Role of Pharmacists in Transgender Healthcare

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Acknowledgements

***"Alone we can do so little; together we can do so much."* – Helen Keller**

I would like to extend my heartfelt gratitude to all those who contributed to the successful completion of this research, encompassing a diverse range of individuals and organisations. First and foremost, I would like to express my sincere appreciation to the participants of this study, whose insights and experiences formed the cornerstone of my research. The unwavering support from the trans and gender diverse (TGD) communities, Support Groups and Organisations, as well as the Administrators of Pharmacists' Social Media Groups, played an indispensable role in the realisation of this endeavour. I am also deeply grateful to The Pharmaceutical Society of Australia and The Pharmacy Guild of Australia for their invaluable guidance and resources throughout this journey.

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This research's success is the result of a collective effort, and I am honoured to have collaborated with such exceptional people and organisations. Thank you all for your unwavering support and contributions.

Statement of the Contribution of Others

Each of the authors of the manuscripts for the publications from Chapters 2 and 3-8 of the thesis certify that they have participated in conception, execution, or interpretation for their part of the publication. They have also given their consent for the publication and inclusion of these manuscripts in this thesis.

Swapna Chaudhary Daniel Lindsay Robin A. Ray Beverley D. Glass

Position Statement

As a researcher with a background in pharmacy, I am compelled to address the critical issue of transgender and gender diverse (TGD) healthcare and the challenges surrounding its availability and accessibility. My personal experience as a pharmacist and the difficulties I encountered in finding comprehensive information about TGD care have motivated me to undertake research in this area.

Throughout my career as a pharmacist, I have had the privilege of serving diverse patient populations. However, when faced with the task of providing optimal care to TGD people, I discovered a glaring gap in the available resources and knowledge. This knowledge deficit not only hindered my ability to deliver inclusive and affirming care but also raised concerns about the broader healthcare system's preparedness to address the unique needs of TGD patients.

Having experienced a lack of inclusion of TGD healthcare in my undergraduate pharmacy degree, I looked for continuing professional education (CPE) activities that may be available for upskilling in this area. However, I could not find any pharmacy-specific content in Australian professional journals for pharmacists. This omission perpetuates a cycle of limited knowledge and inadequate training among healthcare professionals, leading to suboptimal care and potential health disparities for TGD people. Recognising the urgency to bridge this educational gap, I was driven to conduct research that would inform the development of comprehensive and inclusive educational resources and training programs for pharmacists.

My research aimed to fill the void in TGD healthcare knowledge by investigating the existing barriers, identifying gaps in education, and developing evidence-based solutions to enhance TGD care delivery. By employing rigorous methodologies, such as literature reviews, and qualitative interviews, and surveys, I gathered critical insights from pharmacists and TGD people, the key stakeholders, to inform recommendations for future policies, practice guidelines, and educational reforms.

Through this research, I aspire to contribute to the broader movement for equitable and inclusive healthcare for TGD people. By generating new knowledge, raising awareness, and advocating for policy changes, I aim to improve healthcare outcomes, reduce disparities, and enhance the overall well-being of this underserved population.

Moreover, my research endeavours extend beyond academic exploration. I am committed to engaging with healthcare organisations, professional associations, and regulatory bodies to foster collaboration and facilitate the integration of TGD healthcare competencies into curricula and CPE activities. By actively participating in the dissemination of research findings and offering guidance on

best practices, I strive to empower healthcare professionals to provide culturally competent and affirming care for TGD people.

As a pharmacist researcher studying TGD health in pharmacy, I recognise the importance of considering both emic (insider) and etic (outsider) perspectives in my research. I understand that subjectivity due to my own culture, upbringing, life experiences and education may influence data collection, analysis and interpretation in this research. However, the practice of reflexive journalling and discussing potential biases during regular meetings with my PhD supervisors assisted in counteracting this subjectivity. I adopted an emic perspective to understand the experiences and viewpoints of TGD people from within their own cultural and social context. It involved listening to their narratives, exploring their unique needs, and acknowledging the challenges they face when accessing pharmacy services. Through the lens of an emic perspective, I aimed to shed light on the lived experiences of TGD people, their healthcare journeys, or their interactions with the pharmacy profession. This approach allowed me to develop interventions and strategies that are tailored to their specific needs, improving healthcare outcomes and promoting inclusivity.

On the other hand, employing an etic perspective allowed me to view TGD health in pharmacy through a broader lens that encompasses universal healthcare principles and standards. This perspective involves analysing TGD health issues within the healthcare system, identifying common challenges faced by TGD people across pharmacy settings, and exploring potential solutions from a professional standpoint. By incorporating an etic perspective, I examined structural barriers, policy implications, and gaps in the pharmacy profession's understanding of TGD health. This enabled me to contribute to the development of recommendations for evidence-based guidelines and policies that can guide pharmacists in delivering TGD-inclusive care.

By integrating both emic and etic perspectives into my research, I strived for a comprehensive understanding of TGD health in pharmacy. This dual approach enabled me to bridge the gap between the unique experiences of TGD people and the broader healthcare system, promoting equity, inclusivity, and improved healthcare outcomes for this marginalised population. It also highlighted the importance of collaboration between TGD communities and healthcare professionals, fostering a patient-centred approach that values and respects autonomy and well-being of TGD people.

In summary, my experience as a pharmacist and the challenges I encountered in accessing information and resources about TGD care fuelled my determination to contribute to this field through rigorous research. By addressing the gaps in knowledge, education, and practice, I aim to promote inclusivity, improve healthcare outcomes, and advance the well-being of TGD people.

Abstract

Background:

Despite the global recognition of gender diversity, some trans and gender diverse people may be reluctant to access healthcare based on their prior encounter with healthcare providers. Pharmacists, being easily accessible to the public, have a crucial role in the provision of healthcare to transgender people. However, many pharmacists have reported both low levels of confidence in the provision of transgender healthcare and a lack training to provide such care.

Objectives:

The objectives of the study are: (1) to explore the expectations of trans and gender diverse people have of pharmacists providing transgender care; (2) to determine attitudes, practices, and training needs of pharmacists in the provision of trans and gender diverse care; and (3) to design, deliver and evaluate a trans and gender diverse-specific training program for pharmacists and pharmacy students with a view of integrating this training into pharmacy curriculum.

Methods:

A transformative lens was utilised to design and conduct this study. This two-phase study explored the role of the pharmacist in transgender healthcare by investigating trans and gender diverse people's expectations of pharmacists and by evaluating the attitudes and practice of pharmacists in the provision of this care (Stage One). A sequential exploratory mixed method design was applied in Stage One where first, qualitative interviews with trans and gender diverse people and pharmacists residing in Queensland, Australia were conducted using narrative enquiry. Secondly, interview data informed the development of a survey for pharmacists administered nationally using a Qualtrics platform. The combined data from this first phase informed the design, delivery, and evaluation of a training program for pharmacists and pharmacy students to equip them with knowledge of trans and gender diverse care and provide better health outcomes for this underserved population (Stage Two). Pre-and post-test training surveys completed by the participating pharmacists and pharmacy students evaluated the change in their awareness and knowledge about trans and gender diverse care. Three-month outcome evaluation interviews with pharmacists explored the impact of the training program on their practice of providing care for trans and gender diverse people.

Results:

Twenty-two trans and gender diverse people and twenty pharmacists participated in the interviews and 169 pharmacists completed the national survey. Although trans and gender diverse people

emphasised that pharmacists' role was important in their care, they recommended additional education about trans and gender diverse care for pharmacists and pharmacy students. Various barriers to providing pharmaceutical care were identified by trans and gender diverse people and pharmacists including, stigma, communication challenges, compromised privacy and confidentiality and pharmacists' knowledge gaps in trans and gender diverse healthcare. Pharmacists exhibited positive attitudes towards providing care to trans and gender diverse people, while, recognising major gaps in their knowledge and requesting more training in trans and gender diverse healthcare and communication strategies so that they could provide culturally appropriate care to trans and gender diverse people.

The training program and the pre-and post-test surveys were completed by fifty-six pharmacists and twenty-one pharmacy students. Ten pharmacists participated in post-training evaluation interviews. The pre-and post-test statistical analysis revealed significant improvement in the awareness scale ($p < 0.001$ for pharmacist, $p = 0.006$ for students), knowledge scale ($p < 0.001$ for both pharmacists and students) and the total score ($p < 0.001$ for both pharmacists and students) for both groups after completion of the training program. Pharmacists participating in outcome evaluation interviews found that the training positively impacted their communication and approach to trans and gender diverse people and transformed their practice. Most of them identified three common barriers in providing care to trans and gender diverse people in pharmacy - societal and personal beliefs, lack of privacy and confidentiality, and lack of awareness about trans and gender diverse health among pharmacists and staff. Evaluation surveys and interviews revealed that the pharmacists and the students found the program comprehensive and relevant to their practice. They suggested implementing this program on a broader level to promote the availability of training and resources in trans and gender diverse healthcare for pharmacists and staff, improving personal and societal attitudes towards trans and gender diverse people.

Conclusion:

This research illuminated the gaps in pharmacists' knowledge about trans and gender diverse care considering input from stakeholders including pharmacists and trans and gender diverse people. It provided a platform to integrate voices of the trans and gender diverse people to inform and develop the training program about trans and gender diverse healthcare for pharmacists and pharmacy students. This training program assisted in developing non-judgmental attitudes towards people from these marginalised communities and increased awareness and knowledge about trans and gender diverse care in pharmacy. The outcomes provide the foundation for transformation of

pharmacy practice in providing care for TGD people. This study has established groundwork for future training programs, guidelines and policies about trans and gender diverse care.

Publications in Support of this Thesis (in Chapter order)

Chaudhary S, Ray R, & Glass B. (2021) *Pharmacists' role in transgender healthcare: A scoping review*. Research in social and administrative Pharmacy.

> ***This article was featured on the social media pages of RSAP journal and received a vote of thanks from the chief editor for contributing this piece to their journal.***
>
> *"Thank you for contributing this terrific piece to the journal! We are always on the lookout for quality reviews."* ***– Professor Shane Desselle****, Editor-in-Chief, Research in Social and Administrative Pharmacy*

Chaudhary S., Ray R., & Glass B. D. (2022). *"Treat us as a person": A narrative inquiry of experiences and expectations of interactions with pharmacists and pharmacy staff among people who are transgender.* Exploratory Research in Clinical and Social Pharmacy, 8, 100198–100198. https://doi.org/10.1016/j.rcsop.2022.100198

> ***This article was featured on the social media pages of ERCSP journal and received a vote of thanks from the chief editor for contributing this piece to their journal.***

Chaudhary, S., Ray, R., & Glass, B. D. (2023). *"I don't know much about providing pharmaceutical care to people who are transgender": A qualitative study of experiences and attitudes of pharmacists.* Exploratory Research in Clinical and Social Pharmacy, 9, 100254–100254. https://doi.org/10.1016/j.rcsop.2023.100254

> ***This article was featured on the social media pages of ERCSP journal and received a vote of thanks from the chief editor for contributing this piece to their journal. It was also shared on social media by Trans Research Group (Melbourne) and Dr Ada Cheung.***

Chaudhary, S., Lindsay, D., Ray, R., & Glass, B. D. (2023). *Do the attitudes and practices of Australian pharmacists reflect a need for education and training to provide care for people who are transgender?* International Journal of Pharmacy Practice. https://doi.org/10.1093/ijpp/riad077

Chaudhary, S., Ray, R., & Glass, B. D. (2023). *Answering the call for community pharmacists to improve healthcare delivery to trans and gender diverse people: Guide for designing, implementing, and evaluating an online education program in Australia.* Pharmacy. doi:10.3390/pharmacy12010007

Chaudhary, S., Lindsay, D., Ray, R., & Glass, B. D. (2023). *Evaluation of a transgender health training program for pharmacists and pharmacy students in Australia: a pre-post study* Exploratory Research in Clinical and Social Pharmacy. doi:10.1016/j.rcsop.2023.100394

Conference Proceedings, Presentations, Awards, and Media

Other scholarly publications.

Australian Pharmacist – the professional journal for pharmacists published by the Pharmaceutical Society of Australia invited me to write the first three publications listed here.

Chaudhary S. *Fostering cultural safety - Case study 1: Gender-affirming care for trans and gender diverse people in pharmacy.* Australian Pharmacist. Feb 23.

Chaudhary S, Ray R, Glass B. *Pharmacists providing healthcare to transgender and gender diverse patients*. Australian Pharmacist. 2022.

Chaudhary S. *Tips to providing culturally appropriate care to people who are transgender.* Australian Pharmacist Newsletter. March 2022. https://www.australianpharmacist.com.au/providing-culturally-appropriate-care-transgender-patients/

Chaudhary S, Ray R, Glass B. *Transgender healthcare: This is our role*. Australian Journal of Pharmacy. 2021;102(1208).

This article was shared on social media pages by Dr Fiona Bisshop and the Sexual Health Society of Queensland.

> *"Does your pharmacist need to read this? It's a great article on the role of the pharmacist in gender affirming care."*- **Dr Fiona Bisshop**, General Practitioner, Former President of the Australian Professional Association for Trans Health.
>
> *"This is a great article on the role of the pharmacist in gender affirming care and the importance of making sure all health professionals are offering inclusive health care."* **The Sexual Health Society of Queensland.**

I was invited to review the 'Equality Position Statement' published by the Pharmaceutical Society of Australia. This Equality Position Statement can be accessed via the following link. https://my.psa.org.au/s/article/Equality-Position-Statement

Conference proceedings.

Chaudhary S, Ray R, Glass B. *Role of Pharmacists in Transgender Healthcare.* Poster presentation at the Pharmaceutical Society of Australia 2021 Conference.

Chaudhary S, Ray R, Glass B. *"Can we do better": A qualitative study of the interactions between pharmacists and trans and gender diverse people*. Poster presentation at the FIP International Congress 2023.

Invited presentations.

Primary Health Network Western Queensland and Murtupuni - Centre for Rural and Remote Health
Title - **Transgender Healthcare - Implications for Practice (Feb 23)**

PSA 23: The Pharmaceutical Society of Australia's National Pharmacy Conference
Title - **We think we know but do we really know? Communication with Trans and Gender Diverse Empathy (July 23)**

The Rural Pharmacy Support Network (RPSN), Pharmaceutical Society of Australia (PSA) and NSW Rural Doctors Network (RDN)
Title - **LGBTQIA+ People's Health – A two-part webinar series (Sept 23)**

Awards and nominations.

Winner, 2023 PSA QLD Early Career Pharmacist of the Year, The Pharmaceutical Society of Australia Queensland Excellence Awards (Sept 2023)

Winner, LGBTQ Inclusive Innovation Award at ACON's 2023 Pride in Health and Wellbeing Awards (April 23)

Nomination for CSL Flory Next Generation Award (Nov 2023)

Winner (1st Prize) Three-minute thesis (3MT) Competition, College of Medicine and Dentistry, James Cook University (Aug 2022)

Nomination for the Ally of the Year Award at the 2021 at Trans Community Awards presented by Many Genders One Voice and Queensland Council for LGBTI Health (Nov 2021)

Media.

The Indian Sun (Oct 2023)
Dispensing dignity: Townsville's trans health advocate
https://www.theindiansun.com.au/2023/10/11/dispensing-dignity-townsvilles-trans-health-advocate/
This interview was shared on the social media pages of Nick McCaffrey – the Australia's Deputy High Commissioner to India.

Australian Journal of Pharmacy (Apr 23)
CWH pharmacist scoops LGBTQ+ honour

Pharmacy Daily
CW's winning efforts gets Pride award (6th Apr 23)

Australian Pharmacist

Hava, C., PSA champions equal healthcare for the LGBTIQA+ Australians. Feb 2023. https://www.australianpharmacist.com.au/psas-champions-equal-healthcare-lgbtiqa-australians/

The Pharmaceutical Society of Australia (Feb 2023)
PSA launches its first Equality Statement
https://www.psa.org.au/psa-launches-its-first-equality-statement/#:~:text=Everyone%20should%20have%20equal%20access,appropriate%20way%20for%20all%20people.

This media article featured the continuous professional development article "Chaudhary S, Ray R, Glass B. Pharmacists providing healthcare to transgender and gender diverse patients. Australian Pharmacist. 2022." as the education resource endorsed by the PSA for educating pharmacists on transgender and gender diverse care.

Pharmacy Daily
Gender awareness education needed (10th Nov 22)

Interview IDAHOBIT Day 2022
Killoran, T., *Affirming Healthcare for all.* May 2022. https://www.jcu.edu.au/this-is-uni/health-and-medicine/articles/affirming-pharmacy-healthcare-for-all

This interview was featured on the main webpage of James Cook University and shared on the social media pages of James Cook University to celebrate IDAHOBIT Day. We received an overwhelming response supporting this research initiative. Below is the comment from an email our Head of Pharmacy - JCU received.

> *"Great to see Pharmacy receiving such a positive response in social media and beyond for this research and initiative. I commend you and your colleagues for ensuring equal care for all. The frontline role that pharmacists fill is increasingly vital as they are available and accessible when other health services are not."- **Adjunct Associate Professor Felicity Crocker, James Cook University.***

Abbreviations

CPE: Continuing Professional Education

CrCl: Creatinine clearance

CROSS: Checklist for Reporting Of Survey Studies

CSHT: Cross-sex hormone therapy

EMR: Electronic medication record

HREC: Human Research Ethics Committee

JCU: James Cook University

LGBT: Lesbian, gay, bisexual and transgender

LGBTQIA: Lesbian, gay, bisexual and transgender, queer, intersex and asexual

MMM: Modified Monash Model

PGA: The Pharmaceutical Guild of Australia

PSA: The Pharmaceutical Society of Australia

SRQR: Standards for Reporting Qualitative Research

TG/TGD: Trans and gender diverse

TGNC: Transgender and gender-nonconforming

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Chapter 1: Introduction

As frontline healthcare professionals, pharmacists interact with diverse patient populations daily.[1] As societal norms and attitudes towards gender diversity and inclusivity evolve, more trans and gender diverse (TGD) people are accessing healthcare than ever before.[2] Thus, it is essential for healthcare professionals, including pharmacists, to embrace their role in providing culturally competent gender-affirming care.[1,3] TGD people often encounter barriers to healthcare access, and previous studies have suggested that this challenge extends to the pharmacy setting.[1,3,4] Therefore, it is essential to identify the role of pharmacists in TGD healthcare and identify and address the barriers to providing care for TGD people. Although pharmacists can play an important role in improving the healthcare outcomes and overall well-being of the TGD people, there is limited research about both their role in TGD healthcare and educational opportunities in TGD healthcare.[1,3]

In recent times, gender diversity is being recognised globally, and efforts have been directed towards maximising the overall health and well-being of trans and gender diverse (TGD) people, with significant progress in many countries in regard to legal recognition, healthcare access and societal acceptance.[5] The World Professional Association for Transgender Care (WPATH) has published an informed consent model and the standards of care for TGD people to educate health professionals.[6] Moreover, recently, a position statement on the hormonal management of adult TGD patients and Australian informed consent standards of care for gender-affirming hormone therapy were released to guide Australian medical practitioners providing gender-affirmation therapies for TGD people.[7] Furthermore, attempts are being made to depathologise gender variance and reduce the associated stigma.[8] In the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5), the diagnosis of gender identity disorder (GID) has been replaced with gender dysphoria.[8] In addition, in the International Classification of Diseases edition 11 (ICD-11), the term GID has been replaced with gender incongruence, and the condition has been removed from the mental and behavioural disorders.[5] Despite these changes, many TGD people often experience discrimination and marginalisation while accessing healthcare.[9]

1.1 Who are TGD people?

The term TGD includes individuals whose gender identity differs from their assigned sex at birth.[10] TGD people may use various terms to describe their gender identity, such as transgender, non-binary, agender, genderqueer, genderfluid, sistergirl, and brotherboy.[10] Although there are no accurate statistical data about how many people in Australia are TGD, it is estimated that about 0.5-1.2% of individuals identify as TGD worldwide.[11,12] TGD people have existed and played significant roles in their societies throughout history and globally. In India, for instance, the concept of "Hijra"

dates back thousands of years, with Hijras being recognised as a distinct gender category, often taking on religious and social roles.[13] Similarly, in various Indigenous cultures in Australia, there are examples of diverse gender identities that were honoured and acknowledged long before colonisation.[13,14] For example, sistergirls, integral members of these communities, were embraced and celebrated for their gender identities while steadfastly fulfilling traditional roles as daughters, sisters, aunties, and mothers, contributing to the rich tapestry of indigenous societies.[14]

1.2 Health Disparities and the Pharmacist's Role

TGD people experience distinct health disparities arising from a combination of individual, interpersonal and system level barriers such as social stigma, discrimination, misplaced focus on being transgender than their physical ailment, a lack of understanding of TGD healthcare needs among healthcare providers, and inadequate healthcare provider training in TGD health.[1,15,16] To address disparities in health for this underserved population and provide person-centred care, pharmacists should be well-informed about the unique healthcare requirements of TGD people.[1,3]

When TGD people navigate healthcare systems, they might encounter what is commonly referred to as "trans broken arm syndrome."[16] This term generally indicates the inaccurate assumption or belief of the healthcare professional that a root cause of the health issue of a TGD person is related to their gender identity or gender affirmation or asking intrusive and unnecessary questions about a TGD person's gender identity or gender affirmation status when treatment of the health condition does not necessarily require such additional information.[16] As a result of misplaced focus on being TGD, these clients experience mistreatment in healthcare facilities.[16] Such mistreatment often results in not presenting to medical treatment or delaying medical assistance because of concerns about cultural competence and TGD health knowledge of the healthcare professional.[16]TGD people often face higher rates of mental health challenges such as depression, anxiety, and suicidal ideation than the general population.[1,15] Gender affirming hormone therapies reduce depression, suicidality, and gender dysphoria.[17,18] Gender dysphoria is defined as the distress experienced by TGD people when their gender identity does not align with their assigned sex at birth.[1] Gender affirmation is a unique journey for each TGD person.[1] Some but not all TGD people may want to use hormonal therapy, an aspect of healthcare, to match their physical characteristics with their gender identity.[1] Pharmacists can play a key role in the safe and effective management of hormone therapies, ensuring correct dosages, monitoring potential interactions with other medications, and providing ongoing support and counselling, ultimately enhancing healthcare outcomes for TGD people.[1,3,,19,20] With their understanding of the mental health aspects of TGD care, pharmacists can promote holistic well-being and prevent adverse health outcomes.[21]

Despite pharmacists being capable of resolving many health disparities experienced by TGD people, many TGD people have reported feeling anxious while accessing pharmaceutical care.[22] Stigma towards TGD people may contribute to negative healthcare encounters in pharmacy, where TGD people may face bias, discrimination, or discomfort, hindering their access to culturally respectful and equitable pharmaceutical care.[1,22] Stigma towards TGD people often arises from cisnormative and transphobic attitudes.[23] Cisgenderism or cisnormativity assumes the existence of only binary categories of gender and being cisgender as the only normal way of expressing gender.[24] It considers cisgender people (identifying with the same sex as assigned to them at their birth) as superior and rejects all other gender identities.[23] Cisgenderism pathologises gender identity and often results in harming TGD people by using cisnormative language, misgendering, mispronouning, assumption of gender identity, and not recognising the healthcare needs of people who do not identify with the traditional gender binary.[23-25] The term "transphobia" describes negativity towards TGD people in the form of feelings, words or bodily harm.[23] Addressing cisnormative and transphobic attitudes is critical to creating more inclusive healthcare systems and society.[4,24] Using non-gendered language and understanding and accepting the diverse gender identities and expressions, health professionals, including pharmacists, can improve the healthcare delivery to this marginalised group, improving overall health outcomes for the TGD communities.[24] A recent study found that non-binary people experienced more cisgenderism and transphobia than binary transgender people in a healthcare setting, indicating more need for education for healthcare professionals and adaptation of healthcare systems to accommodate the cultural needs of non-binary people to achieve gender inclusivity.[23] Representation of non-binary people in the scholarly literature about TGD care is limited.[26]

A small number of studies offer significant and valuable perspectives about pharmacists' attitudes toward TGD people.[27-29] These studies highlighted that pharmacists perceived their role was important in TGD care; however, most pharmacists lacked confidence in their ability to provide effective and appropriate care to this population.[27-30] This lack of confidence stemmed from the absence or limited education about TGD care in pharmacy curricula and continuing professional education (CPE).[27-30] A previous study has shown that TGD people may delay or avoid accessing care from pharmacies because of their previous negative experiences, perceived lack of knowledge about TGD care by the pharmacist and fear of discrimination.[22] However, all these studies were conducted overseas, and there is no study that exclusively explores the attitudes and practices of Australian pharmacists. One recent study by Langdon et al. investigated perceptions of Australian pharmacists

about LGBTQIA+ care and found that pharmacists lacked confidence in their knowledge of gender affirming therapies because of a lack of resources and training in TGD healthcare.[30]

According to the Professional Practice Standards (PPS)[31] developed by the Pharmaceutical Society of Australia (PSA), "pharmacists must collaborate and deliver culturally responsive, patient-centered care and promote the judicious use of medications for all patients." The recently published 'Equality Position Statement' by the PSA recommends providing non-judgmental and inclusive care for lesbian, gay, bisexual, transgender, queer, intersex, asexual, and all other people of a diverse gender or sexual orientation (LGBTQIA+) visiting pharmacies.[24] Further, the 'Equality Position Statement' advocates for the integration of LGBTQIA+ education in all pharmacy curricula and continuing professional education for pharmacists.[24] However, whether these directives from the PSA are being applied in pharmacies is unknown. Additionally, the experiences of TGD people receiving pharmaceutical care from Australian pharmacies and the experiences of Australian pharmacists delivering such care are largely unexplored. Therefore, this research explores the interactions of TGD people and pharmacists in Australia, determining the current gaps in pharmacy practice and education regarding gender diversity and identifying opportunities for improving the knowledge and cultural competence of pharmacists and pharmacy students. Involving people from this minority group in this research will ensure that their perspectives about pharmaceutical care are included and that the training program addresses their needs for pharmaceutical care. An evidence-based training program developed from this research will empower pharmacists to provide respectful, sensitive, and inclusive care to all patients, regardless of their gender identity. Acknowledging and addressing the unique needs of TGD people enables the pharmacy profession to take a significant step towards achieving health equity for all as envisioned in the 'Equality Position Statement.'[24]

1.3 Research questions

This study aims to answer the following research questions.

1. What are the perceptions of the pharmacists and the expectations of TGD people towards the provision of TGD care provided by the pharmacists?
2. Do Australian pharmacists have skills and training for the provision of care to TGD people?
3. What are the education requirements of the pharmacists and pharmacy students in TGD healthcare?

1.4 Aims and objectives

This study aims to explore the role of pharmacists in TGD care. The objectives of the study are:

1. To explore the expectations of TGD people have of pharmacists providing TGD care;
2. To determine attitudes, practices, and training needs of pharmacists in the provision of TGD care;
3. To design, deliver and evaluate TGD-specific training for pharmacists and pharmacy students with a view of integrating this training into the pharmacy curriculum.

1.5 Significance

While TGD people have been a part of human history since ancient times, the research and education in TGD healthcare is relatively new for the pharmacy profession in Australia. There is a significant gap in knowledge regarding pharmaceutical care provision, specifically to TGD people in Australia. Nonetheless, pharmacists in Australia are well-positioned to offer pharmaceutical services to TGD people. This study addresses this gap by gathering perspectives from relevant stakeholders, including pharmacists and TGD people, to shed light on the challenges and facilitators in providing care to TGD people in Australian pharmacies. The developed training program serves as a foundation for delivering inclusive pharmaceutical care to TGD people and provides a groundwork to guide future education programs and guidelines about TGD healthcare.

