their clients, regardless of the impact on referral relationships [48]. Physiotherapy private practitioners have a responsibility to provide high-quality, evidence-based care to their clients, and to advocate for the best possible outcomes [48]. Implementing an interprofessional collaborative practice approach to client care is critical to ensuring physiotherapy private practitioners fulfill these responsibilities.

The attitudes of physiotherapy private practitioners towards other health professionals were identified as a significant influence on their willingness to engage in IPCP. For example, some study participants were reluctant to interact with chiropractors or osteopaths because they felt that they did not share a common language or vision of treatment. These philosophical differences may perpetuate uncertainty about each other's roles and lead to disagreements or tensions, particularly regarding issues related to scope of practice, appropriate treatment modalities, and patient safety [49]. Negative opinions towards the chiropractic and osteopathy professions may also be based on past interactions with only a small number of individual practitioners. To overcome these barriers, more opportunities are required to bring

health practitioners from diverse professional backgrounds together. This may be achieved through arranging training and promotional and social activities between and within healthcare organizations. Time constraints, however, may present challenges in implementing such initiatives [22,40].

The current study also highlights the need to address the challenges associated with time constraints and workload schedules to effectively promote IPCP. Physiotherapy private practitioners reported that they did not have enough time to meaningfully engage in interprofessional activities. The significant amount of perceived time required to implement interprofessional work was considered an additional barrier. In the absence of dedicated systems to support IPCP, participation in interprofessional tasks may be at the discretion of individual health practitioners, with many physiotherapists describing these tasks as voluntary and unpaid work that is performed in addition to routine clinical duties. It is therefore possible that existing remuneration methods for healthcare providers do not adequately account for the time required for effective IPCP. In Australia, there have been growing calls to incentivize IPCP in primary care through the Medicare Benefits Schedule (MBS) [50]. Medicare is Australia's universal health insurance scheme that is funded by the Australian Government through general taxation. The feasibility of introducing consultation items to increase the uptake and quality of collaborative work, such as case conferences, was recently examined [50]. However, the MBS Review Taskforce [50] concluded that mandating such practices would exacerbate health system inequities due to workforce shortages in rural and remote areas. To improve client outcomes and enhance the quality of health service provision, it is crucial to manage time pressures and encourage more efficient IPCP. In physiotherapy private practice, this may be achieved through various strategies such as allocating specific time for interprofessional communication and collaboration, offering adequate resources and support for interprofessional tasks, and acknowledging the significance and value of IPCP on service delivery at an organizational level.

The study findings emphasize the need for strategies to support sustainable models of IPCP in the physiotherapy private practice setting in regional and rural areas. Physiotherapists located in regional and rural areas face challenges in collaborating with other health practitioners due to workforce shortages and limited access to specialized healthcare services [51]. Physiotherapy private practitioners working in these areas may therefore need to modify their professional boundaries and assume expanded scope of practice roles, which can lead to increased responsibility and workload [52]. Furthermore, people living in regional and rural areas often experience higher levels of socioeconomic disadvantage and higher rates of chronic diseases compared with those living in urban areas [53]. Such factors may impact health outcomes in regional and rural communities and increase the need for IPCP to address complex health issues. Strategies that may overcome geographical barriers to IPCP include improving access to specialized healthcare services, increasing workforce capacity, promoting networking and collaboration with other health professionals, and facilitating use of telehealth technologies [5].

The main limitation of this study was a potential volunteer bias because participants eligible for study inclusion were chosen from a list of survey respondents who expressed interest in further research [15]. However, physiotherapy private practice sites were carefully selected to ensure that recruited participants were "information-rich" [33]. In addition, this study deepens our understanding of IPCP from the perspective of an understudied population: physiotherapists working in private practice in regional and rural Australia. Although competition for clientele was a significant barrier to IPCP in the current study, participants were not specifically asked about their employment type or payment structure, such as whether they received a fixed salary or operated on a commission-based system. Collecting this demographic information may have helped to achieve a more comprehensive understanding of how different compensation models influence physiotherapy private practitioners' attitudes and behaviours related to IPCP. The collection of observational data during the COVID-19 pandemic may be considered an additional study limitation. Physical distancing requirements and restrictions may have created challenges for physiotherapy private practice sites to facilitate opportunities for multiple health practitioners to safely interact in the same physical environment, possibly impacting the dynamics and behaviours observed during the study. However, the unique context of the COVID-19 pandemic has offered valuable novel insights by showcasing the adaptability and resilience of health services and health practitioners in response to unforeseen circumstances [54]. Furthermore, observational data collected in the study only captured activities, events, and interactions that occurred outside of physiotherapy private practitioners' consultations with clients. Consequently, it is possible that instances of interprofessional communication during client consultations, such as phone calls to other health professionals, were not directly observed. Future research should address this limitation by exploring interprofessional dynamics within client consultations to provide a more comprehensive understanding of IPCP in physiotherapy private practice settings.

Conclusion

This study provides the physiotherapy profession with new and relevant information pertaining to the barriers to IPCP from the perspective of the private practitioner. The findings from this study suggest that implementing IPCP in the Australian physiotherapy private practice setting presents several challenges. Financial concerns, such as physiotherapy private practitioners' perceived need to compete for clientele, were significant barriers to IPCP. Introducing financial incentives and adopting alternative payment models to fee-for-service schemes may be necessary to provide physiotherapy private practitioners with a clear motivation to engage in IPCP. This study also highlights the need for more formal opportunities to bring health practitioners from diverse professional backgrounds together to gain new insights and knowledge of other professions' expertise and challenge their own assumptions. The findings from this research may be used to inform the development of innovative strategies that will support sustainable models of IPCP in the physiotherapy private practice setting.

Supporting information

Supplementary material 1. Semi-structured interview guide (see appendix).

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Appendix

Supplementary material 1. Semi-structured interview guide

1. Thank you for agreeing to chat with me. Could you introduce yourself and your position/role at this private practice? *(Follow-up: How would you describe your workplace?)*
2. Can you tell me what interprofessional collaborative practice looks like for a physiotherapy private practitioner at this clinic? *(Probe for: interactions with different professional groups; frequency of interactions; modes of communication; level of satisfaction; organisational culture/vision; perceived value of interprofessional collaborative practice)*
3. What do you think are the main barriers to effective interprofessional collaborative practice for physiotherapists working in private practice? *(Probe for: power/hierarchy; tensions/conflicts; financial considerations; geographic location; organisational model; scope of professional practice; time constraints)*
4. Can you explain why a recent survey found that physiotherapy private practitioners are more likely to interact with health care professionals such as general practitioners, medical specialists (for example, orthopaedic surgeons), exercise physiologists and occupational therapists, but less likely to interact with chiropractors, dietitians, osteopaths, pharmacists, psychologists and speech pathologists?
5. In a recent survey, a physiotherapy private practitioner made the comment that "… collaboration within allied health is fine; however, the main limitations are dealing with the medical profession due to their incredibly poor awareness of what our treatment actually is". Do you agree or disagree with that statement? *(Follow-up: What have your experiences been with medical practitioners?)*
6. Ninety-eight per cent of respondents in a recent survey indicated that interprofessional collaborative practice was necessary to provide adequate client care, but only one-third of these respondents reported that they interacted with a health practitioner from a different profession once a week or less. Can you explain this finding? *(Probe for: organisational model; orientation to treatment; time constraints)*
7. Do you think it is harder to achieve effective and sustainable interprofessional collaborative practice in regional and rural areas compared to major cities? *(Follow-up: Why/why not?)*
8. Has participation in this research project changed your interest in interprofessional collaborative practice?
9. Is there anything else you would like to discuss regarding interprofessional collaborative practice in private practice that we have not covered in the interview?

Appendix 7: Peer-reviewed publication – 'Promoting effective interprofessional collaborative practice in the primary care setting: Recommendations from Queensland physiotherapy private practitioners'

Seaton, J., Jones, A., Johnston, C., & Francis, K. (2024b). Promoting effective interprofessional collaborative practice in the primary care setting: Recommendations from Queensland physiotherapy private practitioners. *Australian Journal of Primary Health, 30*(Issue), page–page. https://doi.org/10.1071/PY23175

Abstract

Background: Physiotherapy private practitioners represent a growing proportion of Australia's PHC workforce; however, they face significant barriers in integrating seamlessly within interprofessional teams. Historically, the landscape of PHC in Australia has been one where many physiotherapists work in monoprofessional private practice facilities at dispersed locations, potentially limiting collaborative and coordinated care. The aim of this study was to investigate strategies recommended by physiotherapists to promote effective IPCP within the Australian private practice setting. **Methods:** Using interpretive description as the guiding methodological framework, semi-structured interviews were conducted with 28 physiotherapists in 10 private practice sites in Queensland, Australia. **Results:** Data analysis produced three themes that characterised physiotherapy private practitioners' recommendations to improve IPCP: (a) the need for improved funding and compensation, particularly addressing the limitations of the Medicare CDM program; (b) the development of integrated and secure digital communication systems to facilitate better information exchange; and (c) prioritising PD and training to enhance collaboration. **Conclusions:** This research lays the groundwork for informed policy making to advance person-centred care and support the integration of services in the Australian healthcare system. The findings from this study indicate that promoting effective IPCP in physiotherapy private practice requires a comprehensive strategy that addresses systemic funding and compensation issues, enhances digital communication systems and optimises IPE and training.

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Promoting effective interprofessional collaborative practice in the primary care setting: recommendations from Queensland physiotherapy private practitioners

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ABSTRACT

Background. Physiotherapy private practitioners represent a growing proportion of Australia's primary care workforce; however, they face significant barriers in integrating seamlessly within interprofessional teams. Historically, the landscape of primary care in Australia has been one where many physiotherapists work in monoprofessional private practice facilities at dispersed locations, potentially limiting collaborative and coordinated care. The aim of this study was to investigate strategies recommended by physiotherapists to promote effective interprofessional collaborative practice (IPCP) within the Australian private practice setting. **Methods**. Using interpretive description as the guiding methodological framework, semi-structured interviews were conducted with 28 physiotherapists in 10 private practice sites in Queensland, Australia. **Results**. Data analysis produced three themes that characterised physiotherapy private practitioners' recommendations to improve IPCP: (a) the need for improved funding and compensation, particularly addressing the limitations of the Medicare Chronic Disease Management program; (b) the development of integrated and secure digital communication systems to facilitate better information exchange; and (c) prioritising professional development and training to enhance collaboration. **Conclusions**. This research lays the groundwork for informed policy making to advance person-centred care and support the integration of services in the Australian healthcare system. The findings from this study indicate that promoting effective IPCP in physiotherapy private practice requires a comprehensive strategy that addresses systemic funding and compensation issues, enhances digital communication systems and optimises interprofessional education and training.

Keywords: interprofessional collaboration, interprofessional practice, person-centred care, physical therapy, physiotherapists, primary care, private practice, qualitative research.

Introduction

Interprofessional collaborative practice (IPCP) is the process of enabling different healthcare professionals to work together to achieve a common goal and is recognised as an essential aspect of healthcare delivery (World Health Organization 2010; Reeves *et al.* 2017). The goal of IPCP is to facilitate effective communication, cooperation and teamwork among healthcare practitioners from different professions to provide comprehensive and coordinated patient care (World Health Organization 2010; Reeves *et al.* 2017). Physiotherapists are crucial members of interprofessional healthcare teams as their expertise in the assessment, diagnosis and treatment of a wide range of conditions affecting people across the lifespan makes them valuable contributors to comprehensive care (Physiotherapy Board of Australia and Physiotherapy Board of New Zealand 2015; deBoer *et al.* 2019; Australian Physiotherapy Association 2022).

The physiotherapy private practice setting in Australia provides services to a large proportion of the population (Australian Institute of Health and Welfare 2022). It is estimated that physiotherapy private practice is a AU$2.2 billion industry made up of more than 7000 businesses (Australian Physiotherapy Association and Nous Group 2020).

Physiotherapists employed in private practice are reported to account for nearly three-quarters of the Australian physiotherapy workforce (Department of Health and Aged Care 2023). The physiotherapy private sector is characterised by a diverse range of practice settings, including musculoskeletal private practices, sports and performance clinics, women's health and pelvic health clinics, neurological rehabilitation centres, pain management clinics and occupational health and workplace rehabilitation (Australian Physiotherapy Association 2022).

The landscape of primary care in Australia has traditionally been one where many health practitioners, including physiotherapists, operate in monoprofessional private practice settings at dispersed locations (Breadon *et al.* 2022). This may result in primary care practitioners working within their traditional scope of practice, isolated in professional 'silos' and may hinder collaborative and coordinated care (Nicholson *et al.* 2013). The nature of this clinical environment highlights the need to develop practical strategies that support sustainable models of IPCP specifically tailored for physiotherapy private practice. Such strategies should not only enhance the intensity of IPCP where necessary but also be context sensitive, ensuring they remain adaptable and responsive to Australia's ever-evolving healthcare system. Crucially, these strategies should emerge and develop from the physiotherapists themselves, as they possess first-hand experience and intimate knowledge of the challenges and opportunities of IPCP. By incorporating the perspectives of physiotherapy private practitioners, valuable insights can be gained that will contribute to the development of effective strategies aimed at supporting IPCP in this clinical setting. This study aimed to investigate strategies endorsed by physiotherapists to promote effective IPCP within the Australian private practice setting.

Methods

Design

A qualitative approach oriented toward interpretive description (ID) was employed (Thorne 2008). Interpretive description was chosen as the methodological framework for this study due to its unique ability to facilitate the exploration and interpretation of complex social phenomena, particularly in healthcare settings (Thorne *et al.* 2016). A fundamental assumption of ID is the subjective construction of reality based on individual experiences and interactions (Thorne 2008). The Consolidated Criteria for Reporting Qualitative Research checklist was used to ensure explicit and comprehensive reporting of this study (Tong *et al.* 2007). Ethics approval was obtained from the James Cook University Human Research Ethics Committee (H7951).

Participants

Participants were physiotherapists registered with the Australian Health Practitioner Regulation Agency (AHPRA) working at private practice facilities in the region covered by the Northern Queensland Primary Health Network (NQPHN). Spanning an area of 510 000 km^2, this tropical region is home to an estimated 730 000 people (Northern Queensland Primary Health Network 2022). Most of the population live within the major regional centres of Cairns, Mackay and Townsville, while approximately 8% of inhabitants live in remote and very remote areas (Northern Queensland Primary Health Network 2022). Participants were eligible for inclusion in the study if they were: (a) employed in a private practice facility within the NQPHN region for no less than one month; (b) over the age of 18 years and willing to consent to the study; and (c) proficient in spoken and written English.

Physiotherapy private practitioners who took part in the first phase (Seaton *et al.* 2020) of a larger mixed methods study and who were interested in participating in further research, provided their contact information to the research team. These physiotherapists (n = 31) were subsequently emailed and provided with a participant information sheet detailing the study purpose, and the role and experience of the first author and interviewer as a male physiotherapist and current doctoral candidate. Recruitment was predominately convenience based, in that participants were selected on a first-come-first-served basis (Robinson 2014). This approach was used to efficiently recruit participants who were readily available and willing to participate in the study. A semi-purposive stratified element was also used to ensure physiotherapists worked at a range of private practice facilities, varying with respect to organisational model, service provision, team composition and geographic location (Robinson 2014). Participant recruitment was ceased once these purposive criteria were met.

Physiotherapists (n = 10) from a total of 10 different private practice facilities within the NQPHN region agreed to participate in the study. The physiotherapy private practitioners who agreed to participate in the study were then asked to identify other physiotherapists employed at their facility to take part in an interview through a process of snowball sampling. Invitations to participate in an interview were sent to all identified individuals, of which an additional 18 physiotherapists agreed.

Data collection

Face-to-face individual semi-structured interviews were conducted at each private practice facility and lasted approximately forty minutes (range 16–117 min). Interviews allowed for the exploration of each participant's unique perspectives, experiences and meanings in relation to IPCP within a flexible framework. The interview guide (Supplementary Appendix 1) was informed by the findings from an earlier online survey (Seaton *et al.* 2020) and was piloted by two experienced private practice physiotherapists. Simple demographic information (age, gender, entry-level physiotherapy qualification and years of clinical experience) was collected from the

participants at the commencement of the interview and memos were immediately recorded after each interview to ensure that a reflexive stance was maintained in relation to the research and participants (Birks *et al.* 2008).

All participants provided written informed consent and audio-recorded interviews were transcribed verbatim with the assistance of secure online transcription software (https://otter.ai). Each participant was provided with a copy of the interview transcription and an opportunity to make any necessary corrections or omissions before the analysis (Patton 2015). Minor amendments were made to one transcript.