1.6 Philosophical approach to this study

A transformative approach with its emphasis on comprehending cultural complexity and achieving social change provided the best framework for my research.[32] This framework acknowledges that certain population groups are marginalised in society because of existing power dynamics, inequalities and systemic structures, making it a fitting method to facilitate advocating for the rights of the TGD people in pharmacy care.[32-34] People in TGD communities often experience marginalisation, oppression and inequalities in accessing healthcare.[32] The transformative paradigm provides a foundation that challenges and disrupts the power dynamics by involving TGD people in the research process, amplifying their voices and addressing structural inequalities.[33,35] This approach facilitates collaboration and participation of TGD people throughout this research journey, which may have been traditionally unrecognised or excluded in research planning and implementation.[33] The transformative approach enabled a broader understanding of the experiences, challenges and needs of TGD people.[35] This enabled me to view the provision of TGD healthcare in a pharmacy setting as experienced by both pharmacists and TGD people as a complex intertwining of experiences between individuals and society that shapes their reality.[36] While the experiences of each participant may be different due to differences in their backgrounds, race,

religion, ethnicity, and social exposure, their stories were interpreted to derive a common meaning that was accurate and representative of their realities.[37] Utilising a mixed method design facilitated the gathering of meaning from the individual stories and understanding of the broader patterns within the practice of providing pharmaceutical care to TGD people.[34,37] Applying a transformative lens not only assisted in studying and describing the experiences of TGD people and pharmacists but also contributed to generating solutions to actively transform the pharmacy practice to improve the provision of pharmaceutical care to TGD people.[32,33,35] The transformative approach equipped me with the necessary tools to create the required changes in pharmacy practice.[33,34]

Philosophical assumptions of this study based on transformative paradigm:

Axiological assumption: People belonging to the TGD community are culturally diverse and deserve to be treated with respect.[35,36] I attended various workshops, events and conferences and familiarised myself with literature to improve my cultural awareness of the TGD community. I used gender affirming language throughout my research, which showed cultural sensitivity and respect for all participants.[35,36]

Ontological assumption: Gender identities other than male-female binary exist and may impact the experiences of people who are TGD when accessing care from pharmacies.[32,35,36]

Epistemological assumption: I was aware that, being a cis-gender woman, I may not fully understand the experiences of people who are TGD visiting pharmacies. Therefore, the inclusion of lived experiences of people who are TGD was important to this research.[36] I recognised that it was unacceptable to assume someone's identity based on their presentation, and all participants in the research deserved to be treated in a culturally respectful way.[32,33,36] As a practising pharmacist, my experience of providing care to TGD people may have been limited to one geographical area. Listening to the experiences of pharmacists practising in various geographical locations such as rural-remote areas and metropolitan areas was vital to understanding the complexity of care provision to people belonging to the TGD community to improve social justice.[36]

Methodological assumption: This multiphase study used a mixed methods design to identify the perceptions and experiences of TGD people visiting pharmacies along with the experiences of pharmacists providing care for them.[33,35,37] The variety of data sources gained from applying mixed methods provided comprehensive data concerning barriers to care delivery and developing education modules in TGD care for pharmacists and pharmacy students.[35,36] Provision of such education to pharmacists and students is crucial in reducing social inequalities experienced by TGD people accessing care from pharmacies.[35]

1.7 Theoretical framework

In this study, it is important not only to understand the perspectives and readiness of pharmacists towards the provision of TGD care but also to explore the expectations of TGD people from the pharmacists providing the care. A Theoretical Framework of Acceptability (TFA) was considered suitable for guiding the development and implementation of this study because it assists in determining the acceptability of new or existing interventions by both recipients and deliverers.[38] Sekhon et al. have defined acceptability as "A multi-faceted construct that reflects the extent to which people delivering or receiving a healthcare intervention consider it to be appropriate, based on anticipated or experienced cognitive and emotional responses to the intervention."[38] The constructs of the TFA assisted in exploring the role of pharmacists in the provision of pharmaceutical care to TGD people in a manner that was accepted by both pharmacists (deliverers) and TGD people (recipients and partners in their care). The TFA enabled me to gather and analyse perspectives from both TGD people and pharmacists and to identify pharmacists' attitudes, beliefs, and concerns regarding pharmaceutical care for TGD people. The constructs of the TFA also enabled the exploration of the factors that may hamper or facilitate the acceptability of pharmaceutical care. This framework was successfully applied in recent studies evaluating the acceptability of health interventions.[39,40]The seven constructs defined in the TFA as listed below (Table 1) guided the literature review, method design, data collection, and data analysis of this study, and the development and evaluation of TGD-specific training program for pharmacists and pharmacy students.[32] The constructs guided the identification of essential components for the training program by considering what is acceptable and meaningful to both TGD people and pharmacists in providing pharmaceutical care to TGD people. This exploration assisted in designing the training program that aligns with the cultural values and preferences of TGD people, promoting a person-centred and respectful approach.

Table 1-1**:** Theoretical Framework of Acceptability: The seven constructs[38]

Construct	**Definition**
Affective attitude	How an individual feels about taking part in an intervention
Burden	The perceived amount of effort that is required to participate in the intervention

Ethicality	The extent to which the intervention has a good fit with an individual's value system
Intervention coherence	The extent to which the participant understands the intervention and how it works
Opportunity costs	The extent to which benefits, profits, or values must be given up engaging in an intervention
Perceived effectiveness	The extent to which the intervention is perceived as likely to achieve its purpose
Self-efficacy	The participant's confidence that they can perform the behaviour(s) required to participate in the intervention

1.8 Structure of thesis

Chapter One provided an introduction to the research topic, shedding light on the healthcare disparities experienced by TGD people and the potential role pharmacists can play in providing gender affirming healthcare to improve the overall well-being of TGD people. Information about the philosophical lens and the theoretical framework that guided the development of this research has been included.

Chapter Two presents a scoping review of the literature about the role of pharmacists in transgender healthcare, which identifies the need for additional education for pharmacists and pharmacy students.

> Chaudhary S, Ray R, Glass B. Pharmacists' role in transgender healthcare: A scoping review. *Res Social Adm Pharm*. Sep 2021;17(9):1553-1561. doi:10.1016/j.sapharm.2020.12.015

Chapter Three discusses the overall methodology utilised for conducting this research. In this chapter, the choice of methodologies and frameworks applied to this research are explained. Specific steps undertaken to implement the exploratory mixed method approach and the intervention study design are described.

Chapter Four includes the published research article exploring the perceptions and expectations of pharmacists providing care, from the perspective of TGD people in Queensland, Australia.

> Chaudhary S, Ray R, Glass BD. “Treat us as a person”: A narrative inquiry of experiences and expectations of interactions with pharmacists and pharmacy staff among people who are transgender. *Explor Res Clin Soc Pharm*. 2022:100198. doi:https://doi.org/10.1016/j.rcsop.2022.100198

Chapter Five presents the findings from the study examining the experiences and attitudes of pharmacists to providing care for TGD people in Queensland, Australia.

> Chaudhary S, Ray R, Glass BD. “I don't know much about providing pharmaceutical care to people who are transgender”: A qualitative study of experiences and attitudes of pharmacists. *Exploratory Research in Clinical and Social Pharmacy*. 2023;9:100254. doi:https://doi.org/10.1016/j.rcsop.2023.100254

Chapter Six describes the results of the national survey exploring the attitudes, practices and training needs of Australian pharmacists providing TGD healthcare.

> Chaudhary S, Ray R, Glass B. Do the attitudes and practices of Australian pharmacists reflect a need for education and training to provide care for people who are transgender? *International Journal of Pharmacy Practice*. 2023. doi:10.1093/ijpp/riad077

Chapter Seven discusses the application of the Implementation Mapping Framework to design, develop, implement, and evaluate the training program about TGD healthcare for pharmacists and pharmacy students. A novel Gender Inclusivity in Pharmacy Framework developed from this research is described and applied to underpin the design and evaluation of the training program.

> Chaudhary, S., Ray, R., & Glass, B. D. (2023). Answering the Call for Community Pharmacists to Improve Healthcare Delivery to Trans and Gender Diverse People: Guide for Designing, Implementing, and Evaluating an Online Education Program in Australia. *Pharmacy*. 2023;12(1):7. doi:10.3390/pharmacy12010007

Chapter Eight reports the results of the impact and outcome evaluations of the training program in TGD healthcare for pharmacists and pharmacy students in the following journal article.

> Chaudhary, S., Lindsay, D., Ray, R., & Glass, B. D. (2023). Evaluation of a transgender health training program for pharmacists and pharmacy students in Australia: a pre-post study. *Exploratory Research in Clinical and Social Pharmacy*. 2024;13:100394-100394. doi:10.1016/j.rcsop.2023.100394

Chapter Nine includes a discussion of the findings of this research and the conclusions drawn. This chapter also presents implications for transforming pharmacy practice and the recommendations for future research, education, pharmacy practice and policies in TGD healthcare.

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Chapter 2: Literature Review

Before beginning this research, it was important to establish what had been published regarding pharmacists' role in providing care to the trans and gender diverse population. A scoping literature review was conducted to inform further research and to identify what methodologies have been used for the exploration of pharmacists' role in TGD care. Consequently, I embarked on this literature review with the aim of exploring and mapping the existing research, guidelines, and practices. The outcomes of this scoping review have been published in the Research in Social and Administrative Pharmacy journal and form the content of this chapter.

The scoping review has been formatted to match the spelling conventions of Australian English. However, the original publication contained spelling variations following the rules of US English as per the publisher's specifications. The remainder of the text of the article has been reproduced word-for-word.

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Pharmacists' role in transgender healthcare: A scoping review

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2.1 Abstract

Background: Transgender patients have unique healthcare needs, providing pharmacists with the opportunity to play an important role in transgender care through addressing the healthcare disparities observed in this patient group.

Objective: This scoping review aimed to explore the role of pharmacists in transgender healthcare.

Methods: Six databases were searched from inception: Emcare, Informit, MEDLINE (Ovid), PubMed, Scopus, and Web of Science. The first author performed screening and data extraction in consensus with co-authors. Preferred Reporting Items for Systematic reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) was utilised to report this review. Themes related to the role of pharmacists in transgender healthcare were identified.

Results: A total of 356 studies were identified; however, only 15 studies, all from the USA, met the selection criteria and were included in this review. Study types included empirical research, practice reports and opinion pieces such as commentaries, editorials, and reports. Pharmacists were found to practise in two different care settings: community and interdisciplinary clinics, performing various roles in transgender healthcare, including patient education and counselling, management of cross-sex hormonal therapy, patient advocacy and provision of preventative care. They were also responsible for the provision of culturally sensitive care in an inclusive and welcoming environment. Although pharmacists considered their role important, they lacked confidence in their knowledge to provide appropriate care to this patient group.

Conclusion: This review has highlighted that there is a need for education in transgender care for both pharmacists and pharmacy students so that they are both confident and comfortable to play a meaningful role in transgender care. Pharmacists' involvement in addressing the health disparities experienced will contribute to improving the overall health outcomes for this group.

Keywords: Pharmacist, transgender healthcare, gender affirmation, preventative care

2.2 Introduction

The term transgender (TG) is an umbrella term that encompasses individuals whose gender identity differs from their biological sex.[1] In this review, the term TG refers to persons that identify as trans, transmen, transwomen, genderqueer, agender, gender fluid, non-binary, sistergirl or brotherboy. Although the exact numbers of the TG population are not available, it is estimated that approximately 0.1-2% of the population worldwide identifies as TG.[2] With increasing social acceptance, many TG patients are accessing care for gender affirmation and other health issues.[3]

TG patients have diverse healthcare needs.[4] The prevalence of mental health issues such as depression, anxiety and suicidal ideation is significantly higher compared to the general population.[5-8] A recent survey reported that approximately 56% of TG patients were diagnosed with depression and 40% with anxiety.[5] These patients are also more likely to engage in high-risk behaviours such as tobacco, alcohol and substance abuse, unprotected sex and needle sharing.[6,9] The risk of developing HIV infection in TG women is 49 times higher than the general population.[10] Approximately 78% of TG people desire hormonal treatment for gender affirmation; however, only 50% of them receive this therapy.[6] It has been reported that between 23 and 71% of TG women procure hormones from a non-medical source and may use higher than the recommended dosage.[11-14] Although TG patients have these unique healthcare needs, some may be hesitant to access required care based on their previous experiences of discrimination and marginalisation emanating from the healthcare system.[4,8,15] Many TG patients have reported that healthcare providers lack knowledge about TG care and in many instances, find themselves teaching these providers about TG care.[7,16] A recent Australian survey of TG patients highlighted the need for improved access to healthcare and better training for healthcare professionals.[4]

Pharmacists, being highly accessible and trusted health professionals, may improve health outcomes for TG patients through their expert knowledge of healthcare issues and in collaboration with other healthcare professionals.[6,17,18] This aligns with the Pharmaceutical Society of Australia (PSA) Competency Standards for Pharmacists that states pharmacists should collaborate and deliver culturally responsive, patient-centred care and promote the judicious use of medications for all patients.[19] In addition, the Accreditation Standards for Pharmacy Programs in Australia and New Zealand require all pharmacy education programs to promote inclusive and responsive patient-centred care that respects cultural diversity and assures the safety of every patient.[20] The increasing

demand for TG care[6] informed the aim of this review; to identify the pharmacists' role, any barriers to care provision and training requirements for providing this care.

2.3 Method

This scoping review was conducted in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR).[21]

Search strategy

A comprehensive search of the literature from inception to 15th June 2020, was performed using the following electronic databases: Emcare, Informit, MEDLINE (Ovid), PubMed, Scopus, and Web of Science. The searches were conducted using terms such as transsexual* OR transgender*, two spirit persons, two-spirit person, two-spirit persons, bigender people, trans persons, gender identity disorder, gender dysphoria, pharmacist, pharm*, education, and health care. The details of the search strategy used for MEDLINE (Ovid) database are included in Appendix A. Additional articles were located through hand searching of the reference lists of the retrieved articles.

Inclusion and exclusion criteria

Articles were included if they described an interaction between pharmacists and TG patients or, identified the need for pharmacist training in TG health care, or described hormonal or other gender affirmation treatment regime for the TG patient. Original research, practice reports, and opinion pieces such as commentaries, editorials and reports in full text and English were included. Review articles or articles not related to the pharmacist or pharmacy involvement in transgender healthcare or evaluating transgender healthcare training provided to student pharmacists were excluded.

Extraction and analysis

Figure 2-1 illustrates the process of study selection for this review. The selected articles were imported into the EndNote software, and duplicates were removed. First, the titles, abstracts and full texts of the studies were screened by the first author. Then, the co-authors independently assessed the study selection. Any disagreements regarding study selection were resolved through consensus among the authors.

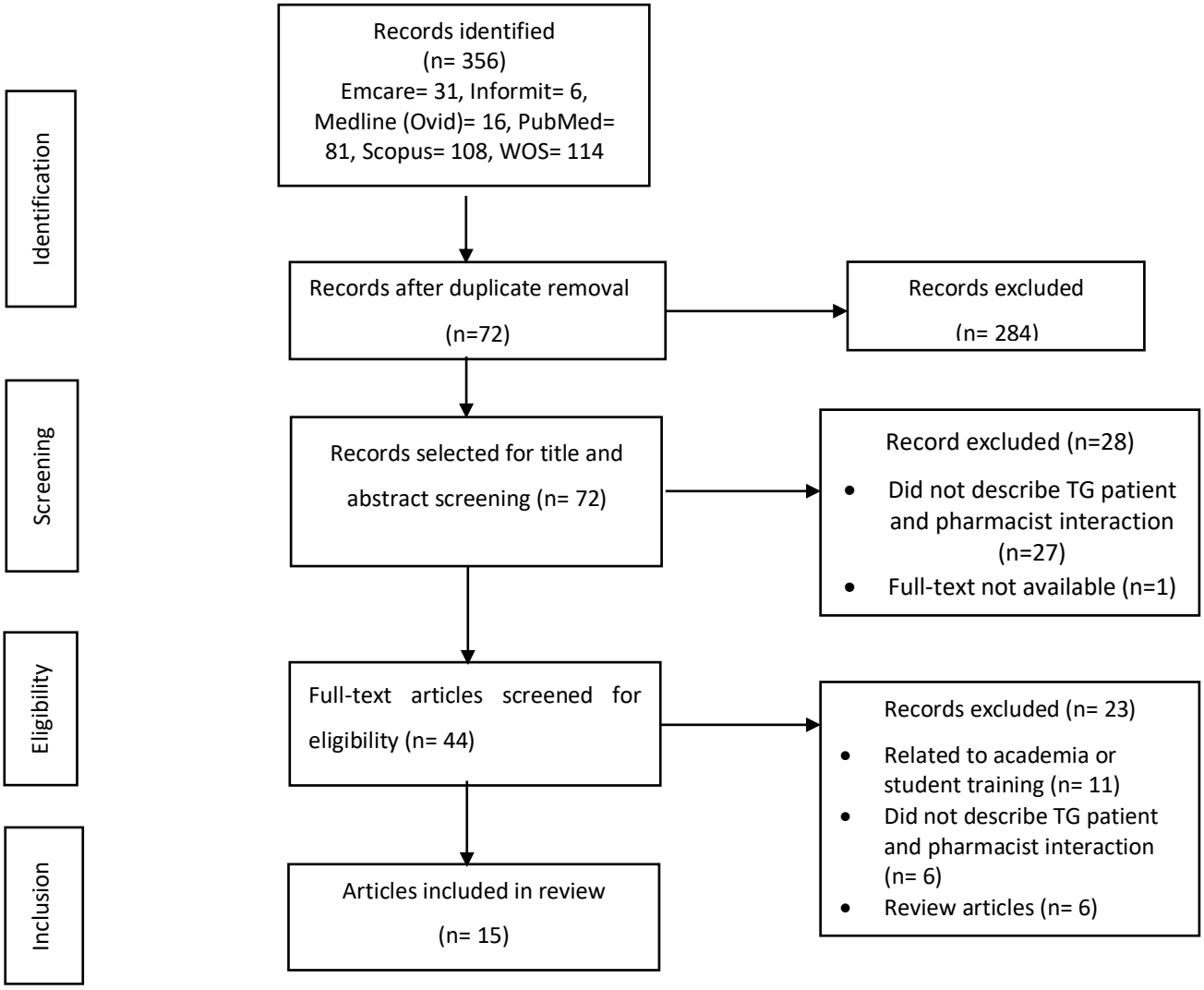

Figure 2-1**:** Flowchart for study selection for the scoping review.

The data from the included studies were charted into a table format recording the author, year of publication, place of publication, study design, participants (if applicable), setting, aims, and key findings. The first author charted the data, and the co-authors independently reviewed the results. The data charting form was updated regularly with the information as a result of this iterative process.

A descriptive analysis was applied to identify the extent, nature and distribution of the included records.[22] Additionally, thematic synthesis was conducted by all authors to identify the themes related to the role of a pharmacist in TG healthcare. A quality assessment of the included studies was not performed as this scoping review aimed to identify all relevant literature regarding the role of pharmacists in TG health care.

2.4 Results

A total of 15 studies describing the interactions of pharmacists with TG patients were included in this scoping review. A variety of study types were found, including empirical research[23-28] (n= 6, 40%), practice reports[29-31] (n= 3, 20%), commentaries[32-34] (n= 3, 20%), editorials[35,36] (n=2, 13%), and reports with opinions[37] (n= 1, 7%). All studies (n =15, 100%) originated in the United States of America (USA), with no studies from any other country, including Australia, identified. The publication dates ranged between the years 2016 and 2019, with most of the studies published in the years 2017[29,30,33-35] (n= 5, 30%) and 2019[23,24,26-28,31,37] (n= 8, 53%).

Three studies[23,25,27] investigated attitudes, perceptions and knowledge of community pharmacists in the provision of TG care. Three studies[29-31] described the role of a pharmacist in an interdisciplinary healthcare model, while only two studies[26,27] out of the six empirical studies evaluated perceptions of TG patients towards receiving care from pharmacists. Another study identified perceptions of LGBTQIA patients towards influenza vaccine uptake from various settings, including pharmacy.[28] Additionally, one study[24] reported the views of TG patients along with other patients receiving pre-exposure prophylaxis (PrEP) in a pharmacist-led PrEP program.

Eight themes were identified relating to the role of pharmacists in TG healthcare (see Table 2-1). The most common themes were the need for additional education for pharmacists in TG healthcare[23,25-27,33-37] (n= 9, 60%), the role of pharmacists in TG patient education and counselling[24,26,27,29,31,32,34,35] (n= 8, 53%) and management of cross-sex hormone therapy (CSHT)[27,29,30,32-35](n= 7, 47%).

Table 2-1: Emerging themes related to the role of pharmacists in TG healthcare.

Author, Publication year and Country	Study design, Participants and Setting	Aim	Main findings	Themes
Empirical studies				
Aragon et al.,[23] 2019, USA	Quantitative: survey; Pharmacists (n=342); Community Pharmacy	To determine whether community pharmacists in North Carolina have personal confidence, comfort level, and resources needed to provide TG care.	Received TG care education at university: 3%; Received continuing education (CE): 12%; Unaware of current practice guidelines: 89%; Pharmacists' role is important in TG care: 71%; Comfortable in welcoming TG patients to their pharmacy: 66%; Barriers to the provision of TG care: Negative views of the pharmacists towards TG patients; Low comfort in the provision of TG care.	Need for additional education in TG healthcare. Barriers to the provision of TG care
Haven et al.*,[24] 2019, USA	Quantitative: survey; Pharmacists (n=7) and PrEP patients (including TG patients) (n=60); university-based HIV clinic, community pharmacy, and community-based units	To investigate the acceptability and feasibility of a pharmacist-led HIV screening and PrEP (P-PrEP) for individuals at risk for HIV acquisition.	**Role of the pharmacist:** Taking medical history patient, HIV risk assessment; PrEP counselling; Baseline laboratory testing; HIV and STI screening; Authorising emtricitabine/tenofovir disoproxil fumarate (F/TDF) prescriptions to eligible patients; Assessing adherence to F/TDF Patient response to pharmacist service: ease of PrEP care, quick service, and friendly and honest pharmacist Pharmacists' response: comfortable in point-of-care testing, rarely uncomfortable (2%) conducting sexual histories or experienced disruption of the workflow (0.7%)	Patient education and counselling Preventative care

Leach et al.,[25] 2016, USA	Quantitative: Online survey; cross-sectional Pharmacists (n=63); Community pharmacy	To measure the general perceptions and attitudes of community pharmacy residents towards TG patients and health; to identify gaps in didactic education regarding TG healthcare among residents, and to evaluate residents' level of support for pharmacists receiving education in transgender health	Did not receive TG care education at university: 71%; TG health should be integrated into pharmacy curricula: 68%; TG health should be integrated into CE programs: 78%; Pharmacists' role is important in TG care: 83%; Confident in treating TG patients: 36%; Need for more education in TG health: 73%; Barriers to the provision of TG care: Discrimination; Lack of provider knowledge	Need for additional education in TG healthcare Barriers to the provision of TG care Provision of an inclusive environment for TG/LGBT patients Provision of culturally sensitive care
Lewis et al,[26] 2019, USA	Quantitative: Survey; Transgender and gender-nonconforming patients (TGNC) (n= 316); Community	To evaluate TGNC adults' worries, and coping actions related to discrimination by healthcare professionals.	Accessed pharmacy services: 86%; Worrying about the discrimination, while accessing pharmacy services: 41.6%; Pharmacists have very little or no competency in the provision of TG care: 52%; Avoided care due to past embarrassment at pharmacies: 13%; Avoided care due to medication cost: 38% Coping actions: choosing providers known to be gender-affirming, delay medical care, not disclosing their authentic gender identity, use of natural products to avoid obtaining a prescription, ask friends or family members to fill their prescriptions, and obtain products from online pharmacies not requiring a prescription	Need for additional education in TG healthcare Barriers to the provision of TG care Provision of an inclusive environment for TG/LGBT patients Provision of culturally sensitive care

Melin et al.,[27] 2019, USA	Quantitative: Survey; Descriptive, cross-sectional; Pharmacists (n= 96) and TG patients (n= 31); Community	To assess pharmacist readiness to provide transgender care through measuring both pharmacists' knowledge and attitudes towards transgender patients; to assess transgender patients' perception of pharmacist readiness to provide them pharmaceutical care.	Pharmacists survey: Knowledge scores in the low and moderate ranges: 90%; Pharmacists' role is important in TG care: 96%; Comfortable in suggesting treatment options to TG patients: 22%; Barriers to the provision of TG care: stigma (84%), verbal rejection (17%), violence (5%) TG patient survey: Pharmacists' role is important in TG care: 87%; Comfortable with the pharmacist while receiving services: 66%; Barriers to the provision of TG care: stigma (60%), discrimination (63%), verbal rejection (50%), lack of knowledge by health care providers (70%); Pharmacist's role in TG care: Medication review (71%), hormonal treatment counselling (65%), medical conditions and nonhormonal treatment counselling (52%), and education on adverse effects and their management (68%).	Need for additional education in TG care Barriers to the provision of TG care Management of CSHT Patient education and counselling
Padilla et al.*,[28] 2019, USA	Quantitative: A prospective survey; The members of the Hispanic LGBTQIA community (n= 126); Community	To identify factors that influence behaviours, attitudes, and perceptions toward the uptake of the influenza vaccine within the Hispanic LGBTQIA community.	27% of the participants reported that their pharmacists recommended the influenza vaccine.	Preventative care
Practice reports				
Kaigle et al.,[29] 2017, USA	Practice report; Veteran TG patients,	To report the development and	**Role of the pharmacist:** Patient education and obtain patient consent to treatment with CSHT; Identify potential drug	Management of CSHT

	interdisciplinary team consists of endocrinologist, primary care provider, clinical pharmacist, psychologist, and social worker; TG healthcare clinic	implementation of the Transgender Healthcare Clinic model with interprofessional collaboration.	interactions; Before initiation of the CSHT identify and address contraindications, precautions, and medical risk factors. Psychiatric pharmacist: address issues such as substance abuse, tobacco abuse, multiple mental health diagnoses, and suicidal tendencies in TG veteran population.	Patient education and counselling Preventative care
Newsome et al.,[30] 2017, USA	Practice report; Pharmacist in an interprofessional team; TG healthcare clinic	To describe the role of a pharmacist in the provision of care to TGNC patients in a medical home model of care.	**Role of the pharmacist:** Patient education and obtain patient consent to treatment with cross-sex hormone therapy; Discuss different formulations for CSHT and select the most suitable formulation for an individual patient; Provide advice on smoking cessation, weight management and a healthy lifestyle; Contact insurance companies for coverage of CSHT costs; Referrals to medical and psychosocial services	Management of CSHT Patient education and counselling Preventative healthcare Advocacy
Ryan et al.*,[31] 2019, USA	Practice report; Pharmacist Clinician (PhC) and Patients living with HIV or high-risk patients including TG patients; Interprofessional and PhC-run clinics	To describe how the pharmacist clinicians were integrated into an innovative pharmacy practice model that provided care to patients living with or at risk of acquiring HIV and/or hepatitis C virus (HCV) infection.	**Role of the pharmacist:** Improve patient adherence to antiretroviral therapy (ART); patient education; order necessary laboratory tests, initiate ART; evaluate ART regimens for appropriateness; select appropriate dosage form; check drug-drug interactions; communicate possible adverse effects and their management; check for need of additional antibiotic prophylaxis; medication review; and therapeutic drug monitoring.	Patient education and counselling Preventative care

Opinion pieces				
Bass et al.,[32] 2018, USA	Commentary	Description of CSHT for nonbinary patients', and the role of the pharmacist in providing care to this group.	**Role of the pharmacist:** Individualise dosing regimen of CSHT and provide alternatives to attain patient's goal of the therapy; Patient education on CSHT; recommend appropriate dosage form considering pharmacodynamic and pharmacokinetic properties of the medication; Management of potential cardiac and thromboembolic risk factors; monitor glucose, lipid, and haematocrit levels and provide counselling on diet, exercise and smoking cessation.	Management of CSHT Patient education and counselling Preventative care
Cocohoba, 2017,[33] USA	Commentary	Description of the role of the pharmacist in TG healthcare.	Foundation elements to provide TG care: Pharmacist education to improve knowledge of available gender-affirmation therapies; Cultural competency training for pharmacists to improve TG patient interactions. **Role of the pharmacist:** Individualise treatment regimens of CSHT and monitor medication safety; Monitor parameters such as blood pressure, weight, pulse and provide information on prevention of deep vein thrombosis prevention strategies; Calculation of creatinine clearance considering muscle mass and hormone therapy of TG patient; Provide a welcoming environment to TG patients and use correct pronouns; Immunisations; Improve medication access; Contribute to TG healthcare research	Need for additional education in TG healthcare Provision of an inclusive environment for TG/LGBT patients Provision of culturally sensitive care Management of CSHT Preventative care Advocacy Undertake research
Maxwell et al.,[34] 2017	Commentary	To identify the role of a pharmacist in LGBT health, recognise specific concerns with mental and sexual	Need for the addition of LGBT health into the curricula. **Role of the pharmacist:** Mental health screening; Sexual health: Encourage routine vaccinations including hep B and hep C vaccines; Provide STIs and HIV screening; Recognise and refer for appropriate cancer screening; Provide birth control advice; Patient education on CSHT; Collaborate with other health	Need for additional education in TG healthcare Management of CSHT

		health, describe gender-transitioning pharmacotherapy, and discuss the current stance of LGBT health in pharmacy education.	professionals to attain treatment goals; Individualise dosing regimens; Assist with insurance claims; Provide culturally sensitive care; Provide an inclusive environment for the LGBT population	Patient education and counselling Preventative care Advocacy Provision of culturally sensitive care Provision of an inclusive environment for TG/LGBT patients
Briggs,[36] 2019, USA	Editorial	Community-based pharmacy residency: At the forefront of improving health care.	Pharmacists have an important role in the provision of TG care. Integration of TG healthcare training into pharmacy curriculum may be required.	Need for additional education in TG healthcare
Radix,[35] 2017, USA	Editorial	Pharmacists' role in the provision of TG healthcare.	Community pharmacists require training in TG health, and there is a need for the addition of TGNC health in pharmacy curricula. **Role of the pharmacist:** Provide TG-inclusive and welcoming environments; Interprofessional collaboration in medical care models; CSHT: Patient education and individualise treatment plan; Provide preventative services such as immunisations, HIV screening; refer TG patients to medical and psychosocial services, if needed; Contribute to research in TG healthcare	Need for additional education in TG healthcare Provision of an inclusive environment for TG/LGBT patients Management of CSHT Patient education and counselling Advocacy

				Undertake research
Vos MacDonald J,[37] 2019, USA	Report	Providing healthcare to TG patients	Barriers to the provision of TG care: TG patient barriers: Financial challenges; Unemployment; Fear of discrimination; High prevalence of healthcare issues such as mental health issues, suicide rates Pharmacy barriers: Inappropriate or incomplete electronic medical and pharmacy records for gender identity, legal sex and birth sex; Discrimination; Denial of care due to personal or religious beliefs of the pharmacist; Minimal or no education on TG health Pharmacies should provide inclusive and welcoming environments for TG patients. Pharmacy staff should use appropriate terminology to provide culturally sensitive care.	Need for additional education in TG healthcare Barriers to the provision of TG care Provision of an inclusive environment for TG/LGBT patients Provision of culturally sensitive care
Total studies	n= 15			

*Study participants included cisgender and TG patients. The study outcomes were described together for all patient groups and were not specifically reported for the TG patient population. CSHT= Cross-sex hormone therapy, TG= transgender, TGNC= transgender and gender-nonconforming, LGBTQIA= Lesbian, gay, bisexual and transgender, queer, intersex and asexual, EMR= electronic medication record, CrCl= creatinine clearance

Patient education and counselling

Patient education and counselling was one of the most highlighted roles of the pharmacist in the provision of TG health care.[24,26,27,29,31,32,34,35] Pharmacists were reported to counsel patients on their hormonal medications[26,27,29,32,34,35] and PrEP medications[24,31] in over 50% of the studies.