Data analysis

Reflexive thematic analysis was employed to facilitate the identification of patterns or themes in the interview data (Braun and Clarke 2021). Familiarisation with the data through careful and repeated reading of interview transcripts and memos was the first analytical step, where initial impressions were noted to gain a sense of the content. The data were then analysed line-by-line in a process of open coding, searching for recurring concepts and ideas to generate initial codes. For the first five transcripts, coding was completed independently by two authors (JS and AJ) to sense-check ideas and explore multiple assumptions of the data in a reflexive manner (Braun and Clarke 2019). This approach emphasises the role of the researcher's reflexivity in coding and theme generation, focusing on an iterative cycle of familiarisation, coding, theme development and revision, with constant reflection on their own biases and assumptions. Crucial to this process was the authors' shared understanding of terminology and concepts relevant to IPCP, and the engagement in regular discussions among the multiprofessional research team to challenge and refine the developing themes (Braun and Clarke 2019). This collaborative approach added an additional layer of scrutiny and reflexivity, ensuring that the themes were representative of the data and aligned with the research aim. The codes were then consolidated and grouped into themes, and once the potential themes were identified, they were reviewed, refined and named with clear and concise descriptions accurately capturing their meaning. Finally, endorsed themes were populated with relevant quotes that were carefully selected to ensure accurate representation. Data were managed using NVivo software (QSR International; https://www.qsrinternational.com).

Results

Participants

Individual interviews were conducted with 28 physiotherapists (Table 1). The mean age of interview participants was 33 years (range 21–61 years) and they had approximately 9 years of clinical experience (range 1–38 years). Participants worked across 10 private practice facilities within the NQPHN region (Table 2).

Themes

Reflexive thematic analysis of the data produced three overarching themes: (a) funding and compensation; (b) integrated and secure digital communication systems; and (c) professional development and training.

Theme 1: Improved funding and compensation

This theme describes the perceived importance of adequate remuneration for physiotherapy private practitioners' time spent on collaborative activities, including formal interprofessional meetings. Most participants highlighted concerns regarding the limitations of the Medicare Chronic Disease Management (CDM) program, calling for improvements in funding and access to support IPCP and ensure better client outcomes. Participants considered government-level investment and structural changes within Australia's healthcare system as necessary to create an environment conducive for IPCP.

> ... if we're serious about ... interprofessional collaboration, spending at a government level needs to be looked at ... whether it's ... an extra visit on the [Medicare CDM] program, ... a sit-down meeting with the other professionals involved, or remuneration. (P24, Site 5)

Participants deemed financial compensation associated with providing physiotherapy services through the Medicare CDM program as insufficient in promoting IPCP. Participants claimed that the reimbursement structure of the CDM program did not adequately account for coordination and collaboration efforts required in comprehensively addressing the complex healthcare needs of people with chronic conditions. Participants subsequently stressed the need to increase the Medicare rebate for people receiving physiotherapy services in the CDM program to better reflect the time required to perform interprofessional tasks, such as writing letters and reports to referring medical practitioners.

> Clinicians need to be compensated for the time they spend liaising with other health professionals. It's as simple as that. Because if you're not [getting compensated], you get paid $56 for a half an hour Medicare [CDM] session ... and in that time, you're supposed to write them [clients] a program and write back to their GP [general practitioner] a summary of your session ... it's just all of this coordination that you don't get paid for ... so if you want interdisciplinary collaboration, you need to pay clinicians for the time that it takes. (P20, Site 1)

Table 1. Demographic and workplace information of participants.

Participant number	Gender	Highest tertiary qualification	Location of entry-level training	Physiotherapy experience (years)	Classification of workplace location (MMM)[A]	Principal physiotherapist[B]	Organisational model	Co-located
1	Female	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	No
2	Female	Bachelor degree	New Zealand	3	MMM 2	No	Multiprofessional	No
3	Male	Bachelor degree	Australia	9	MMM 2	No	Multiprofessional	No
4	Female	Bachelor degree	Australia	2	MMM 2	No	Monoprofessional	Yes
5	Female	Masters degree	Australia	10	MMM 2	No	Multiprofessional	No
6	Female	Bachelor degree	Argentina	3	MMM 2	No	Multiprofessional	No
7	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
8	Male	Bachelor degree	Australia	7	MMM 2	No	Multiprofessional	No
9	Female	Bachelor degree	Australia	11	MMM 2	Yes	Monoprofessional	No
10	Female	Masters degree	Australia	13	MMM 2	Yes	Monoprofessional	Yes
11	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
12	Male	Bachelor degree	Australia	1	MMM 2	No	Multiprofessional	Yes
13	Female	Bachelor degree	Australia	25	MMM 2	No	Monoprofessional	Yes
14	Male	Bachelor degree	Australia	2	MMM 4	No	Multiprofessional	Yes
15	Male	Graduate certificate	Australia	10	MMM 4	No	Multiprofessional	Yes
16	Male	Masters degree	Australia	12	MMM 2	Yes	Monoprofessional	Yes
17	Male	Bachelor degree	Australia	6	MMM 2	No	Multiprofessional	Yes
18	Male	Bachelor degree	Australia	5	MMM 2	No	Multiprofessional	Yes
19	Female	Masters degree	Estonia	5	MMM 2	No	Multiprofessional	No
20	Female	Bachelor degree	New Zealand	19	MMM 2	No	Multiprofessional	No
21	Male	Bachelor degree	Australia	5	MMM 2	No	Monoprofessional	Yes
22	Male	Graduate diploma	Australia	38	MMM 5	No	Multiprofessional	No
23	Male	Masters degree	Australia	15	MMM 4	Yes	Multiprofessional	Yes
24	Male	Masters degree	Australia	21	MMM 5	Yes	Monoprofessional	Yes
25	Female	Masters degree	Ireland	14	MMM 2	Yes	Multiprofessional	No
26	Female	Bachelor degree	Australia	1	MMM 2	No	Monoprofessional	Yes
27	Male	Masters degree	Australia	1	MMM 2	No	Monoprofessional	Yes
28	Male	Masters degree	Australia	15	MMM 2	Yes	Multiprofessional	Yes

[A]MMM, the Modified Monash Model classification system that categorises different areas in Australia based on population and geographical location. It consists of seven categories, with MMM Category 1 representing metropolitan areas and MMM Category 7 representing very remote communities.
[B]In the Australian physiotherapy private practice setting, a principal physiotherapist is typically owner or director of the clinic. Principal physiotherapists are responsible for the overall management and administration of their practice, which includes overseeing the financial aspects of the business, as well as hiring and managing other physiotherapists and support staff.

Increasing the number of allied health services that a person with a chronic condition and complex care needs is entitled to in a calendar year under the Medicare CDM program was another proposed initiative to improve IPCP. The limited number of allied health services provided through the Medicare CDM program impacted physiotherapy private practitioners' ability to address the needs of people with chronic disease effectively and disrupted continuity of care. Increasing the number of allied health visits would provide physiotherapists with more opportunities to coordinate interventions and share information with other health practitioners.

> We know that the longer the injury or pain has been there, the longer it's going to take to get better, so five sessions with allied health are not enough. And as soon as they say they have to see a podiatrist … you are left with four [sessions]. Then they're seeing a psychologist, an exercise physiologist and a dietitian … and I'm like, what am I meant to achieve in a single session? Look, it's great that they have access to a multidisciplinary scheme because you need that for chronic conditions … but they're usually complex patients, so they need prolonged engagement with us and collaboration between lots of allied health [professionals]. (P6, Site 10)

Table 2. Characteristics of participating physiotherapy private practice sites.

Site number	Organisational model	Primary physiotherapy clinical area	Physiotherapy services provided[A]	Health professions employed	Co-located health services	Classification of facility location (MMM)
1	Multiprofessional	Neurological	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology (n = 2) Nursing (n = 1) Nutrition and dietetics (n = 4) Occupational therapy (n = 8) Physiotherapy (n = 6) Psychology (n = 4) Social work (n = 1) Therapy assistant (n = 5)	Nil	MMM 2
2	Monoprofessional	Paediatrics	NDIS Telehealth	Physiotherapy (n = 1)	Nil	MMM 2
3	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Physiotherapy (n = 3)	Dental clinic General practice clinic Pathology Pharmacy Podiatry	MMM 2
4	Multiprofessional	Musculoskeletal	DVA Medicare CDM NDIS Work injury compensation	Exercise physiology (n = 1) Physiotherapy (n = 4)	Occupational therapy Speech pathology	MMM 4
5	Monoprofessional	Musculoskeletal	DVA Medicare CDM Work injury compensation	Physiotherapy (n = 1)	Massage therapy Podiatry	MMM 5
6	Multiprofessional	Pain	DVA Medicare CDM Motor accident compensation Telehealth Work injury compensation	Exercise physiology (n = 1) Medicine (n = 1) Occupational therapy (n = 1) Physiotherapy (n = 2) Psychology (n = 1)	Ear, nose and throat surgery clinic Obstetrics and gynaecology clinic Ophthalmology clinic Optometry Private hospital Psychology Speech pathology	MMM 2
7	Monoprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Physiotherapy (n = 9)	Exercise physiology General practice clinic Massage therapy Orthopaedic surgery clinic Pathology Pharmacy Podiatry Psychology	MMM 2
8	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation Work injury compensation	Nursing (n = 3) Medicine (n = 9) Physiotherapy (n = 1) Psychology (n = 1) Social work (n = 1)	Nil	MMM 5

(*Continued on next page*)

Table 2. (*Continued*).

Site number	Organisational model	Primary physiotherapy clinical area	Physiotherapy services provided^	Health professions employed	Co-located health services	Classification of facility location (MMM)
9	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Exercise physiology ($n = 3$) Occupational therapy ($n = 1$) Physiotherapy ($n = 6$)	Audiology Cardiology clinic General practice clinic Paediatric clinic Pharmacy Private hospital Psychology	MMM 2
10	Multiprofessional	Musculoskeletal	DVA Medicare CDM Motor accident compensation NDIS Telehealth Work injury compensation	Massage therapy ($n = 1$) Physiotherapy ($n = 6$)	Nil	MMM 2

CDM, Chronic Disease Management; DVA, Department of Veterans' Affairs; MMM, Modified Monash Model; NDIS, National Disability Insurance Scheme.
^As denoted on Australian Physiotherapy Association 'Find a Physio' search tool (https://choose.physio/find-a-physio).

Theme 2: Advancing integrated and secure digital communication systems

This theme describes physiotherapy private practitioners' perceived need for integrated and secure digital communication systems which support effective IPCP, improve information exchange and ensure continuity of client care. Most participants were unsatisfied with the current state of electronic communication systems in the healthcare setting, citing slow progress, security concerns and technical limitations as barriers to effective implementation: 'We … need shared electronic communication platforms … but they need to be secure and … user-friendly.' (P22, Site 8).

Participants wanted improved communication channels and user-friendly, shared electronic platforms which enable seamless and secure information exchange among health practitioners from diverse professions. Many participants expressed frustrations about limited correspondence and information exchange with health practitioners working in different clinical settings and explained how they often relied on clients to bring relevant documents to their physiotherapy appointments. Without access to comprehensive and up-to-date information from all health practitioners involved in a client's care, participants reported difficulties in making informed decisions and providing continuous care.

> … the patient comes with a brief letter saying they need to see a physio [physiotherapist], but … you have no access to those records. We need access to those records to ensure continuity of care. Without … access to a patient's medical file, you cannot get collaboration. (P6, Site 10)

The potential of the My Health Record (MHR), an Australian Government initiative designed to centralise patient medical records for accessible and coordinated care, to support IPCP between health professionals from various clinical settings was acknowledged, but participants indicated that it had not met their expectations.

> … it is beneficial … to have unrestricted access to … medical information. That can … help interprofessional practice, but there's … too many ethical considerations with the My Health Record. I … have taken myself off it, so why would I use it with my clients? (P25, Site 10)

Theme 3: Prioritising professional development and training to enhance collaboration

This theme describes professional development opportunities and training strategies which physiotherapy private practitioners considered would promote effective IPCP. Physiotherapists emphasised the limitations of only receiving profession-specific training in reinforcing professional silos and advocated for interprofessional learning that incorporates the diverse perspectives on client care.

> There needs to be more courses ... that ... [are] tailored to suit a multitude of different health professionals, not just for physios. I know that a lot of physios go to the APA [Australian Physiotherapy Association] for their continuing education, but I feel like that can kind of pinpoint you into working only with physios and not working with other health professionals. (P1, Site 10)

Participants suggested that there was demand among physiotherapy private practitioners for practical guidance and resources on how to successfully implement IPCP. Participants indicated that physiotherapists in private practice required information on the operational aspects of IPCP, such as delegating tasks to other members of the interprofessional team.

> ... we all know the importance behind it [interprofessional collaborative practice], so we don't need information on why we should do it. It would be more about how you actually do it. Some people go, 'well, how do I actually organise this? How do I sort of go through and how do I get professions talking to each other? How do we set up case conferences? (P3, Site 1)

Participants felt that training in developing meaningful client-centred participation goals would optimise IPCP. Several physiotherapists emphasised the significance of goal setting in facilitating IPCP and recommended the use of the International Classification of Functioning, Disability and Health (ICF) as a comprehensive framework.

> I think physios probably need to be trained in goal setting. If you don't get the goal setting right, you don't get interprofessional practice. It's the crux of it. We need to be identifying meaningful participation goals from the outset and I think the ICF is the best framework to go by because it's just a really easy way to look at goal setting. So, if you don't get a participation goal, you're not going to get therapists from different walks ... working towards one overarching goal ... and it turns into a multidisciplinary service. (P8, Site 1)

The university sector was also urged to play a greater role in supporting IPCP by better preparing physiotherapy students to engage in collaborative care models upon graduation. Integrating more mental health learning content into entry-level physiotherapy programs was suggested as a means of fostering understanding and facilitating collaboration between health practitioners from different professions in addressing clients' physical and mental health conditions.

> Our knowledge of mental health ... as a profession ... is poor, so I don't think it's any surprise that physiotherapists don't interact with psychologists because we're probably too embarrassed to look stupid in front of them. When I graduated [university] five ... or six years ago, it [mental health] was a small subject in our final year. So, for me personally, it's taken a lot of professional development to sort of upskill there. And ... I'd say at least of quarter of the work I do now is pain education. So, that area ... definitely needs to be focused on more. I think it will go a long way in improving collaboration between physiotherapists and psychologists ... and probably OTs [occupational therapists] as well because they do lots of work in the mental health space too. (P7, Site 7)

Discussion

The aim of this study was to investigate strategies proposed by physiotherapists to promote effective IPCP within the Australian private practice setting. Three main themes characterised physiotherapy private practitioners' recommendations to improve IPCP: (a) funding and compensation; (b) integrated and secure digital communication systems; and (c) professional development and training. The study findings highlight crucial areas for intervention and emphasise the importance of a multifaceted approach to enhance IPCP in the context of physiotherapy private practice in Australia.

Existing healthcare financing arrangements may inadvertently discourage IPCP among Australian physiotherapy private practitioners. Fee-for-service payment models, whereby healthcare providers are reimbursed based on the number or type of services they provide, can lead to a focus on individual care (Breadon *et al.* 2022). Under a fee-for-service model, there is less incentive for healthcare providers to work collaboratively or integrate their services as each provider is remunerated separately for their services (Jia *et al.* 2021). This contrasts with other models such as bundled payments, where a single payment is made for all services related to a particular condition or procedure, incentivising healthcare providers to work together to manage costs and improve client outcomes (Jia *et al.* 2021). Participants in the current study indicated that financial remuneration for providing services under the Medicare CDM program was poor, noting that it fails to adequately compensate for the intensive non-clinical collaborative work that is regularly performed following a client consultation, such as preparing correspondence letters to referring medical practitioners. The value of these tasks in ensuring seamless coordinated and collaborative care should not be understated. Subsequently, there is an urgent need for policymakers to review the funding architecture of the Medicare CDM program to ensure that the rates of reimbursement are fair and reflect the demands of providing care to people with chronic conditions. In a fee-for-service environment, if financial reimbursement is perceived to be low when compared to the time required to provide a comprehensive service, healthcare providers may be forced to limit their interprofessional interactions or prioritise collaboration with health practitioners from certain professions over others. This may, in turn, lead to

fragmented care and poorer client outcomes, as healthcare needs go unmet. Ensuring adequate compensation for services provided under the Medicare CDM program may encourage more physiotherapy private practitioners to engage in IPCP. The intricate relationship between financial compensation for physiotherapy service provision in private practice and IPCP efficacy warrants further investigation.

This study emphasises the critical role of digital infrastructure in optimising IPCP for Australian physiotherapy private practitioners. In their clinical practice, physiotherapists may adopt a range of digital technologies including electronic health records, advanced patient management software and telehealth platforms (Keel *et al.* 2023). Although the potential of digital technologies such as integrated communication systems in promoting IPCP is evident (Socha-Dietrich 2021), the actual utility and efficacy of existing tools raise concerns. Many physiotherapists voiced apprehensions about the ability of the My Health Record (MHR) system to support IPCP, citing usability issues and community distrust related to privacy and confidentiality. Interoperable, accessible digital platforms can enhance quality of care by providing health practitioners comprehensive, up-to-date patient information, reducing dependence on individual accounts of medical histories (Socha-Dietrich 2021). Despite the ambitious objectives of the MHR (Australian Digital Health Agency 2018), the present scepticism suggests that it falls short in meeting the practical demands of Australian physiotherapy private practitioners. Currently, physiotherapy private practitioners are unable to choose suitable clinical information systems that are interoperable with the MHR and other digital initiatives such as secure messaging, nor can they participate in the efficient and timely sharing of consistent data to support consumer, practice and community-level planning (Allied Health Professions Australia 2023). Policymakers must therefore critically evaluate and enhance Australia's MHR system, ensuring it genuinely supports IPCP for physiotherapy private practitioners while addressing issues around data security and user experience.