Management of CSHT

Seven studies[27,29,30,32-35] reported the role of pharmacists in the management of CSHT with six including education and counselling.[26,27,29,32,34,35] In this role, pharmacists conducted medication reviews[27,29,30,33], obtained patient consent for CSHT treatment,[29,30] advised TG patients regarding the changes in fertility due to CSHT and encouraged them to consider family planning options before initiation of CSHT.[30,34] Additionally, pharmacists performed other roles such as individualising treatment plans[32,33,35], calculating creatinine clearance[33], designing the dosing regimen for TG patients, suggesting appropriate formulations based on patient factors,[30] as well as collaborating with other health professionals to improve the outcomes of the CSHT.[30,32,33,35]

Patient advocacy

Six studies[24,26,30,33-35] identified pharmacists as advocates for TG patients as they assisted in getting pre-approvals for medications through government and company patient assistance programs.[24,26,33] Other examples of advocacy included pharmacists acquiring medications[24,26,33] and assisting TG patients in submitting their insurance claims.[30,33,34] Pharmacists also provided referrals to other medical and psychosocial services.[24,30,35]

Preventative Healthcare

Many studies reported the role of pharmacists in the provision of preventative healthcare for TG patients.[24,31-35] Pharmacists performed screenings for STIs and HIV,[24,31,34,35] mental health,[29,34] and cardiovascular health.[32,33] In one study, pharmacists conducted medication reviews, provided PrEP to eligible patients, and provided education on PrEP.[24] Moreover, three studies[28,33,34] recorded pharmacists immunizing for vaccine-preventable diseases. Pharmacists also assisted in smoking cessation[27,29,32] and prevention and management of alcohol or substance abuse.[29] Two studies[30,32] identified the role of pharmacists in the provision of lifestyle advice such as diet, exercise, and weight management for TG patients.

Provision of culturally sensitive care and inclusive environments

Five studies specified that pharmacists have a responsibility to provide culturally sensitive care to their TG patients.[26,27,33,34,37] Pharmacists and pharmacy staff should ask for preferred name, gender identity and preferred pronouns to avoid misgendering TG patients.[37] Also, the provision of an inclusive environment for LGBT/TG patients was recognised as the responsibility of the pharmacist.[26,33-35,37] It was suggested that pharmacists should update their healthcare policies, train staff, display materials and signs for TG/ LGBT patient inclusivity, and where possible, incorporate gender-neutral restrooms to create a welcoming environment for this patient group.[26,27,33,34,37]

Barriers to TG care

Six studies[23,25-27,33,37] identified various barriers to the provision of TG care, from both a pharmacist and patient perspective, as listed in Table 2-2.

Table 2-2: Pharmacists and patient barriers to the provision of TG healthcare.

Pharmacist barriers	**Patient barriers**
Negative attitudes towards TG patients[23] Low comfort in the provision of such care[23] Lack of knowledge of TG healthcare[25,27,33,37] Stigma[27] Discrimination[25] Verbal rejection[27] Violence including physical harm[27,33] Inappropriate or incomplete electronic medical and pharmacy records for gender identity, legal sex and birth sex[37] Denial of care due to pharmacist's personal or religious beliefs[33,37]	High unemployment rates[33,37] Financial challenges[33,37] Fear of discrimination[27,33] Past experiences of accessing healthcare from the pharmacy[26] Fear of pharmacy staff causing physical harm or questioning the legitimacy of the prescription or denying medication supply or accusing of fraud due to legal documents not reflecting their physical appearance[26,33]

The need for additional education

Nine studies[23,25-27,33-37] reported the need for additional training for pharmacists in TG healthcare to provide appropriate care for this population. Additional training may be integrated into the pharmacy curriculum[23,27,33-37] and/or delivered as a part of continuing education (CE).[23,27,35,37]

Undertake research

Two studies[33,35] suggested that pharmacists should contribute to transgender care research. The research could be undertaken to establish the safety and efficacy of the existing and new treatment protocols for gender affirmation treatment. Optimising the implementation of pharmacy-based preventative care services to improve TG health outcomes also needs to be investigated.

2.5 Discussion

This review was undertaken to map the role of pharmacists in TG healthcare. The 15 articles identified have relied only on US data, underlining a lack of studies from other countries, including Australia.

Pharmacists have been reported to play a significant role in TG healthcare and the role included patient education and counselling,[24,26,27,29,31,32,34,35] management of CSHT,[27,29,30,32-35] and provision of preventative care services.[24,31-35] Pharmacists have provided culturally sensitive care in an inclusive environment for TG/LGBT patients,[26,27,33,34,37] also in some instances advocating for their TG patients for affordable healthcare services.[24,26,30,33-35] Pharmacists are therefore well positioned to undertake research to establish safety and efficacy of available treatment protocols.[33,35] Barriers have been put forward to the provision of TG care in pharmacy settings such as stigma, discrimination, and verbal or physical abuse.[23,25-27,33,37] Although most of the pharmacists[23,25,27] and TG patients[26,27] believed that pharmacists play an important role in TG healthcare, both groups reported a significant gap in pharmacists' knowledge of TG healthcare. Importantly, over half of the articles[23,25-27,33-37] indicated the need for TG healthcare education for pharmacists and pharmacy students.

Pharmacists are reported to educate and counsel TG patients across various areas of healthcare.[6,9,17,18] However, the practicality of the provision of advice in the community pharmacy settings needs to be explored. Many pharmacies lack the availability of private spaces for all patient consultation and often use the pharmacy counter for counselling.[38] Moreover, some pharmacists have been hesitant in providing private spaces due to time constraints, lack of floor space and the costs of employing another pharmacist to oversee dispensing and other pharmacy operations.[38] Even though generally TG patients feel safer in discussing their healthcare issues with pharmacists than physicians,[6] lack of privacy may lead to non-disclosure of their authentic gender identity.[33] This could impact the pharmacist's recommendations regarding medications and other preventative care services. Furthermore, the inclusion of pharmacists in interprofessional teams at TG clinics for providing comprehensive clinical counselling on gender affirmation therapies and other preventative measures, should be considered to ameliorate the pressures of time on the community pharmacists.

Although pharmacists' role has expanded beyond the dispensary, the remuneration for their time, expertise and skills for offering professional services need to be considered. Inadequate or no remuneration for these services may limit their delivery through pharmacies.[39] The fee-for-service model may be introduced to improve the pharmacists' willingness for offering professional services.[39] In Australia, this could be addressed by pharmacists being granted access to allied health Medicare Benefits Schedule (MBS) items for claiming the professional services offered to their patients.[40] Adequate remuneration may facilitate the provision of healthcare services through community pharmacies that may improve the overall health outcomes of TG patients.

Even though pharmacists are providing healthcare to TG patients across a range of areas, few studies have evaluated their attitudes, knowledge and skills in the provision of such care. [23,25,27] It has been reported that TG patients have experienced denial of healthcare services due to pharmacists' negative attitudes and lack of knowledge of TG healthcare issues.[15] However, only two studies explored the perceptions of TG patients about towards the provision of care by pharmacists.[26,27] Such studies may be important not only to provide insights about the expectations TG patients have of their pharmacists, but also to design appropriate education in TG healthcare for pharmacists. Some educational interventions have improved the attitudes of pharmacy students towards TG patients and therapeutic knowledge of TG healthcare.[11,41,42] Knowledge of current guidelines and other practice resources in TG care that assist when providing gender affirming care and appropriate preventative care for these patients could be improved. These findings suggest a need to develop and deliver TG healthcare continuing education for pharmacists to improve their therapeutic knowledge for adequate provision of care for their TG patients. Additionally, integration of such training into the pharmacy curricula to improve the knowledge, cultural competence and confidence of future pharmacists in addressing TG healthcare needs would be beneficial.

Many TG patients consider healthcare provider knowledge of TG issues along with their cultural awareness, as important factors while accessing care.[15,26] Misgendering or inappropriate use of pronouns in the pharmacy setting have deterred some TG patients from accessing care.[26] Australia, as with many other countries, is a multicultural society and as such pharmacists have to deal with the requirements of different ethnic, religious and social groups.[43] Increased workload and lack of knowledge of certain cultures may inadvertently result in culturally inappropriate delivery of pharmacist services. However, with an awareness of cultural diversity, pharmacists unsure about approaching TG patient may be advised to use gender-neutral language.[6] Additionally, it is

recommended that pharmacists acknowledge that the provision of an inclusive and welcoming environment is paramount for the delivery of culturally sensitive care to TG patients.[6] Therefore, cultural competency training for pharmacists and pharmacy staff providing TG care is necessary to address cultural barriers and may assist in developing trusted relationships with these patients.

Many TG patients have financial difficulties and do not have private insurance.[6,15] Medication cost is one of the barriers to accessing care.[6] In Australia, not all medications for gender affirmation treatment are subsidised through the Pharmaceutical Benefits Scheme.[2] Thus, being an advocate for TG patients and assisting them in navigating the healthcare system for affordable care is crucial for improving their healthcare outcomes.[6,33]

The current practice guidelines for gender affirmation care are based on clinical experience and not randomised clinical trials.[2,33,35,44,45] Pharmacists need to undertake research to establish the optimal dosing regimens of CSHT, pharmacodynamic and pharmacokinetic factors affecting the individual response to the therapy, drug-drug interactions, drug interactions with food and complementary medicines.[33,35] Also, research is required to establish how the preventative healthcare services offered through community pharmacies may improve the overall well-being of TG patients.[33]

Future research

This review has identified that pharmacists require additional training in TG healthcare to bridge the gap in their pharmacotherapeutic knowledge and gain cultural competency. Future studies are necessary to address the impact of such training on the attitudes, knowledge and practice of pharmacists in the provision of TG healthcare. In addition, more studies are required to evaluate the perceptions of TG patients about pharmacists' role in their healthcare.

Limitations

This review may have some limitations. Although a comprehensive search strategy was applied to locate relevant literature, some articles may have been excluded if they were not published in the English language or if they were not listed in the searched databases.

2.6 Conclusion

This review indicates that the role pharmacists may play in TG healthcare is both complex and varied. Highlighted is the need for additional TG healthcare education in therapeutics as well as cultural sensitivity for pharmacists and pharmacy students. Such training would assist in delivering culturally

responsive and patient-centred care as is envisaged by the Pharmaceutical Society of Australia's competency standards.[19] TG healthcare education and training can be integrated into pharmacy curricula and continuing education programs to improve the confidence and comfort levels of pharmacists and pharmacy students in the provision of such care, with a view to improving health outcomes for this patient group.

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Chapter 3: Methodology

3.1 Research Methodology

To enable me to research the needs of the TGD community and the pharmacists that partner with them in their care, I recognised the importance of employing a methodology that would enable an exploration of complexity, relational aspects, and intricacies of TGD healthcare in pharmacies. Thus, I carefully considered various research approaches. Applying a transformative lens, a multiphase design with a participatory approach was selected for this study.[1,2] This research was conducted in two separate phases (See Figure 3-1). The two phases required two separate methodologies because the first stage explored the interactions of TGD people and pharmacists along with training needs of pharmacists, while the next phase involved designing, delivering and evaluating a training program.

Stage One involved an exploratory sequential mixed methods design, where a qualitative phase was followed by a quantitative phase.[2] In the qualitative phase, pharmacists and people who are TGD were interviewed to inform the quantitative phase - a national survey of Australian pharmacists.[2] Given the paucity of available literature in this area, understanding these experiences enabled me to identify and address the barriers to the provision of pharmaceutical care to TGD people. For Stage One, an exploratory mixed method approach was the most suitable as it allowed me to combine qualitative and quantitative methods, enhancing the depth and breadth of available data.[2] By including both interviews and surveys, I gained insights into the lived experiences of TGD people and pharmacists, ensuring robustness of the research.[2,3]

Based on the data obtained in the first stage, a pre-test-post-test intervention design was developed for Stage Two. In this stage, TGD-specific education module for pharmacists and pharmacy students was designed, delivered, and evaluated. To evaluate the effectiveness of a training program aimed at improving the awareness and knowledge of pharmacists and pharmacy students a different methodology was needed. An interventional study design[4] was chosen because it allowed for conducting pre- and post-training surveys, enabling a comparative analysis of participants' learning and application, before and after the training program (impact evaluation) as well as outcome evaluation interviews three-month post training. This design provided useful data to determine the extent to which the training positively influenced the pharmacists' understanding of TGD care and how it translated into their professional practice. The intervention study design also permitted me to observe any changes in perceptions and attitudes, essential to cultivating a more inclusive and supportive environment for TGD people seeking healthcare services.

Before implementing the methods of the research, a search for an effective framework resulted in locating the Implementation Mapping (IM) Framework.[5] This framework provided a systematic and comprehensive approach to identify, plan, and execute the necessary steps for successful program design and implementation.[5] It assisted me in identifying potential barriers, facilitators, and strategies for effective program delivery, ensuring that the training program was implemented with maximum impact.[5] Consistent with this framework, first, a needs analysis was conducted in Stage One and training development, implementation and evaluation were conducted in Stage Two.[5]

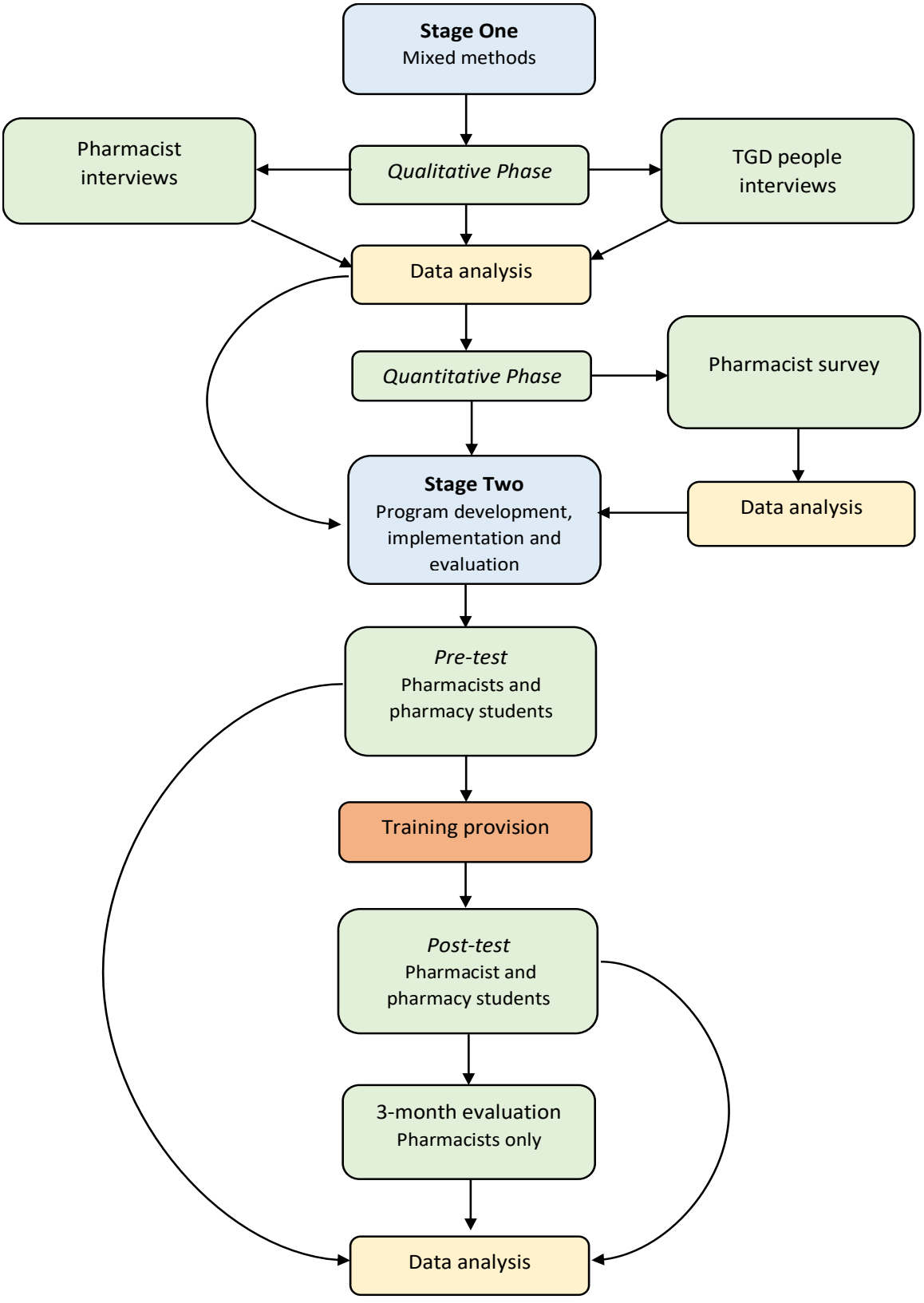

Figure 3-1: Overall study design.

3.2 Methods

3.2.1 Stage One

In looking for a method for data collection that has been used with marginalised communities, narrative enquiry was selected because it enables people to tell stories that are important to them.[1] Additionally, narrative enquiry allowed me to listen to the past experiences of pharmacists and TGD people regarding TGD healthcare and how they derived meaning from them. These stories were critical for gaining detailed insights into participants' lived experiences and behaviours as well as understanding how these life experiences impacted access to holistic TGD healthcare.[1,6] TGD people may be hesitant to participate in the research studies because of their past experiences of societal stigma and marginalisation.[7] However, using the narrative enquiry, I was able to provide interview questions to the participants prior to the interview.[1] By offering questions in advance, participants were reassured that there would be no uncomfortable or unexpected questions, providing a sense of security and thus enhancing their comfort and confidence in participating during the interview.[8]

3.2.1.1 Qualitative Phase

Participants and recruitment

Pharmacists and TGD people residing in Queensland were contacted for participation in the research. Pharmacists and TGD people were recruited for interviews using purposive and snowball sampling, respectively.[1]

Transgender people

Previous research has identified that if the researcher is a TGD or TGD-friendly person, TGD people feel more comfortable participating in research. This is because TGD people believe that researchers should be trustworthy, possess knowledge about their issues and receive training in using culturally sensitive and appropriate language.[9] TGD people are more inclined to engage in research promoted through informal channels such as word of mouth and endorsed by TGD community support organisations.[9] Furthermore, TGD people expressed a preference for research that explicitly stated its objectives and maintained transparency throughout all stages.[9,10] Considering the recommendations about TGD people recruitment from the previous research[9,10], I attended local meetings and social gatherings held by Queensland Council of LGBT Health (QC). During these events, I met representatives of various organisations (QC, Many Genders One Voice and 2 Spirits) and support groups for TGD people (RESPECT, Transbridge, and another local TGD support group). Attending these meetings enabled me to familiarise myself with the available resources designed to provide better care for TGD people. I also spoke with the representative of another rural transgender

and ally group regarding my research. The interactions with these representatives assisted in building a trusted relationship, which was essential for recruiting participants from the TGD communities.[9,10] One of the representatives of these organisations told me that they have trust in me and my research because I met them and spoke to everyone at the meeting in a culturally respectful way. I observed that these organisations and support groups exhibited a strong sense of guardianship towards the TGD community and would only allow access to their members if they deemed the researcher to be a safe person and that the research would not harm participants. By investing time in building relationships with the TGD community, I demonstrated my sincerity and dedication to amplifying their voices. I assured participants that this research was intended to empower them and validate their perspectives, ultimately contributing to the improvement of healthcare experiences within the pharmacy setting.

For this research, adult TGD people were recruited using purposive and snowball sampling methods. Queensland support groups and organisations for TGD people were contacted to assist in advertising the research. The support groups and services who agreed to promote the study added the information sheet (Appendix C) to their social media platforms. Interested people contacted me via email, and a consent form (Appendix D) and information sheet were sent via return email to enable potential participants to make an informed decision.

Recruitment through snowballing

Transgender people represent a very small part of the community. Therefore, a snowball sampling technique assisted in recruiting possible participants identified through the contacts of already recruited participants.[1] Snowball sampling occurred when one participant posted their experience of participating in the research on a personal social media page. They shared the information sheet for the study and wrote,

> *"I recently undertook this interview with Swapna. It was a safe and affirming experience. Swapna told me she really needs a few more community members who are prepared to help."*

Within only a couple of hours of their post, 21 members belonging to TGD communities expressed their interest in participating in the study. This truly showed the power of snowball sampling.

Pharmacists

Pharmacists were purposively sampled to participate in face-to-face, phone or Zoom interviews. The contact details of pharmacists in Queensland were obtained from the JCU Pharmacy preceptor

database. These pharmacists were invited to participate in the research via email and were provided with a detailed information sheet (Appendix E). According to the preference of the participant, a face-to-face, phone or Zoom interview was scheduled. A written informed consent was obtained prior to the interview (Appendix F).

Data Collection

Semi-structured interviews were conducted to investigate the experiences of TGD people in accessing care from pharmacists while simultaneously exploring the perceptions and attitudes of Australian pharmacists toward providing TGD care. Interview guides, informed by the literature and the constructs of the TFA[11], were developed separately for use with pharmacists and TGD people. Affective attitude, burden and ethicality constructs were applied to develop questions evaluating the attitudes of pharmacists towards the provision of TGD care and TGD people's perceptions of pharmacists' attitudes.[11] The constructs of intervention coherence and opportunity costs guided the development of questions assessing the practice of pharmacists and the expectations of TGD people while accessing pharmaceutical care.[11] These interview guides were designed to focus the conversation on the research topic, guide flow and encourage elaboration of participant responses.[1] The pharmacist interview guide was piloted by two academic pharmacists from JCU, while the interview guide for TGD people was piloted with two TGD community members. Based on the responses from these reviewers, the questions were rephrased for clarity and relevance. Other suggestions for questions to improve the quality of the data were added.

Interview time and date were negotiated with interested people, and interview questions and consent forms were emailed to them prior to the interview. Written informed consent was obtained from each participant prior to the interview. Additionally, verbal consent was obtained at the beginning of the interview. A face-to-face, phone or Zoom interview using a narrative inquiry technique was conducted based on the preference of the participant. The semi-structured interview guide enabled participants to tell their stories in answer to the research questions. After asking the broad questions, cues were utilised along with the follow-up and focused direct questions to clarify any ambiguity or to gain a more detailed response from the participant. All interviews were digitally audio-recorded.

Additional consideration was given to the preparation of the interview room for TGD participants. Previous guidance has indicated that displaying signs of inclusivity, such as pride or rainbow flags, conveys a welcoming environment and reduces the anxiety of TGD people in a new setting. I displayed TGD flags at the Pharmacy department entry door as well as in the interview room and

wore a name badge with my pronouns. I aimed to demonstrate to TGD participants that we were welcoming them to our university and that they were safe with me.

Data analysis

All interview data were transcribed verbatim and imported into NVivo data management software.[1] The data were organised into chronological stories categorised as concepts, behaviours and events.[1] Data were analysed for meaning from personal stories embedded in social interaction between TGD people and pharmacists.[1] The stories were grouped into themes and sub-themes in discussion with the advisory team, and the discrepancies were resolved using consensus.[1] These themes and subthemes were emailed to a group of participants to confirm if the themes accurately represented their views. The themes and subthemes from the data with TGD participants were reported in the narrative inquiry research paper (Chapter 4).[11] The seven constructs of the TFA[12] informed the coding frame for pharmacists' data. The coding frequency and examples of illustrative quotes for each of the seven constructs and other data were reported (Chapter 5).

Data generated through narrative inquiry style individual interviews[1,2] were analysed and integrated to guide the development of a quantitative survey instrument utilised to further explore the attitudes and practices of a broad sample of pharmacists concerning the provision of TGD care in pharmacies across Australia.

3.2.1.2 Quantitative Phase

An online survey instrument was designed, tested for validity and reliability and then administered nationally using the Qualtrics[XM] platform. Aligned with the TFA constructs of affective attitude, burden, and ethicality[12], the survey examined the attitudes and practices of the pharmacists and identified their training needs in TGD healthcare. The questions evaluating the practices of pharmacists in the provision of TGD care were developed based on the constructs of intervention coherence, opportunity costs and perceived effectiveness. The survey took approximately 15 minutes to complete and included open, closed, multiple-choice and Likert scale questions.