This study highlights a notable gap between the content of physiotherapy entry-level training in Australia and the practical needs of physiotherapy private practitioners in clinical practice regarding IPCP. To address this gap, it is imperative to conduct further research in collaboration with the university sector to assess the current extent of IPCP instruction in their curricula. Participants stressed the importance of integrating more mental health training into physiotherapy entry-level curricula, suggesting that equipping physiotherapists with this knowledge would enable them to collaborate more effectively with mental health professionals, such as psychologists, in the clinical setting. This finding not only identifies a current deficit in training but presents an opportunity for educational institutions and peak professional organisations to enhance preparedness of physiotherapists entering the private practice workforce. Furthermore, the need for practical guidance on implementing IPCP underscores a broader gap between theoretical knowledge and practical application in the field. It is, however, possible that some participants lacked formal interprofessional education during their foundational physiotherapy training, potentially hindering their confidence and capability to engage in IPCP. Addressing this challenge through interventions such as facilitated interprofessional workshops could illuminate the significance of IPCP while fostering local community relationships. Primary Health Networks are optimally positioned to play a key role in these initiatives by enhancing collaborative models in primary care and emphasising the crucial nature of professional development and training for the advancement of IPCP among physiotherapy private practitioners (Breadon *et al.* 2022).

The inclusion of participants from only one region of Australia provided a unique opportunity for an in-depth exploration of physiotherapists' experiences of IPCP within a variety of private practice settings. Study participants had a range of clinical experience and their characteristics (including gender, level of highest educational attainment and primary physiotherapy clinical area) are comparable to publicly available data on the Australian physiotherapy workforce (Department of Health and Aged Care 2023), thereby increasing the potential application of the research findings to physiotherapy private practitioners across different Australian regions. Furthermore, given the global expectation for IPCP as a standard of care (WHO 2010), the findings from this research may be of interest to private sector physiotherapists internationally, as well as health practitioners from other professions who work in similar clinical settings with similar clientele.

The main limitation of this study was a potential selection bias because participants eligible for study inclusion were chosen from a list of survey respondents who expressed interest in further research (Seaton *et al.* 2020). Physiotherapy private practice sites were, however, carefully selected to ensure that recruited participants were 'information-rich' (Patton 2015). The omission of specific demographic data related to participants' remuneration structures was an additional study limitation. Whether participants were compensated through a salaried arrangement or a commission-based system was not ascertained. This distinction could potentially influence clinicians' perspectives on IPCP, given that their payment model might affect inclinations towards client retention. As such, the potential differences in attitudes between those on a salary vs those on a commission could not be explored, which may have provided richer context to the findings. Furthermore, the current study does not document how physiotherapists working in private practice conceptualise IPCP. The significance of understanding participants' conceptualisations of IPCP cannot be understated as it informs the relevance and applicability of the proposed strategies in the unique context of private practice. Previous research suggests that physiotherapy private practitioners may associate IPCP with routine clinical tasks such as sending and receiving

client correspondence (Seaton *et al.* 2020). Future studies would benefit from utilising conceptual frameworks (for example, InterPACT) to systematically classify and analyse various interprofessional activities (Xyrichis *et al.* 2018).

Conclusion

This research lays the groundwork for informed policy making that will optimise client care and the integration of services in the Australian healthcare landscape. The findings from this study indicate that promoting effective IPCP in physiotherapy private practice requires a multifaceted approach, addressing systemic funding and compensation issues, enhancing digital communication systems and prioritising interprofessional education and training. Implementing these proposed measures will support sustainable models of IPCP in physiotherapy private practice and ensure that physiotherapists working in this setting are well-equipped to address the inherent complexities in contemporary healthcare delivery.

Supplementary material

Supplementary material is available online.

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Data availability. The data that support this study cannot be publicly shared due to ethical or privacy reasons and may be shared upon reasonable request to the corresponding author if appropriate.

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Author contributions. JS conceived and designed the study, collected and analysed the data and drafted the manuscript. AJ, CJ and KF were consulted on study design, analysed the data and edited the draft manuscript. All authors reviewed and approved the final manuscript.

Contributor	Statement of contribution
Jack Seaton	Designed the study (85%)
	Conducted the data collection (100%)
	Analysed the data (80%)
	Wrote the paper (100%)
Anne Jones	Designed the study (5%)
	Analysed the data (10%)
	Edited the paper (40%)
Catherine Johnston	Designed the study (5%)
	Analysed the data (5%)
	Edited the paper (40%)
Karen Francis	Designed the study (5%)
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Appendix 8: Survey instrument used in the quantitative phase

EXPLORATION OF THE CHARACTERISTICS OF AUSTRALIAN PRIVATE PHYSIOTHERAPY PRACTITIONERS' INTERPROFESSIONAL INTERACTIONS

Section 1: Information about you and your physiotherapy qualification

1. What is your gender? (Select one)
☐ Male
☐ Female
☐ Other

2. What is your age in years? _____

For the following questions, the term 'entry-level' refers to your primary physiotherapy qualification (e.g. Bachelor of Physiotherapy). 'Entry-level' does not include your post-graduate qualifications (e.g. PhD, MPH). Please note that a three-year Masters degree (extended) allows the title of 'Doctor of Physiotherapy'.

3. Which of the following describes the entry-level physiotherapy training program you completed? (Select one)
☐ Diploma
☐ Bachelor degree
☐ Bachelor (Honours) degree
☐ Masters degree
☐ Masters degree (extended)
☐ Other, please specify: _____

4. In what year did you complete your entry-level physiotherapy qualification?
_____

5. Where did you complete your entry-level physiotherapy qualification? (Select one)
☐ Australia
☐ Overseas, please specify the country below:
_____

6. How many years have you worked as a physiotherapist in a clinical role (excluding breaks of one year or greater)? (Select one)
☐ Approximately 1 year
☐ Approximately 2 to 5 years
☐ Approximately 6 to 10 years
☐ Approximately 11 to 20 years
☐ Greater than 20 years

7. How many years have you worked as a physiotherapist in private practice (excluding breaks of one year or greater)? (Select one)
☐ Approximately 1 year
☐ Approximately 2 to 5 years
☐ Approximately 6 to 10 years
☐ Approximately 11 to 20 years

☐ Greater than 20 years

8. Have you previously been employed as a physiotherapist in any of the following clinical settings? (Select all that apply)
☐ Public hospital
☐ Private hospital
☐ Community care
☐ Residential aged care
☐ Sporting organisation
☐ Other, please specify: _____

Section 2: Information about your workplace and the clientele you treat

For the following questions, your 'private practice facility' refers to the workplace in which you spend most of your time during a typical working week.

9. Are you the principal physiotherapist at your private practice facility? (Select one)
☐ Yes
☐ No

10. What is the postcode of the town or city in which your private practice facility is located? _____

11. Within your private practice caseload, approximately how often would you treat people in each of the following age groups? (Select one for each category)

	Rating of frequency of presentation			
Age:	Never	Rarely	Sometimes	Often
0-2 years	☐	☐	☐	☐
3-6 years	☐	☐	☐	☐
7-12 years	☐	☐	☐	☐
13-18 years	☐	☐	☐	☐
19-30 years	☐	☐	☐	☐
31-40 years	☐	☐	☐	☐
41-50 years	☐	☐	☐	☐
51-64 years	☐	☐	☐	☐
65-84 years	☐	☐	☐	☐
85 years and over	☐	☐	☐	☐

12. Within your private practice caseload, approximately how often would you treat people in each of the following physiotherapy clinical areas? (Select one for each category)

	Rating of frequency of presentation			
Area:	Never	Rarely	Sometimes	Often
Cardiorespiratory	☐	☐	☐	☐

General rehabilitation	☐	☐	☐	☐
Musculoskeletal	☐	☐	☐	☐
Neurological	☐	☐	☐	☐
Occupational rehabilitation	☐	☐	☐	☐
Orthopaedics/trauma	☐	☐	☐	☐
Sports	☐	☐	☐	☐
Vestibular rehabilitation	☐	☐	☐	☐
Women's health	☐	☐	☐	☐

13. Within your private practice caseload, approximately how often would you treat people in each of the following stages of condition? (Select one for each category)

	Rating of frequency of presentation			
Stage:	Never	Rarely	Sometimes	Often
Acute (0-3 months)	☐	☐	☐	☐
Sub-acute (3-6 months)	☐	☐	☐	☐
Chronic (> 6 months)	☐	☐	☐	☐

For the following questions, a 'monodisciplinary' practice refers to a facility only employing one professional group (e.g. physiotherapists); a 'multidisciplinary' practice is one that incorporates health practitioners from two or more professional groups (e.g. physiotherapy and occupational therapy); and 'co-location' refers to health services that are located in the same physical space (e.g. office, building, campus), though not necessarily fully integrated with one another.