Participants and recruitment

According to the Pharmacy Board of Australia, about 32,393 pharmacists were registered for general practice in Australia in 2020.[13] Based on this number, a power analysis was conducted to determine the sample size for the study. The following formula was used to calculate the sample size assuming the 95% confidence interval, 0.5 standard deviation (Std Dev) and 10% margin of error.[14]

Necessary Sample Size = (Z-score)2 * Std Dev*(1-StdDev) / (margin of error)2

A sample size of 96 pharmacists was required to draw meaningful conclusions regarding the perceptions of the pharmacists towards TGD care.

The administrators of the Facebook pages of PSA Early Career Pharmacists Group, Consultant Pharmacists Australia Group, JCU Pharmacy Alumni and JCU Pharmacy Students were contacted requesting that they advertise the study on these social media group pages, inviting all Australian pharmacists to complete an online survey. Two national pharmacy organisations, the Pharmaceutical Society of Australia (PSA) and the Pharmaceutical Guild of Australia (PGA), distributed the survey link to their pharmacist members through their members' e-newsletter. The survey link and QR code were also included in a journal article published in the Australian Journal of Pharmacy (Appendix G).[15] Pharmacists reading the article were encouraged to participate in the study using the survey link or the QR code.

Data collection

The survey instrument was piloted by two community pharmacists and three pharmacist academic staff of James Cook University (JCU) for reliability and face and content validity. Based on their feedback, an explanation of the terminology used in the survey and an additional question regarding the use of pronouns were added to the survey. All survey respondents were asked to respond via a separate link if they were willing to participate in the TGD training provided in a later stage of the study. The provision of a separate link to obtain this response protected the anonymity of the participants.

Data Analysis

Descriptive statistics were applied to analyse the quantitative data using SPSS software. A Fisher exact test was used to investigate an association between two categorical variables, such as the education level of the participants and their confidence level in providing TGD care. The results were considered statistically significant if the calculated p-value was less than 0.05. The data from open-ended questions in the questionnaire were analysed by applying content analysis.[2] The constructs of the TFA were applied to reporting the data (Chapter 6).[12]

3.2.2 Stage Two

Analysis of the integrated data from both phases of Stage One established the need for further education for community pharmacists and pharmacy students.[16] In Stage Two, a TGD-specific training program was designed, delivered, and evaluated. The training was available online to pharmacists and face-to-face, with online access to the module in class for the fourth-year pharmacy students at

JCU. Both the pharmacists and students were asked to complete the pre- and post-training surveys to evaluate the change in their knowledge and attitudes towards the provision of TGD healthcare.

Overseas researchers have employed a variety of teaching and learning methods to effectively deliver TGD healthcare training to pharmacy students.[16-18] Ostroff et al. [17] and Leach et al. [19] delivered TGD care training using a didactic lecture focusing on cultural sensitivity and pharmacotherapy. In an American study, a flipped classroom model was applied where students completed pre-session reading and video training and then applied that knowledge to discuss transgender care in the classroom session.[16] The classroom session included active learning and panel discussion.[17] Parkhill et al. also employed panel discussion to increase student understanding of the experiences of TGD people.[18] Although these teaching and training strategies have improved the knowledge and confidence of the pharmacy students, the researchers have indicated a need for a more comprehensive training program.[16-19] The results from a recent survey of the practising pharmacists in North Carolina, USA, indicated that the pharmacists prefer home-study or on-demand continuous education modules about TGD health.[20]

The insights from previous studies[16,17,19-21] and the data gathered from Stage One assisted in designing a comprehensive training program in TGD healthcare for pharmacists and pharmacy students. The online training program offered in my research included reading materials, resources, videos, and case studies in TGD care. Various frameworks[22-24] and pedagogies[25] were used to design this training program. The details of the design of this training program are included in Chapter 7.

Participants and recruitment

Pharmacists

Pharmacists from Stage One who indicated their willingness to participate in online training were enrolled into the program via the LearnJCU Blackboard Ultra platform. The participants were contacted by email to notify them of the training dates and directions for accessing the training.

Pharmacy students

All fourth-year pharmacy students at JCU were informed about the training program that has been embedded in their existing curriculum. Students were provided with an information sheet regarding the pre-and post-tests and were asked to consider participating in the research. They were informed about how to access the training program and were reassured that their participation in the research was voluntary and would not affect their grades in their pharmacy course (Appendix H).

Data Collection

Pre- and post-training surveys were developed and administered to establish entry knowledge and evaluate the effectiveness of the training program. With the permission of the authors, a validated pre-and post-test from a similar study in Puerto Rico was utilised for the pre-and post-tests for both pharmacists and pharmacy students (Appendix I, J).[26] As the original tool was in Spanish, it was translated, and questions were adapted to the Australian context where necessary.

Pharmacists were also given an opportunity to participate in a three-month post-training outcome evaluation interview via a separate link provided at the end of the post-training survey. Consent and contact details (phone number and email) for participating in the outcome evaluation interviews via phone or Zoom were obtained. The outcome evaluation tool is attached as Appendix K.

Fourth year JCU pharmacy students were provided with access to an online program at the JCU Townsville campus. Students were requested to complete the pre-and post-test survey as part of the training. Informed consent was indicated by completing the pre- and post-tests (Appendix H). Student participants were not included in the outcome evaluation phase because they had not had appropriate exposure to clinical practice post-training to provide reliable outcome data. Pre-and post-tests were administered by a staff member who was not affiliated with this research or in any activities related to the teaching or assessment, and the researchers were not present in the room when the tests were administered.

Data analysis

Using SPSS statistical software, descriptive and inferential statistics were used to analyse pre-test and post-test data. Depending on the normalcy of data, a paired t-test was applied to calculate the statistical significance of the change in knowledge and confidence level of pharmacists and pharmacy students after receiving TGD-specific training. The results were considered statistically significant if the calculated p-value was less than 0.05.

Content analysis was utilised to analyse the open-ended responses.[1] The responses for the three-month post-training outcome evaluation interview were analysed thematically applying Braun and Clarke's six-step framework.[27]

3.3 Measures of quality

Validity

In this study, the survey tool was tested for face validity by piloting the survey instruments with academic staff and practising community pharmacists at JCU. Additional statistical support from a statistician was sought to ensure the validity of quantitative data analysis.

Trustworthiness

The interview guides were piloted with the pharmacy academic staff, community pharmacists and TGD people to establish the dependability of questions. The qualitative data were tested for trustworthiness or authenticity through triangulating data from various resources.[1] I performed the initial coding of the qualitative data. Then, a double-coding process with advisors was conducted to ensure intercoder reliability.[7] The preliminary themes emerging through the data analysis were validated with the representatives of the participants to ensure the correct interpretation of their views.[6,13]

Credibility

The direct quotations from the participants were presented to enhance the credibility of the interview data.[1] In addition, meetings with advisors and participant representatives from both groups were conducted to discuss data, interpretations, and outcomes. A reflexive journal was maintained to record the initial thoughts and reflections of the researcher on the research process.[28] Moreover, reflexive journaling was practised to understand how the position of the researcher and the culture and social realities affect each other during the qualitative research process.[29]

3.4 Data storage

All data obtained from this research study were stored on my password-protected computer according to the JCU data management policy. All audio files were removed from the recording device. The recordings were retained only until the data were published, after which only the transcripts were stored. All research data were uploaded to the Research Data JCU platform according to the Research Data Management Plan (RDMP).

3.5 Ethics approval

Ethics approval for the research was sought from the Human Research Ethics Committee of JCU (Approval H8265, Appendix L), and the study was conducted in accordance with the Australian Code for Responsible Conduct of Research. Results were reported using the Standard for Reporting Qualitative Research (SRQR) (Appendices N and P) and the Checklist for Reporting Of Survey Studies (CROSS) (Appendix R).

3.6 Confidentiality

To ensure safety of all participants (pharmacists and TGD people), the face-to-face interviews were arranged at a time and place convenient to the participants and the telephone or Zoom interviews were conducted from a closed room at JCU pharmacy school. Additionally, the anonymity of the

participants and confidentiality of the data were maintained at every stage of the research study by using identification codes.

As this research investigated sensitive issues such as experiences in accessing and providing TGD care,[6] questions may cause emotional distress in TGD people and pharmacists. The Information Sheet encouraged participants to contact Lifeline on the phone number provided or seek assistance from their usual counsellor to minimise the risks associated with possible distress. The discussion of sensitive issues with my supervisors helped to ameliorate the potential impact of the participant stories on me as the researcher.

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Chapter 4: Trans and Gender diverse People Interviews

While conducting narrative style research interviews with TGD people about the pharmacists providing their care, I gained invaluable insights into the unique challenges and sensitivities experienced by this marginalised group. The lessons I learned early on were important for understanding the TGD community's lived experiences and the delicate balance required when engaging with such a vulnerable and often overlooked population.

Through this chapter, I present the published research article about the experiences and perceptions of TGD people while obtaining pharmaceutical care from pharmacies in Queensland.

This research holds the potential to be transformative for pharmacy care provision, providing valuable insights into the specific needs and preferences of TGD people. By using these insights into TGD people's perceptions of pharmacists and healthcare services, the pharmacy profession can step towards minimising the barriers and discrimination that TGD people may encounter. It is my hope that this article will serve as a steppingstone towards transforming pharmacy practice to be more inclusive and affirming, an environment where TGD people can access care with dignity and receive the support they truly deserve. This article has been formatted to match the spelling conventions of Australian English. However, the original publication contained spelling variations following the rules of US English as per the publisher's specifications.

Title: "Treat us as a person": a narrative inquiry of experiences and expectations of interactions with pharmacists and pharmacy staff among people who are transgender

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"Treat us as a person": A narrative inquiry of experiences and expectations of interactions with pharmacists and pharmacy staff among people who are transgender

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4.1 Abstract

Background: Despite the increased visibility of transgender and gender diverse (TGD) people, little is known about their interactions with pharmacists and pharmacy staff while accessing care from the pharmacies.

Objectives: The objective of this study was to explore the experiences and expectations of the TGD people of their interactions with pharmacists and pharmacy staff in Queensland, Australia.

Methods: This study is situated in a transformative paradigm and utilised narrative inquiry to conduct semi-structured interviews with TGD participants. An interview guide based on the relevant literature and the constructs of the Theoretical Framework of Accessibility was developed. Purposive and snowball sampling was used to recruit people who identified as TGD and who had visited pharmacies in the past to access care. Depending on participants' preferences, interviews were conducted face-to-face or via phone or Zoom application. Interviews were recorded, transcribed, and organized in chronological stories. Data were analysed to derive themes from the participant stories.

Results: A total of 22 participants (transwomen= 11, transmen= 8, non-binary trans masculine= 3) were interviewed. Two major themes were identified: (1) Challenges of accessing care from the pharmacy and (2) Making the most of the interactions between TGD people and pharmacists. Major challenges of accessing care from pharmacies included anticipated anxiety of accessing care, healthcare system constraints, compromised privacy and confidentiality at the pharmacy, and being challenged about their gender. Many avoided interacting with pharmacists and staff or kept their interactions minimal. Participants recognised that pharmacists play a meaningful role in TGD health and provided insights about how pharmacists can improve care provision to TGD people.

Conclusion: Cultural and pharmacotherapeutic education in transgender health is crucial for Australian pharmacists and staff to provide inclusive, respectful, and person-centred care to TGD people.

Keywords: Pharmacists, Community Pharmacy, Transgender, Non-binary, Healthcare, Professional Education

4.2 Introduction

Transgender is an umbrella term describing individuals identifying with a different gender from their sex assigned at birth.[1] Even though the visibility of transgender people in society is increasing, many healthcare disparities remain for the members of the transgender and gender diverse communities.[2] Many people who are transgender and gender diverse (TGD) have reported experiencing stigma, marginalisation, and refusal of care in healthcare settings.[3-7] Some studies have found that these experiences, along with a lack of provider knowledge about transgender healthcare, have compounded the anxiety of TGD people about accessing personal care and created mistrust in the healthcare system.[5,6]

A few Australian studies have reported positive experiences for people who are TGD accessing healthcare.[8,9] These positive experiences included the healthcare provider's respectful and professional communication style and signs of inclusivity, such as the healthcare provider displaying LGBTIQA+ materials in the practice setting.[8,9]

People who are TGD may access pharmacies for medicines for gender affirmation and other healthcare needs.[10] There is a paucity of literature exploring the role of pharmacists in transgender healthcare from the perspectives of TGD patients. Although the experiences of TGD people have been captured in various healthcare settings, only two US studies have explored the perceptions of people who are TGD accessing care from community pharmacies.[6,7] Melin et al. found that TGD participants believed pharmacists' services such as medicine review, counselling on medicines and hormonal treatment, adverse effects and management, and preventative healthcare might improve their health.[7] However, more than 60% of participants reported that the pharmacists could not define the term 'transgender.'[7] Additionally, a study by Lewis et al. found that more than half of the TGD participants perceived that pharmacists had little or no competency in delivering gender-affirming care.[6] About 13% of participants reported avoiding accessing healthcare from the pharmacies due to past embarrassing experiences.[6]

Even though the awareness about the vital role pharmacists play in transgender healthcare is increasing, information about whether Australian pharmacists and staff are providing appropriate

pharmaceutical care to people who are TGD is lacking.[11] Many studies have suggested that listening to the voices of the TGD community members and tailoring the educational activities with the involvement of TGD people is crucial for improving healthcare delivery to this community.[12-17] Therefore, it was important to explore the experience of visiting pharmacies in Australia for people who are TGD.

The study aimed to explore experiences and expectations of interactions with pharmacists and pharmacy staff among people who are TGD.

4.3 Methods

The transformative paradigm was selected as a philosophical lens because it promotes social change for marginalised populations.[18] The transformative lens guided the development of the methodology for this study. It provided the ethical principles embedded in social justice and human rights, which were applied throughout the research design and data collection process. It facilitated thinking about how this study might advance social justice by generating reliable data that is sensitive to the demands of this population on the margins. The questions were asked to explore the TGD people's experiences and enabled them to express their thoughts about how the pharmacy practice could be transformed. The researchers were aware that while working with this community, power and cultural differences exist. They are required to provide a culturally sensitive and inclusive environment and to use appropriate and respectful language for communicating with the members of this community. These power differences were discussed at the research meetings, and the researchers recognised that although they had comprehensive knowledge and skills of research that were developed through their experience, the participants had lived experiences that they did not have. Hence, the researchers acknowledged their participant's knowledge and engaged in meaningful ways to learn from the participants. Guided by a transformative approach, the researchers ensured that the TGD people were recruited to participate in the study in a manner that was respectful of their culture and that their perspectives were heard throughout the process.[19] This transformational research required a selection of methods that would enable the identification of cultural norms, attitudes, and behaviours that were needed to provide care that is culturally respectful, appropriate, and acceptable for TGD people. Thus, a qualitative approach was selected to enable the researchers to understand these cultural norms, attitudes, and behaviours in the interactions of the TGD people with the pharmacists and staff.[19]

Narrative inquiry was chosen as a guiding methodology for this study because it enabled the experiences of people who are TGD and their ideas for change in pharmacy practice to be explored at a deeper and broader level.[20] A narrative inquiry technique was utilised to conduct interviews, which

provided insight into the subjective experiences of TGD people while accessing care from pharmacies.[20,21] This technique allowed the researchers to listen to the past experiences of the TGD people regarding the provision of healthcare by pharmacists and pharmacy staff and how TGD people derive meaning from these interactions.[20,21] The researchers realised that transformation of the pharmacy practice might be necessary to deliver equitable and respectful pharmaceutical care to the often oppressed and marginalised TGD population. Therefore, hearing the voices of the TGD people was crucial for advancing social justice and human rights for TGD community members accessing care from pharmacies. Based on the principles of the transformative paradigm, the researchers carefully analysed data knowing that multiple realities exist, ensuring that the data analysis represents the reality acceptable to the participants. Data from these interviews assisted in understanding how these life experiences impact access to holistic TGD healthcare and provided opportunities to improve TGD healthcare by addressing identified barriers with solutions.

A semi-structured interview directed the conversation towards the central phenomenon, the provision of TGD healthcare by pharmacists.[22] Based on literature[2,3,6,7,23,24] and the Theoretical Framework of Accessibility (TFA)[25], a semi-structured interview guide (Appendix M) was developed to include broad, open-ended questions. Both inductive and deductive reasoning were used for developing questions. Three constructs of the TFA, namely, affective attitude, burden, and ethicality, guided the development of questions about TGD participants' experiences of interactions with pharmacists and staff. The constructs of perceived effectiveness and opportunity costs were utilised to design the questions about the positive interactions at the pharmacy and expectations from the pharmacists and pharmacy staff. The questions were designed to understand how pharmacists and staff can provide care that is acceptable to TGD people (Appendix M).[22] The prompts for conversation, such as present and past experiences of pharmacy visits and thoughts about pharmacists' role in TGD care, enabled the gathering of unique and nuanced stories.[22] Consistent with the transformative paradigm, the interview questions were shared with each participant before the interview. While it can be argued that sharing interview questions beforehand might lose spontaneity in the conversation with the participants, sharing promoted a collaborative approach, enabling the participants to take a more active role in the research, organizing their thoughts and recalling experiences of visiting pharmacies.[21] Additionally, knowing the questions beforehand enables participants from marginalised communities to feel more safe and comfortable.[26] The interview guide was piloted with two TGD people.

The research team and reflexivity

The principal researcher (SC) is a practising pharmacist with experience in working with TGD people and completing a Doctor of Philosophy (PhD) degree. RR and BG are experienced research academics and supervisors of this study. All researchers recognise that being cisgender women, they do not have a lived experience as a member of the TGD community and thus aim to understand the reality of the pharmacy experiences of TGD people through the interviews.

As described in the 'AusPATH public statement on gender-affirming healthcare, including for trans youth'[27], all researchers recognise that gender identity is not binary as usually viewed in a cis-normative world. They believe that healthcare professionals should interact with TGD people in a respectful and non-judgemental way. SC undertook training to ensure participants' cultural safety, used participants' preferred names (data anonymised after the interview) and pronouns, and respected their gender identity throughout the research process. Researchers also recognised that the provision of an inclusive environment was necessary for the participants to feel safe and welcomed in the space. SC wore her name and pronouns badge with a transgender flag background to introduce herself to the participants. She used gender-affirming language and displayed transgender and rainbow flags in the interview room at the university to provide a welcoming and inclusive environment for the participants.

Participants and recruitment

Adult transgender patients were recruited using purposive and snowball sampling methods.[19] Consistent with purposive sampling techniques, support groups and organizations for TGD people in Queensland were contacted and asked to advertise the study on their social media pages. This strategy allowed the researchers to purposively recruit participants whose life experiences equipped them with the information necessary to answer the research question. Interested TGD people were asked to contact the principal investigator (SC) for more information. The principal investigator sent an information sheet and a consent form for the study to interested participants and arranged online or face-to-face interviews according to participants' preferences. After written consent had been obtained, interviews were conducted either online via the Zoom application or face-to-face at the place preferred by the participant. The face-to-face interviews were conducted either at the Pharmacy Department of the university or at the cafe of the participants' choice. As TGD people represent a very small part of the population, snowball sampling assisted in recruiting possible participants identified through the contacts of already recruited TGD people.

Data Collection

Semi-structured interviews were conducted using the interview guide. After asking the broad questions, follow-up and focused questions were asked to clarify any ambiguity or gain a more detailed response from the participant. The interviews were conducted between February 2021 and June 2021, digitally audio-recorded and professionally transcribed. The transcriptions were verified for accuracy by listening to recorded interviews and comparing data with the transcript. According to Morse's view of saturation, when data in the participant stories starts replicating, data saturation is reached.[28] For narrative inquiry, the researchers looked for new and interesting information in the stories. Once the data revealed similar stories and no new issues were emerging, data saturation was achieved, and data collection was ceased.

Data Analysis

Participants' personal stories were analysed for meaning embedded in the social interactions between each transgender patient, their pharmacist, and pharmacy staff.[20] Data were organised into individual chronological stories.[20] These stories were then compared, coded, and categorized as concepts, behaviours, and events.[19] The principal investigator (SC) performed initial coding followed by a double-coding process with another researcher (RR) to ensure intercoder reliability. The codes were grouped into themes and sub-themes in discussion with the third researcher (BG), and the minor discrepancies in coding were resolved by consensus to ensure confirmability.[20] These preliminary themes emerging through the data were sent to the representatives of the TGD community via email. Representatives of the TGD community validated the preliminary themes for the correctness of the interpretation of their views in discussion with the other community members. This process respected their partnership in the research and increased the credibility of the results.

This study was reported using the Standards for Reporting Qualitative Research (SRQR) (Appendix N).[29]

Ethics approval

Ethics approval for the study was granted by the Human Research Ethics Committee of James Cook University (Approval no. H8265).

4.4 Results

Twenty-two TGD people participated in this study (see Table 4-1).

Table 4-1: Demographic information of participants (n=22).

	n= 22	%= 100
Gender		
Transman	8	36
Transwoman	11	50
Non-binary trans masculine	3	14
Age		
18-30 years	3	14
31-40 years	9	40
41-50 years	4	18
51-60 years	3	14
61 years and over	3	14
Location and MMM classification*		
Rural and remote areas, MM 5 and 7	2	9
Small regional city, MM 4	1	5
Large regional city, MM 2	10	45
Metropolitan area MM 1	9	40

*Note: The MMM (Modified Monash Model) classification defines the geographical location by its remoteness and population size. MM 1 indicates a metropolitan area, while MM 7 indicates a very remote area.[30]

Two key themes were identified across the participants' stories: (1) The challenges of accessing care from the pharmacy and (2) Making the most of interactions between TGD people and pharmacists.

4.4.1 Challenges of accessing care from the pharmacy

Participants who faced significant challenges while accessing care from a pharmacy never returned to that pharmacy. Instead, they chose to go to another pharmacy either where they felt welcomed or where they were asked minimum questions. Most participants reported challenges due to anticipated anxiety about accessing care, healthcare system constraints, compromised privacy and confidentiality at the pharmacy, assumptions of their anatomy by pharmacists and staff, a lack of

awareness of gender-affirmation therapies by pharmacists and living in a rural area. Many avoided interacting with pharmacists and staff or kept their interactions minimal.

4.4.1.1 Anticipated anxiety

Overall, in the initial gender affirmation phase, most participants reported experiencing anxiety before visiting the pharmacy. They feared being asked invasive questions, confrontation about their gender affirmation medicine use, and refusal of medicines. Most of them recognized it was just a fear, and their anxiety eased as they acquired secondary sexual characteristics of their affirmed gender.

> *"I have a name that doesn't match my body. I'm asking for hormones that don't match my body; in general, you catastrophize. Like you just go, oh, I'm going in there, and it's going to be all raised eyebrows and like ugh and ooh-aah, and you catastrophize all that stuff before you go in. All of the time that I've ever gone to get hormones, that doesn't happen. But it is a thing that scares a lot of people as they first go in, and it certainly scared me as I first went in, is more the perception of something going wrong than anything actually happening."* (T4, Transwoman)

> *"I think back when I first started transitioning, and things were a little more obvious, and also when I hadn't yet changed my legal name. So, if you go right back to that time, it was very scary and awkward for me navigating new territory and feeling very mismatched. But I knew that I was heading in the right direction and, too, it would eventually be, you know, the ultimate goal was to transition to male. I knew I'd get there at some point. But in the meantime, I had to endure a little bit of, you know, uncomfortableness as I'm getting through each step*." (T15, Transman)

4.4.1.2 Health system constraints

When some participants started affirming their gender medically, they faced the challenges posed by their names on the prescription being different from those listed on other documents, such as healthcare cards.

> *"I did have some issues with names and things. The psychiatrist that I saw would write my preferred name on the script, and then I couldn't get it because it's not on my Medicare. Then, the first time that I accessed hormones, there was a whole list of questions. It started when my name was called out, and my deadname was used. I was misgendered. This was very loud. Many other customers could hear this. It was very difficult."* (T6, Transwoman)

Participants reported experiencing deadnaming, misgendering and sometimes refusal of care.

> *"It was always tricky when I was first transitioning if I would have - the prescription would be still written in my deadname, and so, of course, that's always an issue, particularly if you're in female mode, let's say. You know, you're yourself, and they call out your deadname to come and get your drug. My deadname was a particularly strong male name, just as my name now is a particularly strong feminine name. So, I guess from that perspective back then; I don't know what they do now. But I think it's important that they learn preferred names and pronouns. But from my perspective, these days I don't have the problems because I've changed my name, so the scripts are written in my name."* (T8, Transwoman)

4.4.1.3 Privacy and confidentiality at the pharmacy

Most interactions in pharmacies occur in a public space where conversations can be overheard by both other customers and staff. Many participants expressed concerns about being outed to other customers or other pharmacy staff as there was no privacy at the pharmacy, especially when questions arose concerning prescription or medicine requests.

> *"When I first started to transition, I wasn't presenting female, and this caused some consternation with the pharmacist. Wanted to know if I was the person on the prescription if - why I wanted the hormones. They were quite loud about it, and it was quite embarrassing. This was all done in a very public manner in a very public place. It was excruciating, to be quite honest."* (T6, Transwoman)

> *"That was a bit, he didn't come to the counter and have a conversation. He sort of just yelled it from his working station, and that was kind of like, really? Privacy and all, you know, kind of thanks, dude. We're not talking about bloody Panadol or something, you know, we're talking about thrush medicine for somebody who's standing here and you're making me feel like, you know - but that's only been once, but that was probably the worst experience I've had. The only time I've ever had a negative reaction has been from a male pharmacist."* (T19, Non-binary trans masculine)

More specifically, this participant was devastated when such interactions occurred while visiting a pharmacy with a friend.

> *"..because I'm on an HRT or estrogen, she [pharmacy assistant] was concerned for blood clots, so she came out to the area where I was standing to check that I knew about the risks of blood clots with this medicine. However, I was standing beside a friend from church, who*

doesn't know I'm transgender, and I had trouble explaining to the pharmacist that I didn't want to talk about this in public. It was an unusual event, but she was concerned for my safety, the pharmacy assistant, but didn't realize doing it in a public place wasn't safe for me. That experience where someone accidentally was almost outing, they didn't do it in a private setting, so it was in a public place. They were the things that I would feel unsafe - in that pharmacy." (T14, Transwoman)

Many participants felt that living in rural areas was a disadvantage because of the challenges of maintaining privacy and confidentiality of information about their gender identity and gender affirmation process in these close communities.

"I'm really lucky with inner city that has really great trans doctors, really, I was just going to say I identify as binary male now, but I had a period of seven years where I was non-binary before I started testosterone. I've got lots of friends living rurally who are non-binary and do take testosterone. I think they would just have a whole extra layer of fear and worry every time they go [access it from pharmacies]." (T17, Transman)

4.4.1.4 "Challenged about my gender"

Participants often described needing to self-advocate for their gender affirmation medicines. Some of them faced confrontation from pharmacists about their hormonal medicines, indicating a lack of pharmacists' knowledge about gender affirmation therapies. Participants who felt responsible for researching the gender affirmation treatments were knowledgeable about the medicines used for gender affirmation and had to educate their healthcare providers about their treatments.

"The first time I went there was a script for estradiol. I gave it to the pharmacist there who was like a cis guy, and he was - he had like a long conversation with me. I think he maybe just didn't know about trans people at all. So, he was like, so - I was going by my old name then - he was like, oh, so you know that this is like a medicine for menopausal women, don't you? I was like, yeah, I know that. It was like 'so you still want to get it?' and I was like, yeah." (T12, Transwoman)

"We have to prove ourselves every time we access - for instance, when I was in the hospital, I was on medicine for my blood pressure. I had to answer a whole load of invasive questions from the pharmacy department before they would allow me to have the hormones that I'd been on for ten years, or 12 years. You know, I tried to explain that it wasn't a question of whether I could take them or not, I had to take them because I don't produce any of my own." (T6, Transwoman)

> *"I had a piece of specular interaction with a hospital pharmacist at the pharmacy attached to the major hospital I had my heart surgery in, getting medicine at discharge. The pharmacist asked me why I was on transcutaneous estrogen because that's for ladies. Mate, I certainly wouldn't face it. I'd just had my chest cracked open. But the script would have said Mrs, the script said Mrs, and clearly in female attire in a roughly female form, so – and interestingly, she was a younger pharmacist - she didn't seem to be coping very well."* (T11, Transwoman)

Participants reported that pharmacists and pharmacy staff assumed their reproductive anatomy based on their appearance and sometimes refused to supply products. Many participants felt awkward accessing products specific to male or female bodies. Some of them needed to disclose their gender identities before they could access the product.

> *"One time that made me uncomfortable was actually from a male pharmacist because obviously I still have the - well, not obviously, but I still have the genitalia assigned to me at birth. So, when I had to access medicine for that, you know, the male pharmacist was like- is that for you? Why are you taking that, and is that prescribed to you by a doctor? It was just like, dude, far out, because you know, I kind of know what I need. The pharmacy assistant had known me - or knows me, and so she had to go up to him and say, you know, this product is for this person."* (T19, Non-binary trans masculine)

A potentially awkward encounter turned into humiliation for this participant.

> *"[After bottom surgery], I needed a douche to flush my vagina. I had this whole series of what do you want that for, what do you need that for; they don't work anally, why do you need to flush your own - and I'm- you know, it's for me, for my vagina. You haven't got one of those - This is an assistant. I left without my douche, and I left humiliated."* (T6, Transwoman)

4.4.1.5 Avoidance behaviour: minimizing interactions

Most participants reported that pharmacists and pharmacy staff were professional in their interactions. Surprisingly (and sadly), many participants perceived having minimum or no interactions with pharmacists or pharmacy staff as a positive experience.

> *"I've been met with professionalism every time I've gone into a pharmacy. I've never had a negative experience getting hormones, specifically. I don't want to have those conversations with people at the counter of a chemist. I know what I want, and I just want to get that and get out."* (T4, Non-binary trans masculine)

"I say positive in the fact that there's sort of been no questions asked, really. So, medicine was provided as per my script without any questions about why or anything. So, that, for me, is a positive experience." (T7, Transman)

4.4.2 Making the most of interactions between TGD people and pharmacists

Participants recognized that pharmacists play a meaningful role in TGD health and provided insights about how pharmacists can improve care provision to TGD people.

4.4.2.1 "Treat us as a person"

When accessing care from pharmacies, the participants expected to be treated like regular human beings and not as something different because they are TGD people. Participants reported feeling welcomed at the pharmacies where pharmacists and staff provided services with a friendly attitude, building rapport with their clients and establishing a trusted relationship.

"..definitely just want people to be friendly. If people aren't friendly, as a transgender person, that's always my first thought, that it's because I'm transgender, which is ridiculous because before I came out as transgender, sometimes people were still unfriendly to me. They were probably just having a bad day." (T18, Transman)

"It's that judgement; it's that being told you're not who you are... we are certainly downgraded. So, just to treat us with respect, don't treat us like a joke, and if we want a douche, we need a douche, not a thousand questions. Don't laugh behind the till with your friend. These things have happened -pharmacy assistants think it's a real joke, but it's not; it's real-life for us. There might not be many of us, but we are human, and we have all the emotions and all the thought processes of our target gender, and we need them to understand that." (T2, Transwoman)

"Well, their interaction hasn't been any different to me from when I used to present as male. So, you know, I've been going to these chemists for years, so they knew me beforehand and they knew me after it. Now, I don't know if it's the same staff and things like that. It's not as if I'm at the chemist every day of the week. So, I've been going for years. They probably recognize me and probably noticed my gradual transition and everything else but, as I said, it's all been - I used to have positive experiences when I was presenting as male as well, not that I knew them by their first name or anything. But other than that, they just treated me before transition the same as after transition."
(T9, Transwoman)

4.4.2.2 Appropriate verbal and non-verbal communication

Participants expected that pharmacists educate themselves about TGD people to avoid the need for inappropriate personal questions.

> *"Don't ask me invasive questions; obviously, they need to ask, have you had this before, do you know about the side effects. So, they normally do that for most of my medicine, so like normal medical questions, they'll ask. That's their job. Nothing like invasive that you wouldn't ask a person."* (T5, Transman)

Participants experienced non-verbal clues such as weird looks, staring, unfriendly facial expressions, and gestures at pharmacies, suggesting pharmacists and pharmacy staff need to be aware of their body language.

> *"I think in general, transgender people tend to - have to get pretty good at reading body language pretty quickly because sometimes you can end up in hostile situations. You become sort of heightened aware of how people are reacting to you. So, I guess that's like something that may be pharmacists would want to be aware of, that those - their displeasure is perhaps more obvious than they realize it is sometimes, you know."* (T18, Transman)

> *"This was early in my transition, and it would be fair to say that I was quite masculine in appearance, talking about facial appearance and structure. There was the occasional disapproving look from some of the young ladies who were working."* (T11, Transwoman)

> *"But they might make kind of a like a face, or just you can tell from their body language that they're not really liking the scenario or the situation or me."* (T15, Transman)

4.4.2.3 "My medical transition is not an illness – it's about the quality of my life"

Participants emphasized that while transitioning is complex, pharmacists should be aware that being transgender is not an illness. Gender affirmation medicines substantially improve quality of life.

> *“The healthcare circumstances for transgender folk who are medically transitioning is a fairly complicated balancing act for healthcare professionals. My medical transitioning is not an illness; it's a set of adaptive behaviours, it makes a substantial difference to my quality of life. So, I don't want my hormone replacement to be seen as some sort of illness. At the same time, I don't want anyone to pretend that there aren't some risks for a 60-year-old-plus human who's still having estrogen because there are. So, I'm asking my pharmacist to be partly blind to the fact that I'm on estrogen, but I'm asking them to be aware that I'm on*

estrogen. Additionally, I'm asking them to be aware that I have a whole set of health risk profiles that belong to my 46 XY status." (T11, Transwoman)

Some described their hormonal medicines as lifesaving and essential for their mental health.

"I had a pharmacist one time saying, you know, at this level, it's going to do damage to your kidneys or liver. I said, yes, probably. I'm aware of that. They said, well - it was like, then why are you doing this? I'm doing it because if I get - if my liver packs it in at 70 because I've been taking these hormones for 50 years, well, I've actually lived 50 years longer than what I would have without it. The pharmacist was in shock because literally, it's actually lifesaving medicine for trans people - it's, you know, HRT to me is more than just changing my body or giving my body the right amount of estrogen. It's also part of my mental well-being because I know when I went down to Cloncurry, I left my hormones at home, and I was thinking, oh, I should drive back and get it, will I drive back and get it? It was playing on my mind. But then I was, it's three days, I figured, look, I'll just get home with a big beard. So, it's your mental health well-being, but it's also our physical well-being because without the medicine that helps balance us out, and I know I would more than likely end up self-harming again, particularly if the anxiety and pain take over." (T8, Transwoman)

4.4.2.4 Create an inclusive environment

Some participants suggested pharmacists should provide a welcoming and inclusive environment by displaying TGD-friendly materials and transgender or rainbow flags.

"If pharmacists can display a small trans-friendly flag somewhere in the corner of the pharmacy or something like that, it would let transgender people know that it is going to be okay when they come in and ask for their medicine. That's probably one of the few things, just to help people get over those initial hurdles and once it all becomes fairly normal to them, it's not so bad." (T1, Transwoman)

"The place I go to locally, they don't need those name tags to remind themselves that they are making an effort to be inclusive because they're succeeding. But as a general principle, those little symbols go a long way for folk in my community. When people have gone to the effort of putting on one of the little bits of iconography up, it means they are interested and not exclusive. Those sorts of things do actually help a lot." (T11, Transwoman)

4.4.2.5 Gender awareness education

Participants stated that pharmacists and staff should seek training to become aware of sex, gender, and sexuality concepts.

> *"I ideally would like [pharmacists] to be educated on trans people. I think everyone really should be because more and more people are feeling more comfortable with coming out nowadays, and the more people with knowledge on the topic, the more they can spread that information around and the more accessible the world is for trans people."* (T16, Transman)

> *"My personal experience has been mainly of people who have been affirming of me as me. That's certainly not a universal story amongst the members of my community, which suggests to me that I would be quite surprised if you did not end up with conclusions about some of the basics of gender, sexuality and biological sex as different parts of a human. Some of those basics might need to be taught to pharmacists and pharmacy students and their allied staff."* (T11, Transwoman)

Provide information about medicines and drug interactions, and conduct home medicines review

Participants reported that pharmacists were more accessible and reliable in providing information on medicines. Accredited pharmacists in Australia provide medication review services at patients' homes or residential aged care. Some participants stated they might seek pharmacist services such as home medicine reviews from gender-aware pharmacists. However, some participants lacked confidence in pharmacists' knowledge and were cautious of the services provided.

> *"Just to make sure that I am safe if the medicines that my GP might put me on contraindicate, or there's a risk. It hasn't happened yet, but that would be great, that they could say, are you aware that this tablet, even if it was say St John's Wort for - things like that. Those things are really important for me to keep safe. So, I'm aware that my pharmacist would actually warn me or just point out that there's a contraindication or not safe, so I know that they would be proactive with that."* (T12, Transwoman)

> *"Actually, one pharmacist, he didn't even know that I had the fatal drug allergies because I'd stopped at a pharmacy, I didn't normally go to on the way home. He was quite insistent about giving me an information sheet about a new medicine a doctor had prescribed me to try. If he hadn't been really insistent in giving it to me, I might not have read it, and it was actually really lucky that I did, because it turned out the medicine was in the same class as the one that I'm fatally allergic to, and it might not have caused a reaction, but it could have also killed me. I didn't end up taking it. So that sort of information can be quite useful. It doesn't have anything*

to do with transgender but that's certainly important to me and it's helped me from pharmacists in the past, definitely." (T18, Transman)

4.5 Discussion

This is the first study that provides in-depth insight into the experiences and perceptions of TGD people regarding accessing care from Australian pharmacies. Significant challenges to accessing care were identified, along with opportunities to make the most of the interactions between TGD people and pharmacists, proposing solutions to provide appropriate and person-centred care to people belonging to the TGD community.

Although friendly attitudes and standard customer service from the pharmacy were perceived to be vital for making most of the TGD client and pharmacists/staff interactions, some participants experienced disrespectful interactions. As guided by the Pharmaceutical Society of Australia's Code of Conduct and Practice Standards, pharmacists are required to deliver respectful and person-centred healthcare to all people.[31,32] Despite this, TGD participants in this study experienced deadnaming, misgendering, and sometimes refusal of care from pharmacies, similar to the previous two studies.[6,7] Such incidences may significantly affect the physical and mental well-being of people who are TGD and may cause delay or avoidance in accessing care from pharmacies.[6,33] Therefore, the need for education about TGD cultural awareness and sensitivity for pharmacists was evident in this study. Cultural awareness education is vital to recognize and avoid personal biases and assumptions about gender identities.[12,34] Such education is required to discard stereotypical ideas about TGD people and recognize that the TGD community is as varied as any other population group.[34] This understanding is crucial for avoiding inaccurate assumptions of the healthcare needs of people who are TGD and for providing non-judgmental care.[12,34]

As highlighted by the study participants, pharmacists can provide inclusive environments for people who are TGD by displaying TGD flags, stickers, or brochures about the LGBTIQA+ community. Pharmacies may develop and display their non-discrimination policies to indicate their support for people with diverse gender identities and sexualities. These little signs of inclusivity are important for TGD people to feel safe and welcomed and may ease the anxiety of accessing care from pharmacies. Being a multicultural society, Australian pharmacists may be aware of the cultural differences and that they are required to provide care to all clients respecting the clients' cultural backgrounds. Our data indicated that the communication with pharmacy staff is influenced by the greater community environment and the community itself. Exposure to a more accepting community that acknowledges cultural differences may minimize bias and improve the care the pharmacy staff provides to the TGD people.

Some TGD people may not have their preferred names on documents such as birth certificates, driver's licenses, and healthcare cards.[35] Therefore, they received their medications labelled in their legal name. This may be due to the limitations of electronic medical records or the requirements of healthcare billing systems.[23] To avoid confrontation over names, some participants in this study went so far as to tear off dispensing labels attached to medicine packaging as it was labelled under their legal name and not their preferred name. Discarding medicine labels may have serious consequences, such as consuming inaccurate doses, taking the wrong medicine, and missing cautionary warnings.[36,37] The national standards for labelling dispensed medicines ask pharmacists to "consider cultural naming conventions, the consumer's preferred name, and whether additional names are needed to assist identification" while labelling medications.[38] Incorporating fields to record patient's preferred name, legal name, gender identity, sex assigned at birth, and pronouns in all dispensing software and electronic medical records is therefore essential for dispensing medications with patient's preferred names and ensuring medication safety.[35] TGD people should be provided with the opportunity for updating these personal details in their medical records.

Pharmacists and pharmacy staff often obtain personal information and inquire about health issues and medication history to provide person-centred care to their clients.[37] However, asking for such information or providing consultation in the general area of the pharmacy may compromise privacy and confidentiality.[39] Such encounters were experienced by the participants of this study and caused accidental disclosure of their gender identity to other staff and clients at the pharmacy. If privacy is compromised, some clients may not disclose their private information to the pharmacists, leading to the dispensing of potentially inappropriate medicine or the provision of incorrect advice.[6] Although pharmacies are busy places, the pharmacist and staff should mindfully use private spaces for consulting people who are TGD to reduce the incidences of accidentally outing them to staff and other clients at the pharmacy. If such space is unavailable, utilizing other strategies such as lowering voice, telephone consultations, using a quiet area in the pharmacy, and notifying the patients about quiet times in the pharmacy may protect patient privacy.[39]

This study shows that pharmacists lack pharmacotherapeutic knowledge about gender affirmation therapies. This knowledge gap may affect the trust of TGD people in accessing care from pharmacies.[3] A recent Australian study on pharmacists' experiences of LGBTI healthcare provision identified that pharmacists lacked confidence in their knowledge about gender affirmation therapies.[11] Education about gender terminology and gender affirmation therapies for TGD people has been shown to enhance pharmacists' and pharmacy students' attitudes and knowledge of providing care to TGD people.[40-45] Information about whether such education is integrated into

Australian pharmacy curricula and continuing professional education activities is lacking. A commentary by Newsome et al. has shared practical recommendations of topics and strategies for the inclusion of TGD care in pharmacy curricula to ensure the pharmacotherapeutic and cultural competency of pharmacy students in TGD care.[12] Recommended strategies included providing holistic care to people who are TGD and incorporating TGD care throughout pharmacy curricula in the relevant sections to provide multiple exposures to the topics for strengthening the understanding of the topics.[12]

Participants of the study identified the important role pharmacists play in their care. However, to engage in meaningful delivery of pharmaceutical care to TGD people, pharmacists and staff need to seek education in TGD healthcare proactively. Including transgender healthcare education in continuing professional education and pharmacy curricula is essential for improving cultural competence and bridging the pharmacotherapeutic knowledge gap. Such education will enable pharmacists to communicate with confidence while providing respectful pharmaceutical care to TGD people in Australia. Future research is required to evaluate the impact of such transgender healthcare education on the knowledge and attitudes of Australian pharmacists towards their TGD clients.

4.6 Limitations

This is the first study exploring the perceptions and expectations of transgender people of Australian pharmacies, which ensured the representation of transmen and non-binary people, a population generally lacking in the TGD people literature. However, although all trans and gender diverse people were invited to participate in the study, not all gender identities were captured by the study. Therefore, the issues of accessing care from pharmacies for people with gender identities such as sistergirl and brotherboy may have remained unidentified by this study. Another limitation of the study could be that the findings may not be generalised universally as the data were obtained only from Australian participants, mainly from Queensland. The differences in cultural and social views towards TGD people and variances in the pharmacy settings in other countries may affect the generalisability of these findings.

4.7 Conclusion

TGD people in this study continued to experience barriers to healthcare, such as misgendering, dismissal of their gender identity, and refusal of care in pharmacies in Queensland. Primary factors contributing to this situation include gaps in pharmacists' pharmacotherapeutic knowledge and a lack of cultural sensitivity in pharmacies. The likely barriers to accessing care from these pharmacies were anticipated anxiety of accessing care, healthcare system constraints, compromised privacy and

confidentiality at the pharmacy, and being challenged about their gender. Transforming pharmacy practice requires education about TGD healthcare to be included in continuing professional education and pharmacy curricula. Participants of this study suggested that providing education about creating an inclusive pharmacy environment, using appropriate culturally respectful language, and training pharmacists about gender-affirming therapies may address the identified barriers. Such education would equip Australian pharmacists and staff to deliver equitable, person-centred, gender-affirming care to TGD people and improve the confidence of TGD people in accessing pharmaceutical services from Australian pharmacies, thus enhancing their quality of life.

4.8 Conflict of interest

The authors declare no conflict of interest.

4.9 Funding

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Chapter 5: Pharmacist Interviews

Having explored the perceptions and experiences of transgender and gender diverse (TGD) people concerning pharmacy care, it was important to simultaneously explore the other essential aspect of this equation - the experiences, practices, and attitudes of pharmacists providing care for TGD people. The published research article about the experiences, attitudes, and practices of providing care to TGD people of pharmacists in Queensland, Australia, makes up the content of this chapter. This article has been formatted to match the spelling conventions of Australian English. However, the original publication contained spelling variations following the rules of US English as per the publisher's specifications.

Title: "I don't know much about providing pharmaceutical care to people who are transgender": A qualitative study of experiences and attitudes of pharmacists.

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"I don't know much about providing pharmaceutical care to people who are transgender": A qualitative study of experiences and attitudes of pharmacists

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5.1 Abstract

Background: Globally, with the increased visibility, the number of transgender people accessing healthcare services has risen in the last decade. Although pharmacists are required to provide equitable and respectful care to all patients, their experiences interacting with trans and gender diverse (TGD) people and attitudes towards the provision of care are largely unknown.

Objectives: This study aimed to determine the experiences and attitudes of pharmacists providing care to TGD people in Queensland, Australia.

Methods: Within a transformative paradigm, this study used semi-structured interviews conducted in person, over the phone, or through the Zoom app. Data were transcribed and analyzed by applying the constructs of the Theoretical Framework of Accessibility (TFA).

Results: A total of 20 participants were interviewed. Analysis revealed all seven constructs across interview data, with affective attitude and self-efficacy being the most frequently coded constructs, followed by burden and perceived effectiveness. The least coded constructs included ethicality, intervention coherence, and opportunity cost. Pharmacists had positive attitudes towards providing care and interacting professionally with TGD people. Prime challenges in delivering care were being unaware of inclusive language and terminology, difficulty building trusted relationships, privacy and confidentiality at the pharmacy, inability to locate appropriate resources, and lack of training in TGD health. Pharmacists felt rewarded when they established rapport and created safe spaces. However,

they requested communication training and education to improve their confidence in delivering care to TGD people.

Conclusion: Pharmacists demonstrated a clear need for further education on gender-affirming therapies and training in communication with TGD people. Including TGD care in pharmacy curricula and continuous professional development activities is seen as an essential step toward pharmacists improving health outcomes for TGD people.

Keywords

Pharmacists, Community Pharmacy, Transgender, Non-binary, Healthcare, Professional Education

5.2 Introduction

In Australia, some population groups are considered vulnerable or disadvantaged.[1] People in these groups experience significant inequities in accessing and receiving health care.[1] These groups include people who are homeless, Aboriginal and Torres Strait Islander, lesbian, gay, bisexual, transgender, intersex, queer, asexual (LGBTIQA+), culturally and linguistically diverse, prisoners, children, older adults, and people with disability or mental health conditions.[1,2] Pharmacists are easily accessible and trustworthy health professionals well-positioned to facilitate access to healthcare services for high-risk population groups, including people belonging to transgender and gender diverse (TGD) communities.[3]

Sex, usually assigned at birth as male, female, or intersex, is determined by the biological attributes of an individual based on chromosomes, gene expressions, hormone levels, and reproductive organs.[4] Gender is a combination of the socially constructed characteristics, roles, behaviours, expressions, and identities of girls, women, boys, men, and gender diverse people.[4] People whose assigned sex at birth is different from their gender identity may identify as TGD.[5] About 0.5 - 4.5% of adults worldwide identify as TGD.[6] Exact statistics about how many people in Australia are TGD are not available. However, an Australian study of individuals in grades 10 – 12 found that about 2.7% of these young people were TGD.[7]

The vulnerability of the TGD population is highlighted in a study by Bretherton et al., where nearly three-quarters of the 928 TGD participants were diagnosed with lifetime depression and about 63% with anxiety.[8] Additionally, about 63% of individuals had previously self-harmed, and 43% attempted suicide.[8] Globally, several other studies have reported similar health disparities for TGD people, potentially affecting their ability to access healthcare.[9-13]

TGD individuals have reported various challenges in navigating the healthcare system, often facing discrimination, stigma, and marginalization during healthcare encounters.[8,14-17] Some TGD people have stated that they have delayed or avoided accessing necessary care due to previous negative experiences in healthcare settings, including pharmacies, instead resorting to online or street suppliers.[14] This situation may be explained by findings suggesting that although pharmacists provided advice and medications for a variety of health conditions, they were less confident and comfortable while delivering care for people who were TGD.[18-21]

Pharmacists can provide information about gender-affirming hormonal medicines, adverse effects, and the timeline for physical changes to TGD people seeking hormonal therapy for gender affirmation.[3] Recent data suggests that the average Australian visits pharmacies at least 18 times yearly, placing pharmacists at the forefront of access to healthcare.[22] Pharmacists, therefore, have a role to play in caring for TGD people, including reminding them of necessary screening tests and monitoring while using gender-affirming hormonal therapies.[3] Many preventative services offered through community pharmacies, such as blood pressure monitoring, blood glucose and cholesterol testing, smoking cessation advice, vaccinations, and weight management, may be beneficial for TGD people in maintaining and enhancing their health outcomes.[3,23]

Studies exploring TGD individuals' perceptions of pharmacy services have reported that most TGD people believed that pharmacists could play an integral role in their healthcare by providing information about medications, including gender-affirming hormonal medications, associated adverse effects, and their management, conducting medication reviews, and identifying drug interactions.[19,24] However, many TGD people perceived that pharmacists lack education about gender-affirming therapies and other TGD health issues and appropriate communication with TGD people.[14,19,24] Although pharmacists can play an essential role in TGD healthcare, there is limited research about their attitudes towards and current practices of providing care to TGD people and how they perceive their role in TGD healthcare.

No study has investigated the attitudes and experiences of Australian pharmacists delivering care for TGD people exclusively. Given the significance of pharmacy services in the healthcare of TGD people, such an investigation is essential to ensure that TGD people are treated equally and receive appropriate services through Australian pharmacies. Therefore, this study aimed to determine the experiences and attitudes of pharmacists providing care to TGD people in Queensland, Australia.

5.3 Methods

The transformative paradigm encourages social change for underrepresented groups,[25] thus providing an appropriate theoretical framework for this study focused on the care for people who are TGD. Designed by this transformative lens, the study was conducted based on the ethical standards of social justice and human rights.[25] The chosen qualitative approach is consistent with transformative research, as it enables exploration of the experiences and attitudes of pharmacists reflective of the cultural norms, attitudes, and practices in place and the required knowledge and attitudes necessary to offer respectful, appropriate, and acceptable care for a vulnerable group such as TGD people.[25]

For this qualitative study, a semi-structured interview guide (Appendix O) was designed based on the available literature.[3,5,16,19,26] The interview guide was emailed to the participants before the interview. Distributing interview questions in advance encouraged a collaborative approach, engaging the participants by allowing them to organize their ideas and recall experiences of delivering care to TGD people.[27] However, while it can be argued that the earlier provision of an interview guide may reduce the spontaneity of the conversation, this was not evident during data collection.

The research team and reflexivity

The principal researcher (SC), a Doctor of Philosophy (PhD) candidate, conducted interviews with the participants. SC is a registered pharmacist practising in a community setting and has experience working with TGD people. SC has undertaken comprehensive training in cultural safety and pharmacotherapy for TGD people. RR and BG, as the supervisors of this study, are experienced research academics with clinical backgrounds in nursing and pharmacy. All researchers are cisgender women and acknowledge that the reality of lived experiences as a member of the TGD community must encompass many more variables than they can imagine. They understand that accessing care from various healthcare settings may be challenging for many TGD people and have explored these challenges faced by the TGD community members accessing care from pharmacies.[24] In this study, they strive to understand the reality of pharmacists' experiences while providing care to TGD people.

All researchers believe that gender identity is not only binary but a spectrum, and all healthcare professionals are responsible for respecting people's gender identity and providing non-judgmental care. Researchers engaged in reflexive practices throughout the research process, ensuring that their knowledge and perspectives about transgender healthcare would not pose any expectations on data collection or influence analysis or interpretation of the data. Such practices included reflexive journaling by SC, regular research meetings during analysis where codes and themes were critiqued among the research team, and preliminary discussion of findings with other pharmacists.

Reflexive journal entry (10th May 2021)

"When participants wanted to check if they have been doing the right thing when interacting with TGD people, it was difficult to refrain from commenting and going back to data collection without influencing their answers. Most of the time, I said – let's finish this interview first and then we can discuss more about your approach."

Participants and recruitment

Purposive convenience sampling was utilised to recruit pharmacists from various locations ranging from rural and remote areas to metropolitan cities to provide data about their interactions with TGD people in diverse community pharmacy locations.[28] The sampling was purposive in terms of the locations of the individuals invited to participate in the study and the specification of their profession (Table 5-1). Convenience sampling of the University Pharmacy database supplemented access to potential participants in rural and regional Queensland. Sixty potential participants were contacted by email, provided a detailed information sheet, and invited to participate. Nine participants were recruited after the first email. A reminder email was sent two weeks after the initial email, which resulted in the recruitment of an additional 12 participants. Out of 21 participants, one could not attend the interview for an unknown reason. All participants had previously encountered TGD people in their practices. According to the participant's preference, interviews were scheduled and conducted face-to-face, over the phone, or via the Zoom software program. Written informed consent was obtained prior to the interview. The face-to-face interviews were conducted either at the participants' workplace or at the cafe of their choice.

Data Collection

Based on the interview guide, semi-structured interviews were conducted between February 2021 and June 2021. At the beginning of the interview, demographic information such as age, gender, geographical location, and years of experience working as a pharmacist was collected from the participants. After the broad questions, follow-up questions were asked to acquire a more in-depth response from the participant or to address any ambiguities.[29] The interviews were digitally audio-recorded and then professionally transcribed. SC checked the accuracy of transcripts by listening to the recorded interviews and matching the content with transcripts.

Data Analysis

Data were anonymised before being thematically analyzed. The seven constructs of the TFA were utilised to generate themes deductively (Table 5-2).[30] SC completed the initial coding, and a double-

coding process was conducted with a second researcher (RR) to ensure intercoder reliability.[29] First, transcriptions were read to understand participants' experiences providing healthcare to TGD people. In the next step, the transcriptions were read again and coded. Codes related to the same topic were combined to identify themes. The themes were reviewed with the third researcher (BG). As a result of reviewing the themes, some were merged, and others were subdivided and then the established themes were categorised into the seven overarching constructs of the TFA.[30] When data showed recurring themes and no new issues were arising, data saturation was considered to have been reached, and data collection was terminated.[31,32] Data-derived primary themes were emailed to a selection of pharmacist participants. After a discussion with other pharmacists, they confirmed that the primary themes were valid representations of their perspectives. This consultation affirmed their partnership in the research, improving the credibility of the findings.

The Standards for Reporting Qualitative Research (SPQR)[33] was used to report this study (Appendix P).

Ethics approval

The Human Research Ethics Committee of James Cook University approved this study (Approval no. H8265). Having been notified that their participation was voluntary, their data were confidential and that they could withdraw at any stage, knowing that any unprocessed data could be removed, all participants provided written consent prior to the interview. Additionally, verbal consent was obtained at the commencement of the interview.