14. Which of the following best describes your private practice facility? (Select one)
☐ Monodisciplinary **(Proceed to Q. 16)**
☐ Multidisciplinary

15. Please indicate whether health practitioners from the following professions are employed by your private practice (Select all that apply)
☐ Chiropractic
☐ Exercise physiology
☐ Massage therapy
☐ Medicine (general practitioner)
☐ Medicine (medical specialist, e.g. orthopaedic surgeon)
☐ Nursing
☐ Nutrition and dietetics
☐ Occupational therapy
☐ Osteopathy
☐ Pharmacy
☐ Podiatry
☐ Psychology
☐ Speech pathology
☐ Other health profession, please specify: _____

16. Is your private practice facility co-located with another health service? (Select one)
☐ Yes
☐ No **(Proceed to Q. 18)**

17. Please indicate which of the following health services are co-located with your private practice facility (Select all that apply)
☐ General practice clinic
☐ Orthopaedic surgery clinic
☐ Other surgery/specialty medical service, please specify: _____
☐ Pharmacy clinic
☐ Private hospital
☐ Public hospital
☐ Radiology clinic
☐ Residential aged care facility
☐ Other health service, please specify: _____

Section 3: Information about your training relating to interprofessional collaboration

For the remaining sections, the term 'interprofessional collaboration' refers to occasions when members from two or more health professions work together to solve problems or provide services.

18. Did you receive any training and/or information as a part of your entry-level physiotherapy program related to interprofessional collaboration? (Select one)
☐ Yes
☐ No **(Proceed to Q. 20)**
☐ Unsure **(Proceed to Q. 20)**

19. In what form was the training and/or information related to interprofessional collaboration delivered? (Select all that apply)
☐ Clinical placement
☐ E-learning / online platform (e.g. discussion boards)
☐ Lecture and / or seminar
☐ Practical / tutorial
☐ Simulation-based learning environment
☐ Other, please specify: _____
☐ Unsure

20. Have you participated in any additional training programs specifically related to interprofessional collaboration since receiving your entry-level qualification? (Select one)
☐ Yes, please specify: _____
☐ No

21. Do you think you require more training related to interprofessional collaboration? (Select one)
☐ Yes
☐ No

Section 4: Information about your interprofessional interactions

22. On average, how often would you interact with a health practitioner from another profession as a part of your private practice caseload? (Select one)
☐ Daily
☐ More than once a week
☐ Once a week
☐ Less than once a week

23. As a physiotherapist working in private practice, which of the following means of communication do you use to interact with health practitioners from other professions? (Select all that apply)

- ☐ Email
- ☐ Face-to-face planned meeting
- ☐ Face-to-face unplanned meeting (e.g. corridor discussion)
- ☐ Joint evaluation or intervention
- ☐ Letter or form sent by fax or mail
- ☐ Letter or form sent through your patient
- ☐ Telephone
- ☐ Verbally transmitted message through your patient
- ☐ Videoconference (e.g. Skype)
- ☐ Other, please specify: _____

24. As a physiotherapist working in private practice, how would you rate your frequency of interaction with health practitioners from each of the following professions? (Select one for each profession)

	Rating of frequency of interaction			
Profession:	Never	Rarely	Sometimes	Often
Chiropractic	☐	☐	☐	☐
Exercise physiology	☐	☐	☐	☐
Massage therapy	☐	☐	☐	☐
Medicine (general practitioner)	☐	☐	☐	☐
Medicine (medical specialist)	☐	☐	☐	☐
Nursing	☐	☐	☐	☐
Nutrition and dietetics	☐	☐	☐	☐
Occupational therapy	☐	☐	☐	☐
Osteopathy	☐	☐	☐	☐
Pharmacy	☐	☐	☐	☐
Podiatry	☐	☐	☐	☐
Psychology	☐	☐	☐	☐
Speech pathology	☐	☐	☐	☐

25. As a physiotherapist working in private practice, how would you rate your level of satisfaction regarding your previous interactions with health practitioners from other professions? (Select one)

- ☐ Very satisfied
- ☐ Moderately satisfied
- ☐ Slightly satisfied
- ☐ Not at all satisfied
- ☐ Not applicable

Section 5: Your opinions regarding interprofessional collaboration

26. As a physiotherapist working in private practice, do you think that you need to collaborate with health practitioners from other professions to provide adequate care for the people you treat? (Select one)

☐ Yes
☐ No

27. As a physiotherapist working in private practice, what do you consider are the main benefits of interprofessional collaboration as it relates to your clinical practice?

_____
_____
_____
_____

28. As a physiotherapist working in private practice, what do you consider are the main challenges associated with interprofessional collaboration as it relates to your clinical practice?

_____
_____
_____
_____

Section 6: General comments

29. Do you have any additional comments relating to any aspect of interprofessional collaboration in physiotherapy private practice?

_____
_____
_____
_____
_____
_____

Thank you for completing this survey.

Appendix 9: Demographic questionnaire completed by interview participants

Interprofessional practices of private sector physiotherapists in northern Queensland

1. What is your gender? (Select one)
☐ Male
☐ Female
☐ X (Indeterminate, intersex or unspecified)

2. What is your age in years? _____

3. What is the postcode of the town or city in which your private practice is located?
_____

4. In what year did you complete your entry-level physiotherapy qualification?
_____

5. Where did you complete your entry-level physiotherapy qualification? (Select one)
☐ Australia
☐ Overseas, please specify the country below:
_____

6. What is your highest tertiary qualification? (Select one)
☐ Diploma
☐ Bachelor degree
☐ Graduate certificate
☐ Graduate diploma
☐ Masters degree
☐ Doctorate
☐ Other, please specify: _____

7. Approximately how many years of clinical experience as a physiotherapist do you have (excluding breaks of one year or greater)?
_____

8. Approximately how many years have you worked/been employed in your current private practice (excluding breaks of one year or greater)?
_____

Thank you for completing this questionnaire.

Appendix 10: Semi-structure interview guide used in the qualitative phase.

1. Thank you for agreeing to chat with me, could you introduce yourself and your position/role at this practice? *(Follow-up: How would you describe your workplace?)*

2. Can you tell me what you believe interprofessional collaborative practice involves? *(How would you define interprofessional collaborative practice?)*

3. Can you tell me what interprofessional collaborative practice looks like for a physiotherapist at [insert site name here] *(Probe for: interactions with different professional groups; frequency of interactions; modes of communication; level of satisfaction; organisational culture/vision; perceived value of interprofessional collaborative practice)*

4. Do you think interprofessional collaborative practice is important? Why? *(Follow-up: Do situations exist where interprofessional collaborative practice is not important or not required?)*

5. How do you think interprofessional collaborative practice contributes (positively and/or negatively) to overall client care? *(Probe for: specific patient/client populations – nature of clinical presentation, age of patient/client, stage/severity/complexity of condition, importance/value to patient and practitioners)*

6. How do you think interprofessional collaborative practice impacts (positively and/or negatively) a physiotherapist's clinical practice? *(Probe for: nuances in the private practice setting)*

7. How do you think interprofessional collaborative practice impacts the organisations within which physiotherapists work? *(Follow-up: How does interprofessional collaborative practice impact the health care system more broadly?)*

8. Can you recall an example of a positive experience regarding interprofessional collaborative practice in your clinical practice?

9. Can you give me an example of a negative experience regarding interprofessional collaborative practice in your clinical practice?

10. What do you think facilitates or enables effective interprofessional collaborative practice for physiotherapists working in private practice? *(Probe for: shared philosophy towards holistic care; mutual respect, trust and understanding; roles and responsibilities; communication; geographic location; organisational model)*

11. What do you think are the main barriers to effective interprofessional collaborative practice for physiotherapists working in private practice? *(Probe for: power/hierarchy; tensions/conflicts; financial considerations; geographic location; organisational model; scope of professional practice; time constraints)*

12. How do you think a physiotherapy private practice's organisational model/structure influences interprofessional collaborative practice? *(Probe for: physical layout of the practice, proximity to other providers; team composition)*

13. Can you explain why a recent survey found that physiotherapy private practitioners are more likely to interact with health care professionals such as general practitioners, medical specialists (for example, orthopaedic surgeons), exercise physiologists and occupational

therapists, but less likely to interact with chiropractors, dietitians, osteopaths, pharmacists, psychologists and speech pathologists?