5.4 Results

Participants

Twenty pharmacists participated in this study. Although convenience sampling was used to attain an equal number of participants from all geographical locations, most pharmacists responding to the study invitation were from regional areas. Additionally, most participating pharmacists were younger, with less than ten years of experience. This demographic of the sample is, however consistent with a snapshot of the statistics from 2020 that indicates more than 42% of pharmacists practising in Australia are under 35 years of age.[34] Also, more open attitudes of early career pharmacists (with less than ten years of experience) towards inclusion and diversity of LGBTIQA+ people may be another factor for participating in the study. The recent publication of the Pharmaceutical Society of Australia's 'Equality Position Statement' was driven by early career pharmacists,[35] indicating a higher acceptance and willingness of younger pharmacists to provide inclusive care.

Table 5-1: Demographic information of participants (n=20).

	N= 20
Gender	
Female	15
Male	5
Age	
21-30 years	11
31-40 years	7
41-50 years	0
51-60 years	2
Location and MMM classification*	
Very remote communities, MM 7	2
Large rural towns, MM 3	1
Large regional city, MM 2	12
Metropolitan area, MM 1	5
No. of years working as a pharmacist	
0-5	10
6-10	6
10-15	1
15-20	1
More than 20	2

*Note: The MMM (Modified Monash Model) classification defines the geographical location by its remoteness and population size. MM 1 indicates a metropolitan area, while MM 7 indicates a very remote area.[36]

Coding

Applying the constructs of the TFA to interview data enabled the exploration of several factors that may have influenced pharmacists' provision of care to TGD people. All seven constructs were identified in the data. Pharmacists demonstrated high acceptability of delivering care to TGD people and displayed positive attitudes towards the provision of non-judgmental and respectful person-centred care. Although most pharmacists faced challenges such as not knowing how to communicate with TGD people and inadequate knowledge of gender-affirming therapies, all pharmacists were eager to improve their understanding of TGD care.

Affective attitude and self-efficacy were the most frequently coded constructs in all twenty interviews, followed by burden and perceived effectiveness, coded in at least thirteen interviews (Table 5-2). The least coded constructs included ethicality, intervention coherence, and opportunity cost, coded in a minimum of four interviews. Quotations from the data representing each construct are illustrated in Table 5-3.

Table 5-2: Data analysis applying TFA constructs.

Construct of TFA	Definition	Code frequency
Affective attitude	How an individual feels about taking part in an intervention	39
Burden	Perceived amount of effort that is required to participate in the intervention	27
Ethicality	Extent to which the intervention has a good fit with an individual's value system	4
Intervention coherence	Extent to which the participant understands the intervention and how it works	16
Perceived effectiveness	Extent to which the intervention is perceived as likely to achieve its purpose	27
Opportunity cost	Extent to which benefits, profits, or values must be given up to engage in intervention	7
Self-efficacy	Participant’s confidence that they can perform the behaviour (s) required to participate in the intervention	105

Table 5-3: Themes, constructs and illustrative quotes.

Related themes	Construct	Quotes
Non-judgmental care Apprehension	Affective attitude	"Don't be judgmental, just don't be fazed. Just say, oh, I just wanted to know. You've got to be professional and friendly. You just talk to them like you talk to anyone else, they're still a person, just like anyone else." (P4). "I think that as a pharmacist, we need to provide health care to anybody in the same way, so I wouldn't have any personal conflicts with providing them with this service. With transgender people - depending on what stage of transition they're at, sometimes I feel scared to approach it because I don't want to do the wrong thing and upset them." (P14). "The most challenging thing is not wanting to overstep and to assume. Sometimes you can look at a person, and I'm pretty sure that they're transgender, but other times, people pass, and you can't tell. Sometimes you have to acknowledge those questions, but then you don't want to go and ask a question that people could think is offensive." (P15). "The patient's name on their Medicare card was different to the script. That was a bit of an awkward conversation, and I'd like to know how to handle that sort of situation better." (P9).
Stigma Difficulty in establishing trust	Burden	"It was trying for them to get the confidence that we weren't judging. We just wanted to help them on their journey as best as possible, so it was probably my assumption here and everywhere that there is a lot of stigma." (P1). "Just making sure that they feel safe and that they can ask me the questions and that I will not be judging them for their decision, or I will not be insensitive to how they feel. That's the hardest part for me creating that sort of trust rapport. For transgender people, I believe that it is hard because they have had a lot of setbacks. So, they take a lot longer to trust people." (P13).
Religious beliefs Inclusive and supportive environment	Ethicality	"I'm quite well known in our community to have Christian faith. So that person [a TGD person known to the pharmacist through his involvement with the Church] might see that as a stumbling block to trusting me as a healthcare professional, but the patient has trust in me and feels comfortable seeking out our assistance." (P20).

		"…because I had one patient whom I knew before transitioning, and I'd seen a couple of times over the years. He said, oh, for the first time, I rang in for the script, and I was scared about what you were going to say. I'm like, it doesn't change who you are. I'm just happy that you got it sorted out. So, I think having somewhere where he could come where he was supported was really important." (P19).
Learning from exposure to TGD people Respectful and gender-affirming language	Intervention coherence	"I have a friend who is transitioning too, and so her experiences have actually helped me to go, oh, okay, so this is something that's really important. One of the patients that I actually asked did have a preferred name; he almost started crying because he was going through stuff at his work, and he's like my work won't even use my preferred name." (P19). “I know people who are transgender in my personal life, and I go to sort of rainbow family groups. So, I'm socialized to a lot of that stuff in a way that most people aren't because that's part of my community. Some people want to be called by their pronouns and some people are happy to just be referred in a general way if you're not sure. Other people don’t mind, you know, getting misgendered and it's such a broad thing out there.” (P15). "Sometimes we openly ask - Hi, my name is [de-identified]. What name do you prefer? And that's an easy way to overcome that, but sometimes I haven't got to that stage of building a relationship yet, and you're waiting to call out the prescription. I just use their last name. I say - a prescription for such and such address using their last name. Don't even need to go there." (P3).
Pleasant pharmacy experience for TGD people Pharmacy revisited by TGD people	Perceived effectiveness	"I would want them to feel comfortable in the pharmacy and that they were referred to in the correct way, like using the name on the prescription and identifying with them as they wish to be identified, and for them not to feel any judgment or prejudice... know that they have a positive experience at the pharmacy." (P11). "She hadn't shaved for the day, her hair was a mess, she just started crying, and she was having a tough day. It's just like, oh sweetie, what's going on? Probably not coming across as very professional, but more one-on-one, so rather than being that stern pharmacist, they can't relate to or can talk to. That's how you create a relationship with people and make a difference" (P19).

		"They're happy with your interaction, and they're happy with the advice that you give them, or you can look at things together and work things out together, that they feel confident and comfortable about their medication and what it's going to do for them. Then knowing that they're going to come back to see you and you're going to continue on their journey with them and see how things change." (P6).
Comfort and confidence Gender-affirming therapy knowledge deficits Unfamiliar with available resources and guidelines	Self-efficacy	"But I think the greatest challenge I think for anyone in health care, the pharmacist and the pharmacy assistants, is how do we approach these transgender people, what happens if I make a mistake with identifying gender, or name, and things like that." (P20). “It's quite difficult to educate a person if you don't really know what you're telling them. So, I find it hard to talk to them as well maybe, because I feel like I'm not comfortable telling them anything because I don't know much." (P12). “If the person wanted to have an in-depth conversation with me about what they were prescribed and why, and what else they could be prescribed, I don't think that I would be able to answer their questions because I don't really know myself what the treatment protocols are and what the doses are.” (P11).” “There's nothing in our resources that covers that [transgender care], like your AMH [Australian Medicines Handbook] and the APF [The Australian Pharmaceutical Formulary] things. (P6).
Privacy and confidentiality Engaging TGD people in educational interventions	Opportunity cost	"When it's busy, and there are lots of other people in the store, and sometimes there's also people that are within earshot, and you want to make sure you're providing them with the same service, and I guess courtesy that you would provide to anyone else when you're communicating with that - you know, confidential or private issues or anything like that." (P9). "We probably need some more education and firsthand experience to have actual people come and talk to us and say what they think or what they prefer, to share their individual experiences, and just even have some healthcare workers that do deal with transgender patients sort of explain from their perspective and may be explain what things we need to be aware of." (P2).

Overall, pharmacists had positive attitudes toward providing healthcare services to TGD people and treated them professionally and with respect. Most pharmacists believed their duty of care was to provide non-judgmental and respectful care to everyone, regardless of gender. However, several

pharmacists found communicating with TGD people without offending them challenging. Some pharmacists were apprehensive about making assumptions about people's gender identities when their visual appearance did not match their prescription medication. Additionally, they were concerned about whether they could identify TGD people based on their physical appearance. A few pharmacists wanted to clarify whether the person, who may be TGD, knew the indication for the hormonal medicine. However, these pharmacists hesitated to address this issue to avoid appearing confrontational. Occasionally, when the names of TGD people did not match the names on their healthcare cards, pharmacists felt uncertain about initiating the conversation required for resolving the discrepancies.

Burden represented minimal effort required to participate in the provision of care for TGD individuals. Some pharmacists recognized that TGD people may have previously experienced stigma or marginalization in their lives and believed a considerable effort was required to establish trust in their relationships with TGD people.

Ethicality determined whether the delivery of care for TGD people was compatible with their cultural and religious values. Some pharmacists felt responsible for providing inclusive and safe spaces for TGD people. Pharmacists with Christian beliefs did not consider their religious beliefs a barrier to providing care to TGD people. For a pharmacist who grew up in a religious environment, their perspective of the world enabled them to create an open and safe environment for TGD people.

The anticipated or experienced opportunity costs involved the extent to which benefits, profits, or values needed to be given up providing care for TGD people. Some pharmacists indicated that pharmacy is a busy environment, so maintaining privacy and confidentiality of conversations with patients in the community pharmacy setting may be difficult. Many recognized that it was vital to provide all patients, including TGD people, with the opportunity to talk about their concerns privately, offering professional and respectful care in a pharmacy setting. Many pharmacists identified that community engagement was necessary to transform pharmacy practice, stating that real-life experiences of TGD people might empower them to approach TGD people more confidently. While using the expertise of TGD people about their lived experiences to educate healthcare professionals, the TGD people may incur an opportunity cost by disclosing their gender identity. Some pharmacists recommended practical experiences such as placements at pharmacies or clinics specialised in TGD care as an essential component of education about TGD health and culture.

Perceived effectiveness was coded when pharmacists were satisfied with their interaction with TGD people. For some pharmacists, creating a connection and ensuring TGD people received respectful and non-judgmental care was a high priority. A few pharmacists recognised that gender-affirming

care as lifesaving. While delivering professional services, by being empathetic, they built a trusted relationship with a TGD person. One pharmacist was happy when they played an active role in improving mental health outcomes for TGD people. Pharmacists were gratified when TGD people engaged in the conversations and asked for their opinions and advice, enabling them to continue to provide care.

Intervention coherence and self-efficacy appeared to be related. While providing care to this population group, pharmacists who demonstrated the use of appropriate language while communicating with TGD people were more confident. On the other hand, pharmacists who were awkward or unsure in their interactions with TGD people were less confident. Confusion about using preferred names and pronouns, not knowing whether their actions or words might offend, and lacking knowledge about gender-affirming therapies and resources for TGD people increased the complexity of providing care. Pharmacists deemed communication training necessary for improving their confidence to communicate with TGD people. Many pharmacists recommended that all pharmacy staff should receive communication training for the pharmacy to be seen as inclusive and welcoming to all TGD people.

Intervention coherence was coded when pharmacists demonstrated an understanding of gender-affirming language or knowledge of gender-affirming therapies. Pharmacists who had some exposure to TGD people in their practice or personal lives were more knowledgeable about gender-affirming language and displayed a better understanding of the gender-affirming journeys of TGD people. Although these pharmacists possessed linguistic skills, most wanted to improve their knowledge of gender-affirming therapies. Three pharmacists noted that the electronic medication records and dispensing software usually only offered binary categories (male or female) for entering gender and did not provide options to enter preferred names. One pharmacist described “making notes in the dispensing software” about preferred names and gender as a possible solution.

The self-efficacy construct explored the confidence level of pharmacists and the factors affecting their confidence in providing care for TGD people. Using pronouns and preferred names presented some challenges for pharmacists, fearing that they would use the wrong name or the wrong pronoun because they did not know the preferences of TGD people and did not possess the necessary skills or confidence to ask. Most pharmacists did not learn about TGD healthcare during their university degree or through CPD activities, and some felt less comfortable and less confident in their interactions with TGD people because of their perceived knowledge deficits.

Most pharmacists were unfamiliar with gender-affirmation guidelines and other resources to support TGD people. With the absence of information about gender-affirming medications in reference

sources, such as the Australian Medicines Handbook[37] and Therapeutic Guidelines, utilised in healthcare practice settings, many pharmacists did not know where and how to find more information about these medications. Therapeutic Guidelines have recently included a small section about TGD care with links to TGD healthcare resources.[38] Given the time constraints, some pharmacists suggested that in addition to CPD training, having accessible, useful TGD resources in the pharmacy would improve care delivery to TGD people.

5.5 Discussion

This study provides insight into the experiences and attitudes of pharmacists in Queensland, Australia, towards the provision of care to TGD people. Although pharmacists displayed positive attitudes about delivering care to TGD people, they identified significant barriers while providing such care. These key barriers included lack of inclusion of TGD care in usual pharmacy resources, absence of or minimal introduction to TGD care in pharmacy education, unfamiliarity with the language and TGD culture, and inability to record details about preferred names, pronouns, and gender identities along with the assigned sex at birth for TGD people in electronic medication records and dispensing software.

Pharmacists identified that deficiencies in their knowledge about TGD care may negatively affect the care they provide. This is consistent with findings from a few previous studies, which revealed that TGD healthcare remained a major knowledge gap for pharmacists, who are unaware of the specific healthcare needs of TGD individuals, lacking confidence and comfort in advising about gender-affirming hormonal therapy, and requiring education in TGD healthcare.[18-21,39] Additionally, pharmacists in our study indicated increased awareness about appropriate language through education about TGD cultural sensitivity and communication skills might improve their delivery of care to TGD people.

Providing person-centred and culturally competent care in pharmacies requires awareness of TGD culture.[3] It is important that pharmacists and staff receive education on cultural awareness to identify and avoid prejudices and presumptions regarding TGD people and challenge their own internal biases.[3,40] Such education should include concepts of gender and sex, gender identity, the use of non-gendered language, and asking for preferred names and personal pronouns.[3,40] Knowing gender-affirming language may assist pharmacists in communicating more effectively with TGD people and prevent pharmacists from misgendering and deadnaming these individuals.[23]

Although previous research has reported that people with religious affiliations or firm religious beliefs may be intolerant towards TGD people,[19,41] pharmacists in our study showed acceptance of TGD culture and people. Given that these pharmacists may have participated because of their open

attitudes, more extensive future studies may be necessary to determine religiosity and its effect on the care provision for TGD people. Societal attitudes towards TGD people may be influenced by the culture of the country.[42,43] Australia is a multicultural nation, and pharmacists may have more accepting attitudes towards TGD people because of their exposure to a variety of cultures. The community environment and the community itself may affect communication with TGD people. Pharmacists may be able to provide better treatment to TGD people by being exposed to a more accepting community that acknowledges cultural differences.

TGD stigma has been associated with limited access to healthcare and poorer health in TGD people compared to their cisgender counterparts.[44] In a previous study, a very small number of Australian programs were identified that targeted stigma reduction for LGBTIQ communities.[45] Findings from this study could contribute to the development of a program or campaign aimed at educating health professionals and the broader society, along with the development of national and international policies that may be necessary to change societal attitudes towards TGD communities. Professional organizations for health professionals should consider designing and implementing access to care and anti-discrimination policies. These strategies may assist in reducing stigma and discrimination against TGD people and support social inclusion and recovery.[45]

Sharing the experiences of TGD people with healthcare professionals to increase awareness of TGD culture may enhance the healthcare experiences of the broader TGD population. It is becoming increasingly evident that patient involvement is a critical component of the education of healthcare professionals, as many health professional educators advocate for increasing patient involvement in their teaching.[46-49] The active participation of actual patients in health professional training (patient-led education) enables patients to share their experiences of receiving healthcare.[47] Therefore, the inclusion of the voices of TGD people in designing educational interventions and participating in educational activities would respect the pharmacist/TGD patient partnership in promoting equity in healthcare for TGD people and enable them to share their expertise.[50] Practical experience working with TGD people during training may also be a valuable addition to the theoretical foundations of healthcare professional education. As suggested by our data, collaboration with TGD community members would provide insight into their health problems and obstacles experienced and enable understanding of the components of respectful and culturally sensitive care.

Findings from this study suggest that experiential placements for undergraduate pharmacy students at the multidisciplinary clinic for TGD people or pharmacies that specialise in this area may provide a better understanding of pharmacists' roles in TGD care and enhance the confidence of future pharmacists in delivering pharmaceutical services to TGD people.[51] A recent study indicated that

interdisciplinary education (IPE) in TGD care was beneficial for participating graduate healthcare professionals to improve their skills and knowledge to provide care for TGD people.[52] In this learning session, graduate healthcare learners were provided with a structured opportunity to develop expertise in the four core interprofessional practice competencies: values and ethics, roles and responsibilities, interprofessional communication, and teamwork. Team members were exposed to the diverse roles and responsibilities of their colleagues, practising communication skills and teamwork through team huddles and discharge planning meetings.[52] Given the importance of providing holistic team-based care to TGD people, such IPE activities, including pharmacists and pharmacy students, should be planned. Although scheduling placements for pharmacy students at pharmacies or clinics with a specialized interest in TGD care may improve their understanding, finding such opportunities for every pharmacy student may be challenging. A recent study of Australian pharmacists showed a demand for education about the healthcare of lesbian, gay, bisexual, transgender, and intersex (LGBTI) people.[18] Future research is necessary to determine the impact of such educational interventions on pharmacy practice.

Active participation in patient care has been associated with improving pharmacists' job satisfaction.[53] More specifically, pharmacists in this study were gratified when they engaged in meaningful interactions with TGD people. However, the lack of effective communication between TGD people and pharmacists is likely to lead TGD people to distrust pharmacists and community pharmacies, likely affecting care-seeking behaviours. Some TGD people have preferred minimum or no interaction with pharmacists and staff.[18] Such avoidance behaviours may serve as coping mechanisms to circumvent unpleasant interactions.[5]

While other health professions have raised this issue, this is the first study of pharmacists that identified technical barriers posed by electronic medication records and dispensing software. These barriers can be addressed by updating software to include additional fields such as preferred names, pronouns, assigned sex at birth (male, female, intersex), and gender (male, female, transgender, non-binary, and other with a free-text option). This change may assist in recording accurate information about TGD people visiting pharmacies and other healthcare settings, avoiding misgendering and improving the quality use of medications. For example, accurate information about assigned sex at birth and gender identity may assist in calculating appropriate doses for renally cleared medications for a TGD individual taking gender-affirming hormonal therapy.

5.6 Limitations

Only Australian participants, primarily from Queensland, provided the data for the study, so the findings may not apply to other settings. The generalisability of these findings may be impacted by

variations in cultural and societal perspectives towards TGD individuals and differences in pharmacy settings in various countries. Although two participants openly disclosed belonging to the LGBTIQ community, our study lacked the participation of TGD pharmacists. The involvement of TGD pharmacists could have provided more insight into TGD care as providers and receivers of such care from pharmacies.

5.7 Conclusion

Although pharmacists have a significant role in addressing disparities in TGD health, they may inadvertently contribute to these disparities because of insufficient TGD culture-related knowledge. Pharmacists in our study displayed positive attitudes toward providing care for TGD people. As recognised by these pharmacists, the transformation of pharmacy practice is crucial for delivering equitable and respectful care for TGD people. Developing trust with TGD people was challenging, indicating a lack of understanding of TGD health and gender-affirming language and terminology. When pharmacists meaningfully engage with TGD people, meaningful interactions result. Implementing educational strategies for pharmacy students, pharmacy staff, and pharmacists will stimulate more innovative approaches to providing gender affirming care in pharmacy practice.

There is a need to consider incorporating training on TGD care into the pharmacy curriculum and continuing pharmacy education activities. This will provide better educational opportunities for pharmacists, who will then be less likely to discriminate against TGD patients and more likely to deliver gender-affirming care for TGD patients, including preventative healthcare measures that are easily accessible through pharmacies. By providing respectful, gender-affirming, safe, and compassionate TGD care, pharmacists can enhance the health of their community, contribute to the well-being of individuals and help to foster a more inclusive environment at the pharmacy.

5.8 Conflict of interest

The authors declare no conflict of interest.

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Chapter 6: National Pharmacist Survey

Having explored the issues related to pharmaceutical care from the perspectives of both the TGD people and pharmacists through interviews, I was interested in a wider perspective of pharmacists across Australia. Although the interview data highlighted the need for additional education in TGD care for pharmacists and pharmacy students, I wanted to explore if this need was perceived by pharmacists practising Australia-wide. A national survey became essential for ensuring that the educational intervention to be offered at the later stage of the research would align with the needs of a larger and potentially more diverse population of pharmacists. The findings from this national survey have been published in an article in the International Journal of Pharmacy Practice, as presented in this chapter. This article has been formatted to match the spelling conventions of Australian English.

Title: **Do the attitudes and practices of Australian pharmacists reflect a need for education and training to provide care for people who are transgender?**

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Do the attitudes and practices of Australian pharmacists reflect a need for education and training to provide care for people who are transgender?

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6.1 Abstract

Background: Many transgender and gender diverse (TGD) people access care through community pharmacy in Australia. However, there is limited information available about the role of Australian pharmacists in providing care for TGD people.

Objective: To explore the attitudes, practices, and training needs of pharmacists in the provision of care for TGD people in Australia.

Method: Pharmacists Australia-wide were invited to participate in an online survey through Facebook, e-newsletters of pharmacy organisations and via a professional pharmacy journal. Quantitative data were analysed for descriptive and inferential statistics. A Fisher exact test was used to investigate associations between two variables. Results with p-value <0.05 were considered statistically significant. Content analysis was used to analyse data from free-text responses.

Result: Of the 169 respondents, the majority were female (75.1%), aged below 40 years (74%) and with less than ten years of working experience as a pharmacist (58%). Although 95% of the sample agreed that they had an important role in the provision of care for TGD people, only 29.6% were confident about their knowledge of pharmacotherapeutic treatments for gender affirmation. Only 2.4 % had received education about TGD care at university, and only 5.3% received any TGD healthcare training over the past five years.

Conclusion: Although pharmacists had a positive attitude and recognised their role in TGD care, they expressed a lack of confidence in their knowledge to be a barrier to providing quality care. Most

recommended the need for more education about TGD healthcare in pharmacy curricula and continuous professional education activities.

Keywords: Pharmacy; Healthcare; Non-binary; Professional education; Gender diverse; LGBTQIA+.

6.2 Introduction

Transgender and gender diverse (TGD) people are people whose gender identity is different from their assigned sex at birth.[1] Competent healthcare provision to TGD people requires careful consideration of the cultural expectations and unique healthcare needs of this population.[2] Many TGD people access pharmacies for various reasons, including obtaining prescription and non-prescription medications and other services.[3]

TGD people and pharmacists believe that pharmacists play an important role in TGD healthcare by providing pharmaceutical services such as dispensing prescription and non-prescription medications, counselling about hormonal therapies, performing medication reviews and identifying adverse drug reactions.[4,5] Pharmacies also provide services such as blood pressure checks, blood sugar checks, smoking cessation, lifestyle advice, needle syringe program, and vaccinations that are potentially beneficial for improving the healthcare outcomes of TGD people.[3] However, previous studies have reported that TGD people received pharmaceutical care that lacked cultural competence.[5,6] Additionally, some TGD people stated that inadequate understanding of pharmacists about TGD healthcare issues potentially impacted the quality of care that they received.[5]

Many TGD people have experienced negative healthcare encounters, including stigmatisation, marginalisation, deadnaming and misgendering.[7] Deadnaming is an act of calling someone by the name they no longer use and misgendering is using non-gender-affirming language, for example, referring to a person with the wrong pronouns.[8] Such experiences in a pharmacy setting have deterred these people from accessing further care from that pharmacy.[5,6] Some TGD people preferred minimal interactions with pharmacists and staff[5] or procured their hormonal medications from unverified online resources[6] to avoid perceived discomfort in these interactions. Previous studies have reported that pharmacists lacked comfort and confidence in their knowledge of gender-affirming therapies and communication skills to provide culturally respectful care to TGD people.[4,9,10] Although pharmacists are well-positioned to provide healthcare services to TGD people, they require more education in TGD healthcare to provide appropriate care.[4,9,10]

While only a few studies have evaluated the attitudes and practices of pharmacists in providing care to TGD people[4,9-11], no study has investigated the attitudes, practices, and training needs of Australian pharmacists at a national level. A previous qualitative study of pharmacists conducted in Queensland, Australia, found that pharmacists required additional training in TGD healthcare to enhance their communication abilities and clinical expertise in TGD health to provide adequate care to TGD people.[10] Therefore, this study aims to explore Australian pharmacists' attitudes, practices and training needs for the provision of care to TGD people.

6.3 Method

Participants and recruitment

Convenience sampling was used to recruit the participants. All pharmacists in Australia currently registered for general practice with the Australian Health Practitioner Regulation Agency were eligible to participate.

This cross-sectional survey study was advertised on Facebook pages of the Pharmaceutical Society of Australia's Early Career Pharmacists Group, Consultant Pharmacists Australia Group, James Cook University (JCU) Pharmacy Alumni and JCU Pharmacy Students group. The Pharmaceutical Society of Australia (PSA) and the Pharmaceutical Guild of Australia (PGA) were requested to distribute the survey link to their members through e-newsletters. The survey link and QR code were included in an article published in the Australian Journal of Pharmacy, a professional pharmacy journal in Australia encouraging participation.[12]

Data collection

Based on the previous qualitative studies of pharmacists[5] and TGD people[10] and the Theoretical Framework of Acceptability (TFA)[13], an online survey instrument was designed using the Qualtrics platform.[14] The survey included three sections with a total of 30 questions - open and closed-ended questions with yes/no, multiple-choice or Likert scale responses. These questions assessed the attitudes and practices, and training needs of pharmacists in providing TGD healthcare. The TFA constructs of affective attitude, burden, opportunity cost and ethicality were reflected in the survey questions about attitudes and barriers to providing care to TGD people in pharmacy.[13] The questions evaluating the practices of pharmacists in providing TGD care were based on the TFA constructs of intervention coherence, opportunity cost, perceived effectiveness and self-efficacy.[13] This survey was piloted by two community pharmacists and three pharmacist academic staff of JCU for reliability and face and content validity. Addition of a free-text response to collect comments about asking pronouns of TGD people in pharmacy was recommended by two pharmacists and therefore the survey was revised accordingly (Appendix Q, Question 7).

The survey was designed to take approximately 15 minutes to complete. Using a separate link to protect the anonymity of respondents, all participants were asked to indicate their willingness to participate in TGD healthcare training to be provided at a later stage. The survey remained open from July 2021 to May 2022, during which time the survey link and QR code were promoted through a journal article and various e-newsletters. The Internet Protocol (IP) address of the user's computer was recorded to prevent multiple participation of participants.

Data Analysis

Data were uploaded to SPSS software to enable the generation of descriptive and inferential statistics. Due to small sample sizes, a Fisher exact test was used to investigate associations between two categorical variables, such as the education level of the participants and their confidence in providing TGD care. The results were considered statistically significant if the p-value was less than 0.05. Data from free-text questions were analysed by applying content analysis.

Ethics

This study was approved by the Human Research Ethics Committee of JCU (Approval no. H8265). When participants confirmed their informed consent to participate, the Qualtrics system gave them access to the survey.