14. In a recent survey, a physiotherapy private practitioner made the comment that "… collaboration within allied health is fine; however, the main limitations are dealing with the medical profession due to their incredibly poor awareness of what our treatment actually is". Do you agree or disagree with that statement? *(Follow-up: What have your experiences been with medical practitioners?)*

15. Ninety-eight per cent of respondents in a recent survey indicated that interprofessional collaborative practice was necessary to provide adequate client care, but only one-third of these respondents reported that they interacted with a health practitioner from a different profession once a week or less. Can you explain this finding? *(Probe for: organisational model; orientation to treatment; time constraints)*

16. Do you think it is harder to achieve effective and sustainable interprofessional collaborative practice in regional and rural areas compared to major cities? *(Follow-up: Why/why not?)*

17. What strategies or interventions do you think need to be undertaken to improve interprofessional collaborative practice for physiotherapists in private practice? *(Probe for: training innovations; funding mechanisms; policy initiatives; overcoming challenges to effective interprofessional collaborative practice; increasing the interest of health practitioners from different professions to work together)*

18. Has participation in this research project changed your interest in interprofessional collaborative practice?

19. Is there anything else you would like to discuss regarding interprofessional collaborative practice in private practice that we have not covered in the interview?

Appendix 11: Ethics approval for the quantitative phase.

Appendix 12: Ethics approval for the qualitative phase.

Appendix 13: Participant information form used in the quantitative phase.

JAMES COOK UNIVERSITY
AUSTRALIA

Information Statement for the Research Project:

Exploring the characteristics of private physiotherapy practitioners' interprofessional interactions.

Dear Sir/Madam,

You are invited to participate in the research project identified above, which is being conducted by Jack Seaton (PhD candidate), Anne Jones (Senior lecturer, PhD supervisor), Catherine Johnston (Senior lecturer, PhD supervisor) and Karen Francis (Professor, PhD supervisor). This project forms part of Jack's Doctor of Philosophy (PhD) qualification within the College of Healthcare Sciences at James Cook University.

Why is the research being done?
Physiotherapists are encouraged to collaborate with health care providers from various professional backgrounds in order to achieve optimal outcomes for the individuals they treat. At present, little is known about the features of interprofessional collaboration from the perspectives of private physiotherapy practitioners, including information relating to their clinical interactions with health care providers from other disciplines. The aim of this study is to explore the characteristics of Australian private physiotherapy practitioners' interprofessional interactions.

Who can participate in the research?
You are eligible for inclusion in this study because you are a registered physiotherapist with the Australian Health Practitioner Regulation Agency (AHPRA) and currently working in a private practice facility within the Northern Queensland Primary Health Network (NQPHN) region, as listed on the Australian Physiotherapy Association (APA) 'Find a Physio' public database and online business directories.

What would you be asked to do?
Please read this participant information sheet carefully. If you agree to participate you will be asked to complete a short online survey. The link to the survey is contained in the email you received. The survey contains a series of questions about your professional background, your workplace and clientele, your prior training, your interactions with other health care providers, and your opinions regarding interprofessional collaboration.

What choice do you have?
Participation in this research is entirely your choice. Only those who give their informed consent will be included in the project. Completion and submission of the online survey will be taken as your implied consent to participate. Please note that you will not be able to withdraw your response after it has been submitted.

How much time will it take?
The survey should take approximately 10 minutes to complete.

What are the risks and benefits of participating?
Upon completion of the project, you will be given the opportunity to receive and discuss feedback about the study findings that may help to inform your clinical practice. There are no anticipated risks associated with participating in this research.

How will your privacy be protected?
The survey you complete will be confidential and the responses you provide will be de-identified. The survey will be password protected and only the research team will be able to access the data. The data will be transferred from the internet and stored on a password protected James Cook University computer. Data will be retained for a minimum of five years as per James Cook University requirements.

How will the information collected be used?
The collected data will contribute towards Jack Seaton's PhD research project. Data will be prepared for submission to an appropriate scientific journal and may be presented at academic conferences in the future. Details related to this project may also be published in *InMotion*, the official newsletter of the Australian Physiotherapy Association. Individual participants will not be named or identified in any reports arising from the project, although de-identified written responses may be quoted for authenticity.

What do you need to do to participate?
Please read this participant information sheet and be sure you understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, please contact the research team. If you would like to participate, please access the survey via the link provided in the email inviting you to participate. If you have any difficulties accessing the online survey, please contact Jack Seaton for assistance. Submission of the survey will be taken as your implied consent to participate.

Further information
If you would like further information, please contact Jack Seaton on 07 4781 6680 or Jack.Seaton@my.jcu.edu.au

Thank you for considering this invitation.

Principal Investigator:
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Supervisor:
Dr Anne Jones
College of Healthcare Sciences
James Cook University, Townsville
Phone: 07 4781 4085
Email: Anne.Jones@jcu.edu.au

Complaints about this research
This project has been approved by the University's Human Research Ethics Committee, Approval No. H7639.

If you have any concerns regarding the ethical conduct of the study, please contact:
Human Ethics Research Office
James Cook University, Townsville, QLD, 4811
Phone: (07) 4781 5011
Email: ethics@jcu.edu.au

Appendix 14: Participant information form used in the qualitative phase.

JAMES COOK UNIVERSITY
AUSTRALIA

INFORMATION SHEET

PROJECT TITLE: Interprofessional collaboration in physiotherapy private practice in Australia: An interpretive descriptive study.

Dear Sir/Madam,

You are invited to take part in a research project exploring the process of interprofessional collaboration in physiotherapy private practice. The study is being conducted by Jack Seaton (PhD candidate), Dr Anne Jones (primary supervisor), Dr Catherine Johnston (secondary supervisor) and Professor Karen Francis (secondary supervisor). This project forms part of Jack's Doctor of Philosophy (PhD) qualification within the College of Healthcare Sciences at James Cook University.

PROJECT SIGNIFICANCE
Interprofessional collaboration is a complex process characterised by the relationships and interactions between health practitioners from diverse professional backgrounds. Effective interprofessional collaboration produces positive outcomes and is an expected standard of care for all health practitioners. Although the need for interprofessional collaboration is widely acknowledged, there is a paucity of literature investigating this process within the physiotherapy private practice setting. The aim of this study is to conduct an in-depth qualitative exploration of interprofessional collaboration in physiotherapy private practice in Australia. The findings from this project may serve as the foundation that policymakers can use to develop strategies aimed at enhancing the nature and quality of clinical interactions between physiotherapy private practitioners and other health professionals.

DESCRIPTION OF INVOLVEMENT
The researcher will conduct formal one-on-one interviews with registered physiotherapists employed in a private practice facility within the Northern Queensland Primary Health Network (NQPHN) region. The purpose of these interviews is to explore your perceptions, attitudes and opinions regarding interprofessional collaboration within the context of private practice. Interviews will be conducted in a private area within your workplace. The interview, with your consent, will be digitally recorded, and should only take 30–60 minutes of your time.

The researcher will also undertake observations involving physiotherapists at different times of the day and week. The purpose of these observations is to collect data about physiotherapists' behaviours and interactions regarding interprofessional collaboration during various structured and unstructured events. Activity will be observed in staff areas throughout the facility (e.g. conference rooms, offices, corridors). During this time, the researcher will also have informal conversations physiotherapists working at your facility to explore emergent questions and ideas. Observations of people presenting to your private practice for physiotherapy consultation (i.e. patients) will not be documented.

Participation in this study is completely voluntary and you can withdraw at any time without explanation or prejudice. There are no anticipated risks associated with participating in this research. The information that you share will be treated as confidential and data you provide will be de-identified ensuring that your identity is protected. The collected data will contribute towards Jack Seaton's PhD thesis. Data will also be prepared for submission to appropriate academic journals and may be presented at relevant conferences and workshops in the future. Individual participants will not be named or identified in any reports arising from the project, although de-identified interview responses may be quoted for authenticity.

If you have any questions about the study, please contact Mr Jack Seaton or Dr Anne Jones.

Principal Investigator:
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If you have any concerns regarding the ethical conduct of the study, please contact:
Human Ethics, Research Office
James Cook University, Townsville, Qld, 4811
Phone: (07) 4781 5011 (ethics@jcu.edu.au)

Appendix 15: Informed consent form used in the qualitative phase.