6.4 Results

A total of 209 pharmacists responded to the survey; however, only 169 surveys were complete and included. Participant characteristics are presented in Table 6-1. Most participants were female (75.1%), aged below 40 years (74%) and with less than ten years of working experience as a pharmacist (58%). This demographic presentation is higher than that of pharmacists within these categories in the snapshot of the pharmacy workforce in Australia.[15] More than 17% of participants identified as belonging to LGBTIQA+ communities. Although exact statistic in Australia is unavailable, it is estimated that about 11% of the Australian population identifies as LGBTQIA+.[16,17]

Table 6-1: Participant characteristics.

Participant characteristics	**Frequency (%)**
Gender	
Male	36 (21.3)
Female	127 (75.1)
Other (Non-binary, bigender)	3 (1.8)
Prefer not to say	3 (1.8)
Member of LGBTQIA+ communities	
Yes	29 (17.1)
No	136 (80.5)
Prefer not to say	4 (2.4)
Age (years)	
21-30	65 (38.5)
31-40	60 (35.5)
41-50	25 (14.8)
51-65	16 (9.5)
65 and above	3 (1.8)
Years of experience working as a pharmacist	
0-5	59 (34.9)

6-10	39 (23.1)
11-15	23 (13.6)
15-20	17 (10.1)
More than 20	31 (18.3)
Accredited/credentialled pharmacist	
Yes	59 (34.9)
No	110 (65.1)
Post-graduate qualification	
Yes	52 (30.8)
No	117 (69.2)
Geographical location	
ACT	7 (4.1)
New South Wales	45 (26.6)
Northern Territory	1 (0.6)
Queensland	63 (37.3)
South Australia	13 (7.7)
Tasmania	4 (2.4)
Victoria	23 (13.6)
Western Australia	13 (7.7)
Currently providing healthcare services to TGD people	
Yes	128 (74)
No	44 (26)
Work setting	
Community pharmacy	122 (72.2)
Hospital Pharmacy	20 (11.8)
Other	27 (16)

Data associated with the constructs of the TFA is reported below.

Affective attitude, Ethicality, Intervention coherence and Self-efficacy

Overall, pharmacists displayed positive attitudes towards providing care to TGD people, suggesting high acceptability of such care delivery in pharmacy (Construct: Affective attitude, Ethicality). Although almost two-thirds of pharmacists were comfortable providing healthcare services to TGD people, only 41% were confident about providing such care (Figure 6-1), indicating the 'self-efficacy' in providing such care was low. While more than 70% of pharmacists reported asking for the preferred names of TGD people, only about two-fifths frequently asked for personal pronouns (Construct: Intervention coherence). A free-text response about the use of pronouns generated 42 comments, and the themes derived from these responses are listed in Table 6-2.

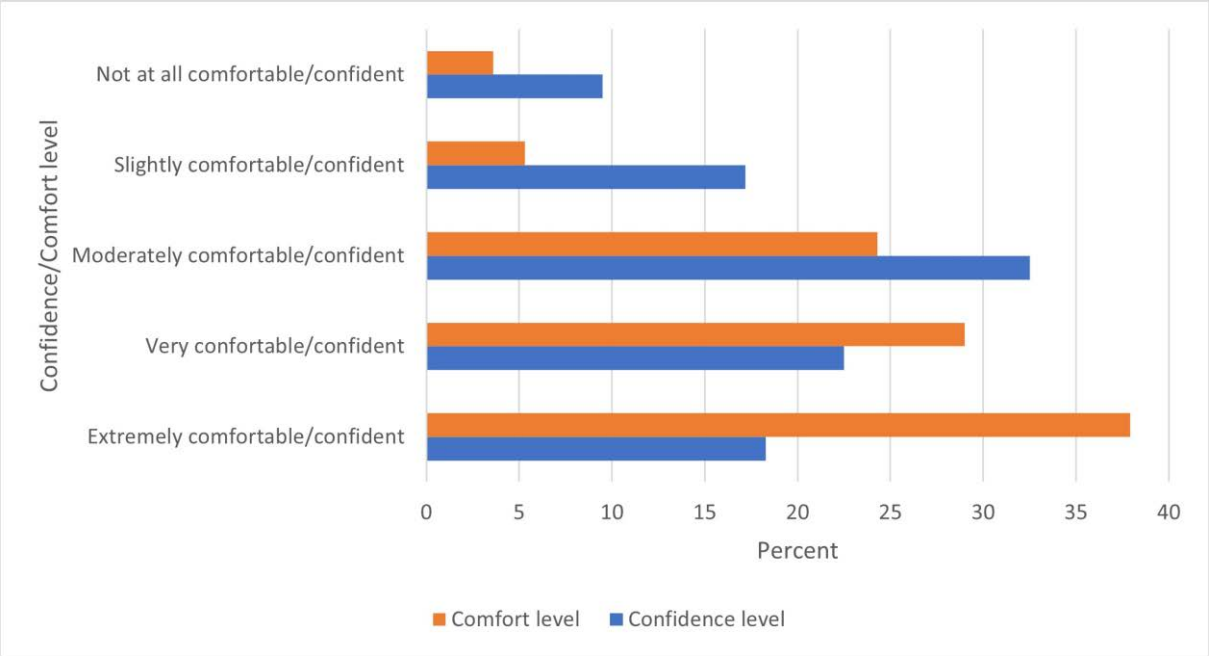

Figure 6-1: Confidence and comfort level of pharmacists in providing care to TGD people.

Table 6-2: Use of pronouns- Themes and illustrative quotes.

Theme	**Frequency**	**Quote**
Awkwardness	6	*I just don't know when is a good time to ask it and how is the best way to address it.*
Challenging for staff	2	*It is hard for my older staff members to adapt and respect the change.*
Comfortable in asking because of open attitude or exposure to TGD people professionally or personally	6	*I identify as gay and am completely aware of and comfortable making transgender customers at ease with their preferred names and pronouns.*
Confusion	5	*Unsure about when to refer to he/she in a stage of their treatment.*
Electronic prescription record challenges	2	*The hospital system can be difficult to update.*
Ignorance	3	*They were born male; I call them by their male name. They were born female; I call them by their female name. It's simple.*
Medicare issues	5	*Medicare often needs you to use the name registered with Medicare to claim correctly. It's a bit humiliating for them to have to check why their script has been rejected for name mismatches.*
Use non-gendered pronouns to circumvent asking for pronouns	5	*I avoid the use of gendered pronouns wherever possible.*

About 95% of pharmacists agreed that they had an important role in providing care to TGD people (Figure 6-2) (Construct: Affective attitude). More than 80% of pharmacists reported that they could provide culturally sensitive care to TGD people, and almost three-quarters agreed that they counselled TGD people with the same level of comfort as they counselled cisgender people about hormonal medications (Construct: Intervention coherence). However, only one-third of pharmacists were confident about their knowledge of pharmacotherapeutic treatments for gender affirmation (Construct: Self-efficacy).

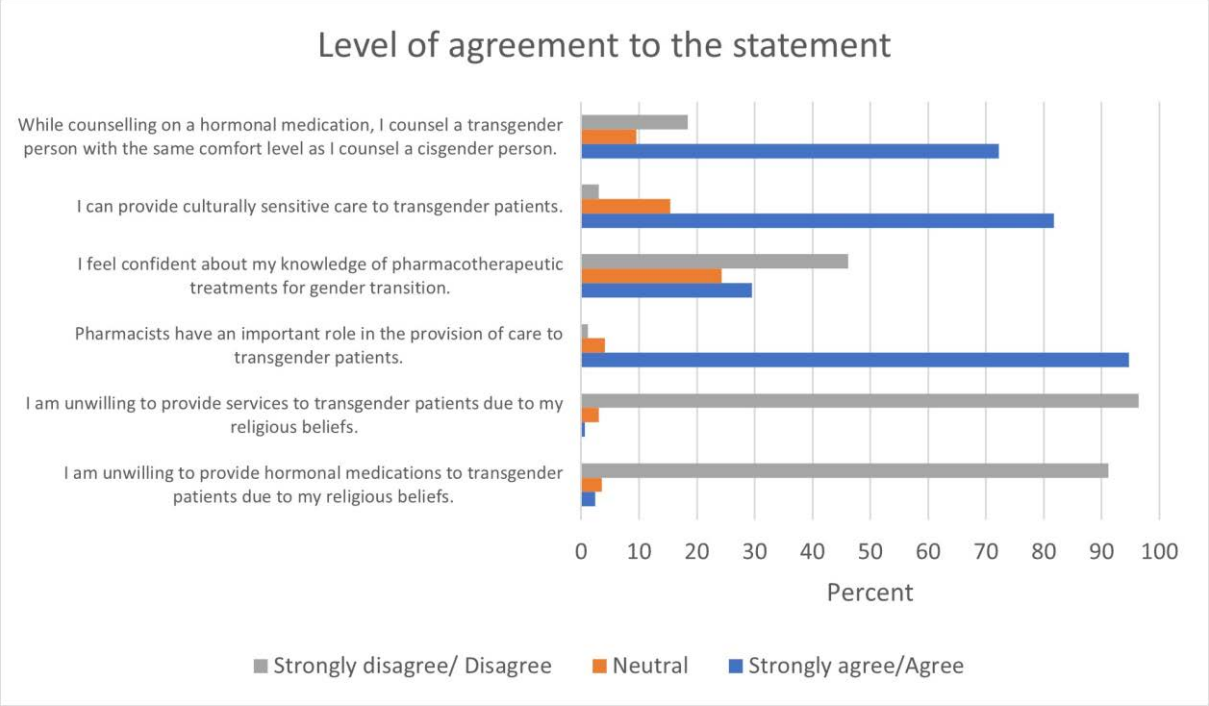

Figure 6-2: Level of agreement with statements regarding attitudes and confidence to provide TGD care.

Burden and Opportunity Cost

Burden implies the minimum amount of effort required to provide care to TGD people, while opportunity cost indicates the beliefs, values or profits required to be given up providing such care. Both constructs identified the barriers to the provision of care to TGD people. The most common barriers to the provision of care to TGD people in pharmacy were a lack of TGD healthcare training resources (89.9%) and no or inadequate staff training in TGD healthcare (82.8%) (Figure 6-3). More than half of the pharmacists agreed that stigma towards TGD people, lack of privacy of patient consultation and time constraints posed challenges to providing care to TGD people. Only a quarter of pharmacists perceived the reluctance of staff to treat or engage with TGD people and the inability to establish a trusted relationship with TGD people in the pharmacy as barriers to providing care.

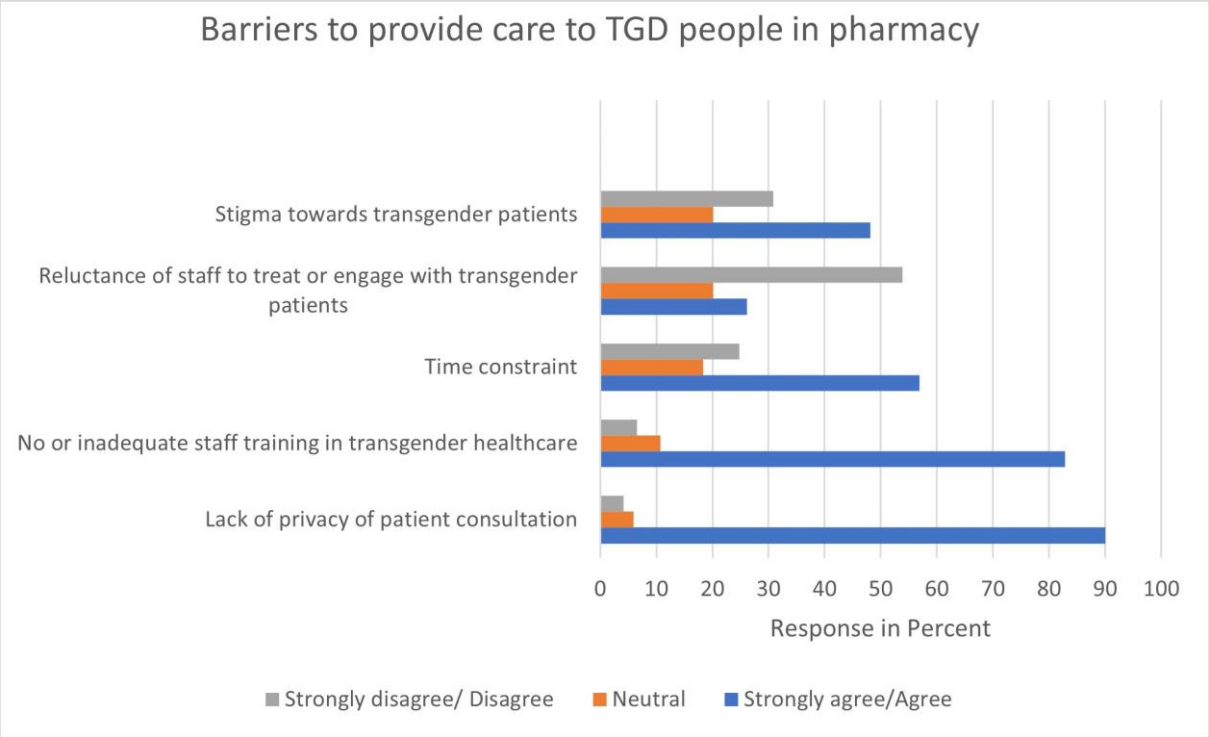

Figure 6-3: Barriers to the provision of care to TGD people in pharmacy.

Perceived effectiveness

The construct of perceived effectiveness was applied to understand pharmacists' education needs in TGD healthcare to provide adequate and appropriate care to TGD people. Only 2.4% of the pharmacists had received education about TGD care during their university degree, and only 5.3% had received any TGD healthcare training over the past five years. A small percentage of pharmacists reported being aware of TGD healthcare resources (15.4%), local TGD support groups (18.9%) and services (18.9%). About 95% of pharmacists agreed that pharmacists require more training in TGD healthcare, and many believed that such education should be included in the pre-registration pharmacy curriculum (89.3%) and continuing professional education (CPE) (94.1%). While less than 10% of pharmacists agreed that their pharmacy staff were adequately trained to provide culturally sensitive services to TGD people, approximately four-fifths agreed that their staff required training (Figure 6-4). Three-quarters of pharmacists expressed their interest in participating in a training module about TGD healthcare that may be provided at a later stage.

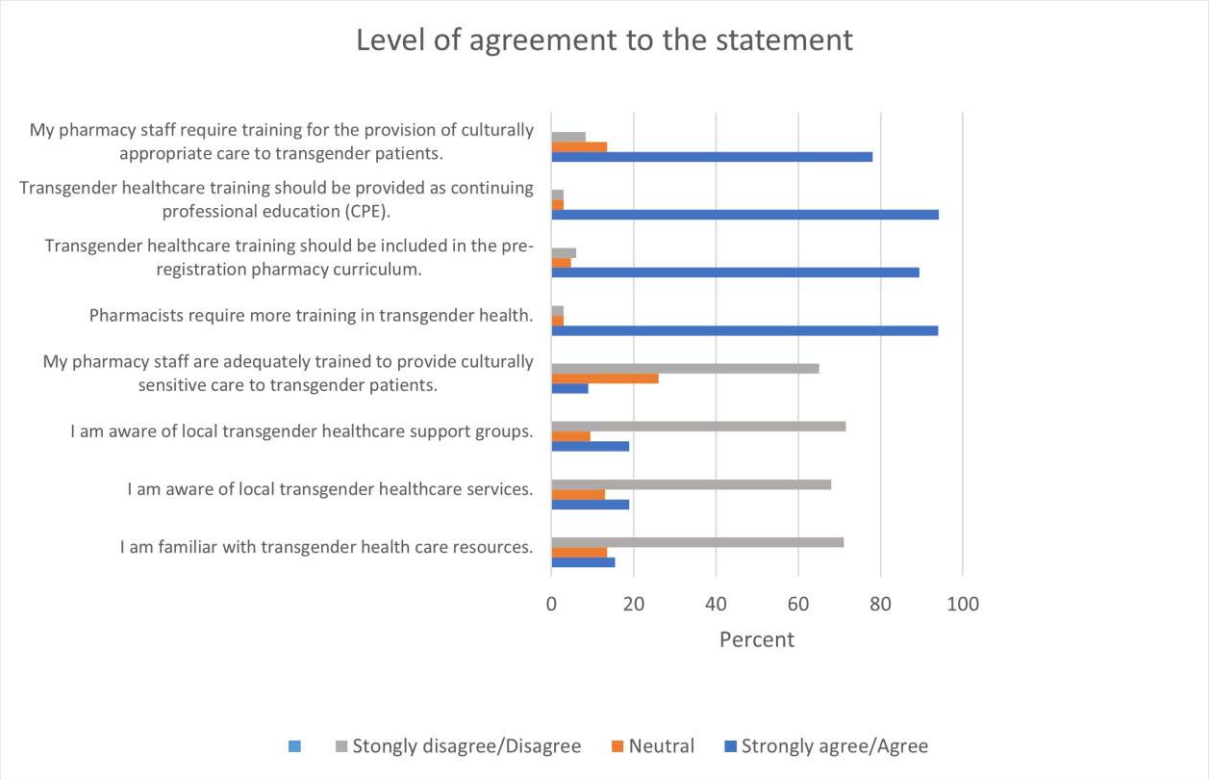

Figure 6-4: Level of the agreement to statements regarding awareness and training about TGD care.

There was a significant association between the comfort level in providing healthcare to TGD people and familiarity with TGD health resources (p= 0.001), awareness about local TGD support groups (p= 0.015), being an accredited pharmacist (p= 0.017), and belonging to the LGBTQIA+ community (p= 0.013). Pharmacists familiar with TGD health resources and support groups and those who were accredited pharmacists or belonged to the LGBTQIA+ community were more comfortable providing care to TGD people. Additionally, there was a significant association between the confidence level in providing healthcare to TGD people and gender (p= 0.046), years of experience (p= 0.016), familiarity with TGD health resources (p<0.001), awareness about local TGD support groups (p<0.001) and awareness about local TGD health services (p<0.001). Interestingly, a higher proportion of males (61.1%) indicated they were extremely/very confident in providing care to TGD people, compared to females (36.2%).

6.5 Discussion

Although this study found that most pharmacists were providing care to TGD people in their practice settings, many lacked knowledge of TGD care and were unaware of the resources to provide appropriate care to TGD people, consistent with findings from an international study.[4] While for pharmacists in this sample, comfort and confidence levels in providing care to TGD people were higher

than those reported for pharmacists in previous international studies[4,9], their request was for more education about TGD healthcare for pharmacists, pharmacy students and staff.

Strengths and Limitations

There is no other study to date to quantitatively survey Australian pharmacists about their attitudes, knowledge and training needs in TGD healthcare. The constructs of the TFA were valuable in determining the acceptability factors that may have affected pharmacists' provision of TGD care.

There are several limitations to this study. Although the survey link was live for 11 months, the survey response was low. The possible reason may be that this survey was conducted during the COVID-19 pandemic, and many pharmacists were very busy during this period because of more duties, such as the rollout of COVID-19 vaccinations through community pharmacies in Australia. Since this is an exploratory study, the limited sample size may affect the generalisability of results. The participants were significantly younger and more likely to identify as female. The proportion of pharmacists identifying as LGBTQIA+ was substantially greater than the size of the general LGBTQIA+ population. The study sample may not be representative of the whole pharmacist workforce registered for general practice and, therefore may affect the generalisability of the results. Higher acceptance of gender and sexual diversity by the younger pharmacist population may be a possible factor in participating in the study. Participants with greater interest in providing care to TGD people may have responded to the survey compared to the general pharmacist population. This could have potentially introduced bias into the results. Additionally, in Australia, pharmacies can be only owned by pharmacists. Many older pharmacists serve as pharmacy proprietors, and they may not be directly involved in routine pharmacy care provision to clients. This may be a reason for the low participation of pharmacists from the older age group. Furthermore, pharmacists who do not use social media, do not subscribe to professional journals and newsletters of the PSA and the PGA or have limited internet access or literacy may not have participated in this survey.

Comparison with published literature

Similar to previous Australian studies[5,9,18,19], lack of privacy in community pharmacies was highlighted as an important barrier to providing care in pharmacy. Lack of privacy of consultation may cause accidental outing of the gender or sexual identities of people to other clients and staff present at the pharmacy.[5,9] Utilisation of private spaces for consultation should be prioritised to protect the privacy and confidentiality of people visiting pharmacies. Time constraints of pharmacists pose challenges in utilising the private spaces for consultation.[20] In such situations, strategies such as lowering voice,

asking clients to return to the pharmacy during quieter times and offering telephone or online consultation may assist in protecting their privacy and confidentiality.[18]

Although pharmacists reported that they could provide culturally sensitive care to TGD people, this was not evidenced to the same extent in their asking for preferred names and personal pronouns of TGD people. Notably, more pharmacists asked for training to improve their knowledge about gender-affirming therapy than for gender terminology. A previous study indicated that most pharmacists could not define the term "transgender", suggesting a lack of awareness about the gender terminology.[4] Familiarity with gender terminology, asking for preferred names and personal pronouns and using them in any communication with the patient, staff, or other healthcare professionals are the components of providing culturally sensitive care to TGD people.[2] It should be considered that there is a difference between confidence and competence in providing care.[21] Many TGD people have reported being deadnamed and misgendered in healthcare settings, including pharmacies[5], and such experiences have impacted their mental health negatively.[22] Another recommendation is to update the electronic prescription records to include pronouns, biological sex and affirmed gender identity. The provision of these fields will improve medication safety and avoid deadnaming or misgendering TGD people. The comfort of providing care to TGD people was linked to greater coherence of the components of the care delivery to TGD people. Familiarity with TGD health resources and awareness about local TGD support groups might have enhanced the understanding of the pharmacists about the TGD culture and their healthcare needs. Such awareness might have improved their self-efficacy in providing care to TGD people.

As in previous international studies[4,9], most pharmacists in this study perceived that they played an important role in TGD care. Two studies reported that about a quarter of pharmacists received formal education in TGD care at universities and through CPE activities.[9,11] However, in this study, significantly less participants report receiving such education in comparison to data coming from the USA.[9,11] Most perceived barriers to providing TGD care in Australian pharmacies included a lack of educational resources and training in TGD care. These barriers may have affected the intervention coherence and self-efficacy of the pharmacists, possibly leading to less effective care provision to TGD people. Therefore, designing and including education about TGD healthcare in CPE activities and university pharmacy curricula is essential to promote pharmacists' clinical and cultural competence. Most pharmacists advocated for additional training for their pharmacy staff. A previous study stated that pharmacists recommended more training for staff to improve staff attitudes and inclusivity of TGD people in pharmacy.[10] Future studies evaluating the impact of such training on awareness about gender-affirming care in pharmacies may be necessary.

This is also the first study to assess preferred topics and modes of CPE delivery for TGD healthcare for pharmacists. Given the time constraints, pharmacists preferred online modules for CPE. Along with the topics that would improve their clinical knowledge of gender-affirming therapies, most pharmacists favoured the inclusion of the voices of TGD people and experts in TGD healthcare in such training. A panel discussion with TGD people has been found to improve the awareness and knowledge of pharmacy students about TGD healthcare.[23] Online modules that include TGD people's experiences may allow TGD people to be actively involved in educating pharmacists and respect their partnership in improving the healthcare of the broader community. The high interest exhibited by the pharmacists in the training module that might be offered at the later stage of the research indicates demand for TGD healthcare educational activities. The findings from this study provide a foundation for designing the education intervention in TGD healthcare for Australian pharmacists. Further research to assess the impact of the educational intervention on pharmacists' confidence, knowledge, and skills in providing care to TGD people is essential. There is also a need for research about the effect of such training on the overall health outcomes of TGD people visiting pharmacies.

6.6 Conclusion

This is the first study to explore the attitudes, practices, and training needs of Australian pharmacists about the provision of TGD care. Although most pharmacists felt comfortable and confident in providing care to TGD people in Australian pharmacies, many recognised significant barriers to such care provision. The main barriers included a lack of resources and education in TGD healthcare, stigma towards TGD people, lack of privacy of patient consultation and time constraints. Only a few pharmacists received education about TGD care in their university degrees and through CPE activities. Pharmacists recommended more education about TGD healthcare, preferably through online modules. Such education is necessary for pharmacists to improve their knowledge about gender-affirming therapies and cultural competence in the provision of TGD healthcare and has the potential to impact the healthcare outcomes of the TGD people visiting pharmacies and the broader community.

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Chapter 7: Designing the Training Program using Implementation Mapping Framework

To complete the mixed methods stage of the research, the integration of data generated from interviews with pharmacists and transgender (TGD) people and the national survey of pharmacists from Stage One was necessary to identify the pertinent issues to be included in training programs to improve the delivery of care to TGD people. Table 7-1 shows integration across the Stage One data set and the interpretation and synthesis within the Theoretical Framework of Acceptability (TFA) construct leading to topics to be included in the targeted training program.

Table 7-1: Stage One Data integration

TFA Construct	Subthemes	Qualitative study 1	Qualitative study 2	Quantitative study	Interpretation and synthesis
Burden	Stigma Difficulty establishing trust	"I guess for the trust side, I would expect to be able to tell someone something in confidence. But I think building that relationship makes an enormous difference anyway. I guess, for me if there's a certain amount of trust, I can assume but at the same time it's easy to burn out trust" (T21, Transwoman)	"It was trying to for them [the TGD person] to get the confidence that we weren't judging, and we just wanted to help them on their journey as best as possible, so it was probably my assumption here and everywhere is that there is a lot of stigmatisms. That person to be comfortable enough to be forthcoming with the information so we could do the best what we can was the most challenging." P1	48.1% of the pharmacists agreed that the stigma associated with TGD people was an important barrier in the provision of care to TGD people in pharmacy. Only 24.8% of pharmacists perceived the inability to form a trusted relationship with TGD people in pharmacy as a barrier to care provision.	Stigma experienced by TGD people constitutes one of the barriers to providing care to TGD people in pharmacy. Pharmacists and staff need to be aware that TGD people may have experienced stigma in previous pharmaceutical interactions, and these experiences may affect efforts to build a trusted relationship with the pharmacist and staff.
Ethicality	Religiosity	No data	"I'm quite well known in our community to have Christian faith. So that person [a TGD person known to the pharmacist through his	Only 2.4% of the pharmacists agreed that they were unable to provide hormonal medications to TGD people due to their	Religious beliefs of pharmacists did not seem to be a major factor affecting the TGD care provision in pharmacy. Pharmacists

TFA Construct	Subthemes	Qualitative study 1	Qualitative study 2	Quantitative study	Interpretation and synthesis
			involvement with the Church] might see that as a stumbling block to trusting me as a healthcare professional, but the patient has trust in me and feels comfortable seeking out our assistance." (P20)	religious beliefs, and only 0.6% of pharmacists agreed that they were unable to provide any pharmaceutical services to TGD people due to their religious beliefs.	need to be conscious of any personal value-based bias that may affect their practice.
Intervention coherence	Gender-affirming language	"Even though it actually has on the script- my preferred name, they would still call out my old name and – so that's certainly something that pharmacy didn't seem to be much aware of." T1, Transwoman	"For most people in health care, it's not, so they don't have an awareness of what's appropriate and what's not appropriate and what's the preferred name, and preferred name is different for everyone. Some people want to be called by their pronouns and some people are happy to just be referred in a general way if you're not sure. Other people don't mind, you know, getting misgendered	While more than 70% of pharmacists reported asking for the preferred names of TGD people, only about 42.4% frequently asked for personal pronouns. More than 80% of pharmacists reported that they could provide culturally sensitive care to TGD people, and almost three-quarters agreed that they counselled TGD people with the same level of comfort as they counselled cisgender	Gender-affirming language is vital to improving care provision for TGD people in pharmacy. Expanding pharmacists' awareness and skills for using gender-affirming language may reduce incidences of deadnaming and misgendering of TGD people in pharmacy and improve the competence of pharmacists and staff in providing culturally sensitive care to TGD people.