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Appendix 16: Published article in the Australian Physiotherapy Association's *InMotion* magazine.

Working with other professions

WORKPLACE RESEARCH Jack Seaton, Dr Anne Jones, Dr Catherine Johnston and Dr Karen Francis discuss the findings of a research project looking into the benefits of and barriers to interprofessional collaboration in private practice.

Interprofessional collaboration (IPC) is a complex social phenomenon defined by the relationships and interactions that occur between health practitioners from various professional backgrounds (World Health Organization 2010). When performed successfully, IPC contributes to positive patient outcomes, cost-effective healthcare and higher satisfaction levels for both patients and practitioners (Reeves et al 2017).

A recent research project investigated IPC in physiotherapy private practice facilities in northern Queensland. The project consisted of two phases—an online survey of 49 physiotherapists followed by a qualitative approach involving individual semi-structured interviews with 28 physiotherapists and 64 hours of observation across 10 private practice facilities. Ethics approval was obtained from the James Cook University Human Research Ethics Committee (H7639/H7951).

Why was this research needed?

The small-scale monoprofessional clinic, employing only physiotherapists or relying on a sole practitioner model of care, has traditionally been the dominant service delivery model in physiotherapy private practice in Australia. Many physiotherapists have thrived in these clinics; however, their opportunities for interaction with health practitioners from other professions may be limited. We are not suggesting that the monoprofessional model is outdated or less effective, but as the potential benefits of IPC are increasingly recognised and the proportion of physiotherapists entering private practice continues to climb, there was a pressing

need to explore how combining the knowledge and skills of health practitioners from diverse professions can lead to more holistic and comprehensive care.

What did the research find?

We found that physiotherapy private practitioners valued IPC because of its potential to significantly enhance the quality of patient care:

'I think it's extremely important to have interprofessional collaboration in place for the client to address their needs comprehensively.'

Engaging in IPC also enabled many physiotherapists to establish stable referral bases with health professionals from various external organisations:

'Interprofessional collaboration is really good for your business model. In private practice, you get… timely referrals and… more appropriate referrals.'

Many physiotherapists believed that working in an interprofessional manner was more professionally rewarding and personally satisfying when compared to practising in isolation from other professions:

'It's definitely more rewarding. It's eye-opening. You find out about your other clinicians and other professions in a more intimate way and it's actually quite rewarding in that aspect too. It's definitely more interesting.'

However, our survey found that although 98 per cent of physiotherapists working in private practice considered IPC necessary to provide adequate person-centred care, they reported their interprofessional interactions to be infrequent and mostly limited to informal exchanges with health practitioners from a small number of professions.

Financial challenges, including physiotherapy private practitioners' perceived need to compete for clientele, emerged as significant barriers to effective IPC. Many physiotherapists admitted that protecting their income was often a higher priority than IPC and referring patients to health professionals working at other organisations was perceived to result in lost clientele:

'It's private practice; it's a competition. If you don't see people… and if patients want to go to someone else instead of you, then you're not making money and you don't have a job and you can't employ other people. So, do we really want to involve… other professions?'

Time constraints and workload schedules also presented challenges for IPC. A perceived lack of time was reported as a major barrier to IPC by most physiotherapy private practitioners:

'Interprofessional collaboration fluctuates depending primarily on how busy people are. The biggest barrier to interprofessional collaboration is definitely the lack of time needed to perform it.'

Some physiotherapists said that there was not enough time during work hours to take part in IPC and claimed that treating patients during this time was their highest priority, rather than participating in interprofessional work:

'I think the most important thing about clinic time is treating people. Taking however many hours to… write an email… a letter, you're taking that time away from treating patients and if you've got 50, 60 plus patients a week, there's very little time for anything else.'

Additionally, physiotherapists who were physically separated from other health professions due to their geographical location reported barriers to IPC. Many physiotherapists emphasised that workforce shortages in regional and rural areas made it more challenging to collaborate effectively:

'Working regionally, it's very difficult not to be siloed… because Australia… has a very small number of health professionals in regional areas. So, it's difficult to find somebody… to collaborate with in regional Australia.'

> We are not suggesting that the monoprofessional model is outdated or less effective… there was a pressing need to explore how combining the knowledge and skills of health practitioners from diverse professions can lead to more holistic and comprehensive care.

Did the research reveal any facilitating factors?

Close physical proximity of multiple health practitioners was regarded by physiotherapists to be a key enabler of IPC. For example, physiotherapists employed in multi-professional clinics reported having more opportunities to interact with clinicians from other health professions than those working as sole traders or in monoprofessional private practices:

'We're lucky here because we see that interdisciplinary approach as a formality. It's easy for us because we have so many different professions under the same roof. I guess it's a lot trickier for smaller private practices that only employ physios.'

Physiotherapists who worked at clinics that were co-located with other health services also considered this arrangement to facilitate IPC. Co-location refers to health services that are situated in the

same physical space, although they are not necessarily fully integrated with one another:

'We've got professions like dietetics and psychology in our complex… so we invite them over and have lunch and we do in-services with them.'

The spatial layout of physiotherapy private practice facilities was seen to influence the ease and frequency of interprofessional communication. At several clinics, the use of informal shared spaces was seen to enhance IPC by promoting socialisation and building rapport among team members. The break room at one practice was a medium-sized space where many staff, including physiotherapists, would attend to complete non-clinical tasks such as typing notes:

'I really like going there to do charts because it's a… quiet space away from patients where I can… focus and get my work done without interruption. It's also nice to have the opportunity to interact with colleagues in a more relaxed setting… where we can chat about cases, bounce ideas off each other and… take a break from the intensity of the clinical environment.'

What else can be done to support IPC in private practice?

To create a more conducive environment for IPC, physiotherapists highlighted the need for a multifaceted approach, addressing funding and compensation issues, enhancing digital communication systems and optimising interprofessional education and training.

Physiotherapy private practitioners providing services through the Medicare chronic disease management program argued that the scheme did not account for the coordination and collaboration efforts required to comprehensively address the complex healthcare needs of people with chronic conditions. Subsequently, these physiotherapists stressed the need to increase the Medicare rebate for people receiving physiotherapy within the chronic disease management program to better reflect the time needed to perform interprofessional tasks, such as writing letters and reports to referring medical practitioners:

'Clinicians need to be compensated for the time they spend liaising with other health professionals. It's as simple as that.'

Physiotherapists also called for improved shared communication tools and user-friendly digital platforms that allow for seamless information exchange among health practitioners regardless of workplace location. The potential of My Health Record to support IPC between health practitioners from various clinical settings was acknowledged but it had not met physiotherapists' expectations:

'It is beneficial… to have unrestricted access to… medical information. That can… help interprofessional practice, but there's… too many ethical considerations with the My Health Record. I… have taken myself off it, so why would I use it with my clients?'

Physiotherapists encouraged the university sector to play a greater role in supporting IPC. Integrating more mental health content into entry-level physiotherapy curricula was proposed as a means of fostering understanding and facilitating collaboration between health practitioners from different professions in addressing patients' physical and mental health conditions:

'Our knowledge of mental health… as a profession… is poor, so I don't think it's any surprise that physiotherapists don't interact with psychologists because we're probably too embarrassed to look stupid in front of them… so that… definitely needs to be focused on more [at university]. I think it will go a long way in improving collaboration between physiotherapists and psychologists… and… OTs [occupational therapists].'

What are the implications for practice?

This research highlights the complexities faced by physiotherapy private practitioners in implementing IPC in their clinical practice while laying the groundwork to inform policymaking that will advance patient care and optimise the integration of services in Australia's healthcare system. Recognising and acting on the recommendations arising from this project will help ensure that IPC is not merely a conceptual ideal but a consistently practised reality in the Australian physiotherapy private practice setting.

Scan the QR code for references.

Jack Seaton APAM is an adjunct lecturer and PhD candidate at James Cook University. He also serves on the APA Queensland Branch Council and National Rural Advisory Committee.

Dr Anne Jones APAM is an associate professor and the Head of Physiotherapy at James Cook University. Her research interests include cardiorespiratory physiotherapy, clinical education, rural service delivery models and simulation-based learning.

Dr Catherine Johnston is a senior lecturer and the Clinical Education Manager at the University of Newcastle. Her research interests include clinical education in physiotherapy and cardiopulmonary physiotherapy.

Dr Karen Francis is a professor and the Associate Head of Research and Graduate Studies at Charles Sturt University. She is internationally recognised for her contribution to the development of rural nursing as a specialist discipline.