TFA Construct	Subthemes	Qualitative study 1	Qualitative study 2	Quantitative study	Interpretation and synthesis
			and it's such a broad thing out there. But there really needs to be more training and awareness for people in health care on how to have conversations and not to feel so awkward." P15	people about hormonal medications.	
Opportunity cost	Privacy and confidentiality	"The first time that I accessed hormones, there was a whole list of questions. It started when my name was called out and my dead name was used. I was misgendered. This was very loud. Many other customers could hear this. It was very difficult." T2, Transwoman	"It is such a small store, it is difficult if there is more than one patient in the store in terms of privacy issues and having a discussion with them in a private setting, particularly because of how the store is set up is there's the dispensary and there's a bench where the first computers are, and then there's another bench in front of that with the register. But there is access to the back	51.5% of the pharmacists agreed that the lack of privacy of patient consultation posed challenges to providing care to TGD people.	Most pharmacies are very busy places, and often, maintaining the privacy and confidentiality of conversations with patients in a pharmacy is challenging. Learning ways to maintain privacy and confidentiality during conversations in the pharmacy is vital to prevent outing of TGD people to other people and pharmacy staff present at the pharmacy.

TFA Construct	Subthemes	Qualitative study 1	Qualitative study 2	Quantitative study	Interpretation and synthesis
			dispense computers, sort of a round little alcove where the people can come but it's still quite close to the register, to have those sorts of discussions. So, you can move to one side but it's a bit tricky to have discreet discussions, particularly if you're trying to maintain social distancing." P19		
Self-efficacy	Confidence Knowledge deficits	"[About gender-affirmation therapies] they [pharmacists] usually know as- on par with the doctors, which doctors don't know much either." T1, Transwoman	"I don't feel confident - or the medications are usually non-PBS. They're usually prescribed for something other than what's on the therapeutic guidelines or what is an indication in the AMH, which is generally where I get my counselling points from. So, I sort of go down a little bit blind. I do the best I can but	Only 29.6% of pharmacists were confident about their knowledge of pharmacotherapeutic treatments for gender affirmation.	The lack of pharmacotherapy knowledge for TGD care affects pharmacists' practice. Gaining further knowledge regarding pharmacotherapeutic treatments for gender affirmation may enhance pharmacists' confidence in providing care to TGD people.

TFA Construct	Subthemes	Qualitative study 1	Qualitative study 2	Quantitative study	Interpretation and synthesis
			I'm usually more making sure that the doctor has been very clear to the patient and that they're confident and comfortable with what they're taking and how to take it." P8		
Affective attitude	Apprehension Provision of non-judgemental care	"I think for a lot of trans folks, particularly, there that early part where you are getting your first scripts and stuff like that, that there's a lot of anxiety involved in that." (T1, Transwoman) "Well, their [pharmacists and staff] interaction hasn't been any different to me from when I used to present as male. They probably recognise me and probably noticed my gradual transition but, they just treated	"I think the greatest challenge I think for anyone in health care, the pharmacist and the pharmacy assistants, is how do we approach these transgender people, what happens if I make a mistake with identifying gender, or name, and things like that." P20 "I wouldn't think of that person [TGD person] any differently. I think that, as pharmacists, we need to support decisions that people make in	A free-text response about the use of pronouns generated comments about fearing to approach TGD people due to a lack of knowledge of how to ask for names or pronouns. For example, "Often confusing and inadvertently taken as an offence when it is a mistake."	Understanding ways to provide non-judgmental care is an essential component of TGD healthcare delivery in pharmacy.

TFA Construct	Subthemes	Qualitative study 1	Qualitative study 2	Quantitative study	Interpretation and synthesis
		me before transition the same as after transition." (T9, Transwoman)	health care and continue to provide services like we would to anybody else." P11		
Perceived effectiveness	TGD health training required	"It's [the interaction with the pharmacist] just a pretty transactional, here's my script, fill it. Yeah, I guess, like I said, someone that had a bit of knowledge about trans people probably could be helpful sometimes. It's pretty clear to me that nobody works there have any clue." T12, Transwoman.	"I don't think we really cover transgender health care at all at uni [university] and in CPD for pharmacists but I think there should be training modules for the front shop girls as well." P15	About 95% of pharmacists agreed that pharmacists require more training in TGD healthcare services to TGD people, and 78.1% of pharmacists agreed that their staff required such training.	The need for further education about TGD care for pharmacists and staff was evident. Integrating such education in university pharmacy curricula is considered a critical step towards making the future pharmacy workforce ready to provide inclusive and respectful care for TGD people.

Triangulation of the data from the interviews and the national survey undertaken in Stage One provided the data to develop a targeted educational intervention that addresses the specific needs and concerns of pharmacists and TGD people. Based on this research and adapting and incorporating the Gender Equity Framework for transgender populations[23], a Modified Social-ecological Model of Transgender Stigma and Stigma Intervention[24], and Miller's Pyramid[24], I developed a novel Gender Inclusivity in Pharmacy Framework. This new framework guided the design, delivery and evaluation of the training program to enhance TGD healthcare. An article discussing the resulting training program's design, delivery and evaluation for pharmacists and pharmacy students is presented in this chapter.

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Answering the Call for Community Pharmacists to Improve Healthcare Delivery to Trans and Gender Diverse People: Guide for Designing, Implementing, and Evaluating an Online Education Program in Australia

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Article

Answering the Call for Community Pharmacists to Improve Healthcare Delivery to Trans and Gender Diverse People: Guide for Designing, Implementing, and Evaluating an Online Education Program in Australia

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7.1 Abstract

Abstract:

Background: Trans and gender-diverse people visiting pharmacies may not always re-ceive optimum care due to pharmacists' lack of knowledge and confidence to provide such care. This situation prompts a need for training.

Objectives: This paper aimed to describe a guide to the design, implementation, and evaluation of a training program on transgender healthcare for pharmacists in Australia.

Methods: The Implementation Mapping Framework provided a foun-dation for the design, implementation, and evaluation of this training program. Through active involvement in the program development, trans and gender diverse people and pharmacists guided the program design, ensuring alignment with the cultural, social, and healthcare contexts.

Results: The needs analysis highlighted the necessity for training for pharmacists to improve their cultural awareness and pharmacotherapeutic knowledge about transgender healthcare. Applying a novel Gender Inclusivity in Pharmacy Framework, online modules—(1) Transgender healthcare—language, terminology, and key healthcare issues, (2) Gender-affirming therapies, and (3) Case studies in transgender healthcare—were developed to enable the implementation of a training program.

Conclusion: The Implementation Mapping Framework and the Gender Inclusivity in Pharmacy Framework proved effective tools for providing an education program for pharmacists.

Keywords: pharmacy; pharmacists; transgender; gender diverse; education; trans and gender diverse health

7.2 Introduction

Greater recognition and representation of trans and gender diverse people has resulted in an increased demand for healthcare services for people in these marginalised communities.[1] Trans and gender diverse describes people whose gender identity differs from their sex assigned at birth and encompasses those who may identify as transgender, non-binary, sistergirl, brotherboy or other gender identities outside the traditional gender binary.[2] Although trans and gender diverse people visit pharmacies to obtain pharmaceutical care and advice [3-5], many pharmacists have not received training and do not feel confident and comfortable when providing such care and advice to trans and gender diverse people.[5-7]

Research has highlighted the existence of health disparities among trans and gender diverse people.[8] Pharmacists have a role to play in addressing these healthcare disparities experienced by people belonging to the trans and gender diverse communities.[9-11] However, the provision of optimal care to trans and gender diverse people by pharmacists may be impacted by their lack of cultural awareness and pharmacotherapeutic knowledge specific to this population.[3,4,7,10,11] Trans and gender diverse people have shared their negative experiences with pharmacists and pharmacy staff when seeking pharmaceutical care from community and hospital pharmacy settings.[3-5] Such encounters perpetuate the stigmatization and marginalization of an already vulnerable community and discourage trans and gender diverse people from accessing the available healthcare services that could potentially address their unique health needs.[4,10,12] Pharmacists need to acquire the necessary sensitivity and competence to deliver inclusive and affirming care.[10,11,13]

The Pharmaceutical Society of Australia's (PSA) Pharmacy Practice Standards and Code of Ethics expect pharmacists to deliver respectful, inviting, non-discriminatory, and evidence-based care to all clients.[14,15] Moreover, the "Equality Position Statement" from the PSA emphasizes the importance of equitable access to inclusive and discrimination-free healthcare for lesbian, gay, bisexual, transgender, queer, intersex and asexual+ (LGBTQIA+) people, advocating for integrating LGBTQIA+ health education into all pharmacy programs in Australia.[16] Additionally, pharmacists are encouraged to use respectful and inclusive language while providing appropriate care to people who are part of LGBTQIA+ communities.[16] However, currently, there is no training program available in trans and gender diverse healthcare for pharmacists in Australia.

Globally, trans and gender diverse healthcare educational interventions ranging from one-hour to five-hour sessions for pharmacists and pharmacy students have successfully improved knowledge and skills in providing care to trans and gender diverse people.[17–21] A study from Puerto Rico has been shown to improve pharmacists' knowledge about trans and gender diverse care and

pharmacotherapeutic options for gender affirmation.[21] An American study reported using a flipped classroom model where students completed pre-class activities such as reading and watching a pre-recorded lecture and then in class they participated in other activities such as role plays, a game-style learning activity, and engaged with conversation with trans and gender diverse people.[17] A few other studies included didactic lectures[20,22], discussion with trans and gender diverse panels[18,20,] videos[18], and game-style activities.[18] All these studies improved pharmacy students' knowledge and confidence in providing care for trans and gender diverse people.[17,18,20,22] While international interventions can offer insights, it is important to meet the needs of both Australian trans and gender diverse people and pharmacists, with a program developed within the Australian context, providing education focussed on trans and gender diverse healthcare to enhance their capability to serve these populations.

Previous scoping review and mixed method research among pharmacists and trans and gender diverse people identified the need for this training.[3,6,7,9] This article aims to describe a guide to the design and implementation along with an evaluation plan of a training program on trans and gender diverse healthcare for pharmacists in Australia using an Implementation Mapping Framework.[23] This research required a framework that provided a step-by-step but comprehensive and participatory approach to design, implement, and evaluate the training program. The Intervention Mapping Framework involves active participation of stakeholders and provides a systematic and comprehensive approach to identify, plan, and execute the necessary steps for successful program design and implementation. This framework was chosen as it aligned well with our research objectives. Other frameworks[24,25] were considered; however, they could be only partially applied to the design of this study.

7.3 Materials and Methods

The Implementation Mapping Framework [23] provided a foundation for designing, implementing, and evaluating a training program on trans and gender diverse healthcare for pharmacists. This program is intended to meet the diverse needs of trans and gender diverse people and equip pharmacists with the knowledge and communication skills necessary to provide inclusive and affirming care. The Intervention Mapping Framework's structured, collaborative, and inclusive approach increases the likelihood of the program being appropriate, comprehensive, and evidence-based.[23]

This framework provides six sequential steps to guide the design of educational and health promotion interventions (Figure 7-1): (1) Needs analysis, (2) Formulate program objectives, (3) Select theory-based methods and practical strategies, (4) Develop intervention, (5) Adopt and implement program, and (6) Plan for evaluation$_{23}$ Through active involvement in the program development

process, trans and gender diverse people and pharmacists guided the program design, ensuring alignment with the cultural, social, and healthcare contexts.

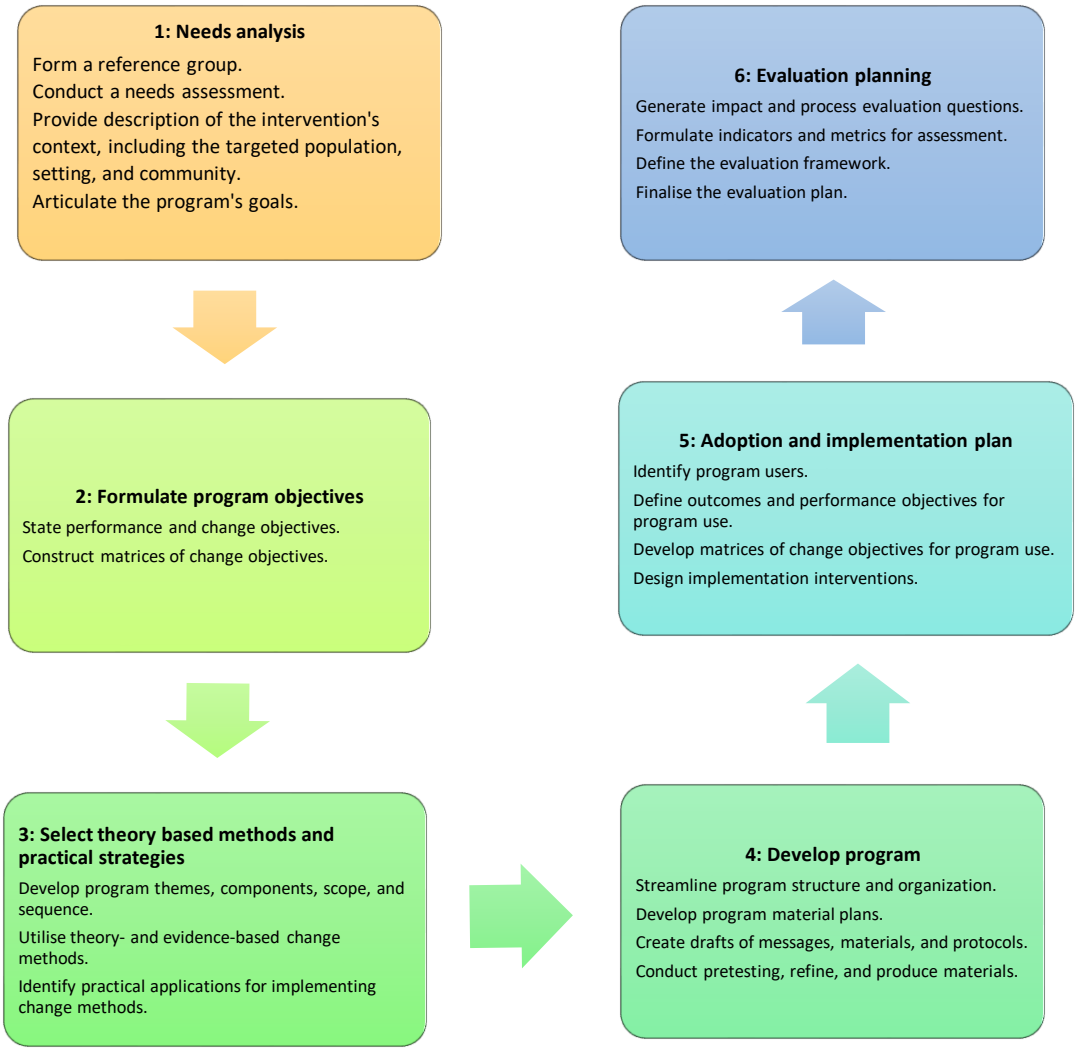

Figure 7-1**:** Six Steps of Intervention Mapping Framework[22]

Step 1: Needs analysis.

Step 1: Needs analysis.

A needs analysis has been performed to explore the role of pharmacists, including their attitudes and practices in trans and gender diverse care, and the experiences and expectations of trans and gender diverse people receiving pharmaceutical care, to identify pharmacists' training needs in trans and gender diverse care.[3,6,7,9] A literature search and data from stakeholder interviews and surveys identified the behavioural and environmental changes needed and the reasons for each change to pharmacy practice to enhance the provision of appropriate care to trans and gender diverse people.[3,6,7,9] This information was then used to guide the program's design, including the development of the program goals and performance objectives. The training program was designed in consultation with a reference group of three trans and gender diverse community members, three

pharmacists, and three academics. The overall goal of the program was to improve cultural awareness and pharmacotherapeutic knowledge of pharmacists to provide respectful and gender-affirming care for trans and gender diverse people.

Step 2: Formulate program objectives.

Based on the program goals from the previous step, the performance objectives (Table 7-2) were developed, detailing the possibilities for practice transformation after implementing the intervention.[23] The determinants of trans and gender diverse healthcare in a pharmacy requiring change to provide appropriate healthcare to trans and gender diverse people in pharmacy were utilised to inform the performance objectives. The performance objectives included the personal determinants (knowledge, awareness, and attitudes) and non-behavioural environmental factors (physical pharmacy environment) that needed to change to attain the overarching program goal.

Table 7-2: Performance objectives and educational methods.

Determinants	Module	Performance objectives	Practical strategy*
Awareness-Culture and healthcare needs	Transgender Healthcare – Language, Terminology and Key Health Issues	To understand the language and terminology for appropriate communication with trans and gender diverse people. To describe how to create a welcoming and inclusive pharmacy environment for trans and gender diverse people. To identify key health issues faced by trans and gender diverse populations. To understand the role of pharmacists in trans and gender diverse healthcare.	Partnership with TGD people and pharmacists. Videos with TGD people to incorporate their lived experiences in the program. Pharmacists and TGD people pharmacy interaction videos. Written information.
Knowledge	Gender affirming therapies	To discuss the common approaches for gender affirmation.	Written information.

		To describe the role of hormonal and surgical therapies in gender affirmation. To Identify potential drug interactions. To understand the effect of hormonal therapy on laboratory values.	
Skills	Case Studies transgender healthcare	To apply the learning from Modules 1 and 2 to address the problems and challenges faced in providing care to trans and gender diverse people, making decisions based on the evidence given.	Partnership with TGD people and pharmacists. Case studies. Videos demonstrating appropriate counselling and interactions with TGD people in pharmacy.

*Delivery Method- All modules were offered online and included relevant references and resources about TGD health.

Step 3: Select theory-based methods and practical strategies.

Educational and trans and gender diverse care theories were chosen to accomplish the program objectives defined in Step 2. These theories informed the design of a novel Gender Inclusivity in Pharmacy Framework (Figure 7-2) for attaining the program objectives. This framework guided the program's development (Step 4) and evaluation (Step 6). The identified determinants requiring change were mapped against performance objectives, with theory-based methods and practical strategies utilised to develop and implement the program.

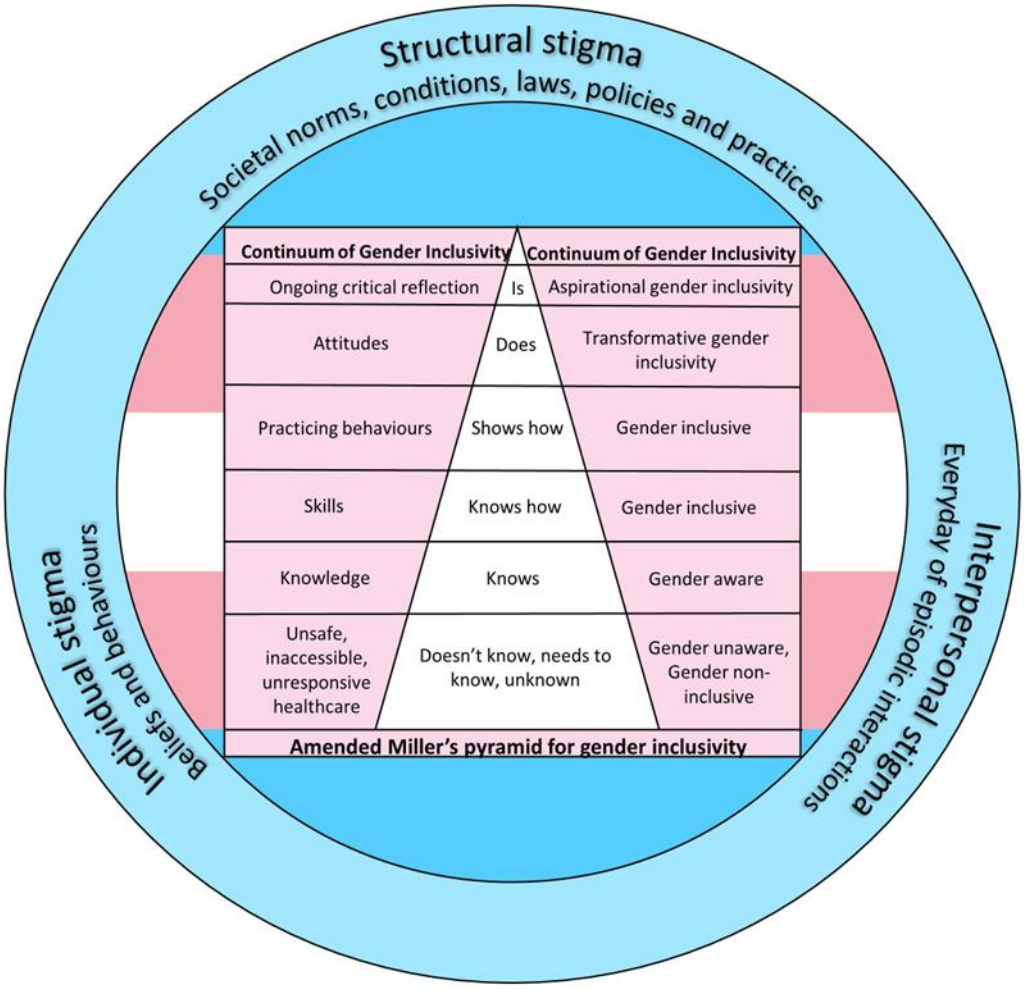

Figure 7-2: Gender Inclusivity in Pharmacy Framework

Step 4: Develop intervention.

The training materials were developed in consultation with the reference group members by applying the goals, objectives, and learning theory produced in previous steps. A training platform was chosen to build the program.

Step 5: Adoption and implementation plan.

Planning for implementation of the program began at the needs analysis step. Pharmacists were recognised as the target groups for this program, and strategies to recruit these participants and disseminate information about the program were also identified.

Step 6: Evaluation planning.

Strategies to evaluate the effectiveness and outcomes of the program were designed to capture the impact of the training on behavioural and environmental determinants of pharmaceutical trans and gender diverse care. An amended Miller's pyramid[26] for competency assessment was utilised to measure the changes in knowledge, skills, behaviours, and attitudes of the participants completing the training program. Results

Step 1: Needs analysis.

The scoping review[9] highlighted the role of pharmacists in trans and gender diverse care, including educating and counselling patients, managing gender-affirming therapy, advocating for patients, and providing preventative care. They recognised their role in providing culturally sensitive care and a welcoming environment for trans and gender diverse people.[9] Although they were aware of their significant role in trans and gender diverse care, they expressed a lack of confidence in their knowledge about providing care to this population group.[9] As a result of this review, we know that pharmacists need specialised education in trans and gender diverse care to ensure that both are confident and comfortable in providing care to trans and gender diverse people.

The interview-based needs analysis with trans and gender diverse people who were recipients of pharmacy care revealed two predominant themes: (1) Difficulties encountered in seeking care from pharmacies, and (2) Maximizing the quality of interactions between trans and gender diverse people and pharmacists.[3] According to the findings, trans and gender diverse people expressed concerns about experiencing anxiety while seeking care, facing constraints within the healthcare system, privacy and confidentiality issues at the pharmacy, and encountering challenges related to their gender identity. These factors were identified as significant reasons leading trans and gender diverse people to either avoid or limit their interactions with pharmacists and pharmacy staff, highlighting the multifaceted barriers that contribute to the complexities of healthcare access for this demographic.[3]

Furthermore, pharmacists' attitudes, practices, and training needs in providing care for trans and gender diverse people in Australia were explored through pharmacists' interviews and a national survey.[6,7] Pharmacists displayed a positive attitude towards providing care to trans and gender diverse people and acknowledged the importance of their role in trans and gender diverse care.[6,7] However, they considered their limited knowledge of trans and gender diverse healthcare as a critical barrier to providing quality care to trans and gender diverse people.[6,7] Given the inadequate or limited coverage of trans and gender diverse care in pharmacy curricula and CPE activities, most pharmacists suggested the addition of education about trans and gender diverse healthcare, and

specifically cultural and pharmacotherapeutic education in both pharmacy curricula and CPE activities.[6,7]

Trans and gender diverse people and pharmacists expressed the need for education to provide care to trans and gender diverse people which informed the program goal: to improve awareness and knowledge about trans and gender diverse healthcare to pharmacists by implementing a program that would enhance their communication skills and confidence in their knowledge of gender-affirming therapies. Moreover, incorporating the lived experiences of trans and gender diverse people in a program that could be delivered online was essential to enhancing the attitudes and practices of pharmacists about providing care to trans and gender diverse people.

Step 2: Formulate program objectives.

Considering pharmacists' role in trans and gender diverse care and the PSA's Professional Practice Standards for pharmacists in Australia[14], performance objectives for pharmacists participating in this program were developed (Table 7-2). These performance objectives were designed to improve the awareness and knowledge of pharmacists in trans and gender diverse healthcare through comprehending culturally sensitive language, as well as healthcare issues of trans and gender diverse people and gender-affirming therapies, thus aligning with the program goal. An online delivery mode was selected for the modules, and practical strategies were chosen considering the program objectives.[12,16,26,27] The practical strategies comprised written information and case studies supplemented by learning videos involving trans and gender diverse people and pharmacists.

Step 3: Theory-based methods and practical strategies.

In this stage, the process entailed selecting methods and practical strategies grounded in established theories (Table 7-2) for inclusion in the design of the training program. Based on the Gender Equity Framework for Transgender Populations,[23] a Modified Social-Ecological Model of Transgender Stigma and Stigma Intervention,[12] and an Amended Miller's pyramid[26] we developed a conceptual framework—Gender Inclusivity in Pharmacy as a novel way to guide the design of this training program (Figure 7-2). This framework was adapted from the study on Indigenous cultural safety by Brumpton et al.[28]

This novel Gender Inclusivity in Pharmacy Framework was utilised to design the components of the program that will promote the acquisition of knowledge, skills, and attitudes necessary to address

individual, interpersonal, and structural stigma and enhance gender inclusivity for trans and gender diverse people in pharmacy.

The outer blue wheel indicates that promoting gender inclusivity for trans and gender diverse people in pharmacy can be achieved through targeted education to reduce three types of stigmas—individual, interpersonal, and structural.[12] Addressing individual stigma involves providing comprehensive training for pharmacists about the diverse spectrum of gender identities and the importance of respectful language and interactions.[12,13] Interpersonal stigma reduction can be achieved by fostering a supportive and understanding environment where pharmacists actively engage in respectful and empathetic interactions with trans and gender diverse people, focusing on their specific healthcare needs.[12,16] To combat structural stigma, educational initiatives can highlight the significance of creating policies and procedures that respect trans and gender diverse rights, ensuring the availability of gender-affirming medications, and advocating for inclusive laws that protect trans and gender diverse people from discrimination.[12,13,16] By addressing these three dimensions of stigma through education, pharmacies can become more welcoming and inclusive spaces for trans and gender diverse people seeking pharmaceutical care.

The amended Miller's pyramid[24] provided a structured approach to developing and evaluating the clinical competence of training participants in trans and gender diverse care across four levels: knowledge, skills, behaviours, and attitudes. The program was designed so that the gender inclusivity level for all participants would improve from 'Gender unaware' to being 'Gender inclusive'.[29] Starting at the foundational level of knowledge, the program focused on providing pharmacists with a comprehensive understanding of trans and gender diverse health, including terminology, hormone therapies, and potential drug interactions so that they 'know' about trans and gender diverse care and become 'Gender aware'.[26] Moving up the pyramid, the program addressed the development of skills, such as effective communication with trans and gender diverse people and cultural competence, so that they become 'Gender inclusive'.[26,29] The next level involves translating knowledge and skills into behaviours, where the program emphasizes the application of learned concepts in real-world scenarios in the form of case studies so that the learners can see how to be 'Gender inclusive'.[26,29] It was anticipated that on completion of this program, pharmacist participants would undergo a significant transformation in their approach to providing care for trans and gender diverse people. This transformation, referred to as 'Transformational Gender Inclusivity,' involves substantial changes in their attitudes and practices. Furthermore, participants can aspire to achieve 'Aspirational Gender Inclusivity' by consistently and critically assessing their attitudes, behaviours, knowledge, and skills in delivering care for trans and gender diverse people.[26,29]

Principles of adult learning theory[27] were applied to develop the components of the training program. Knowles describes how adult learners can create new learning based on their previous experiences and understandings.[27] They are keen to learn new material when they recognise its relevance to their lives.[27] This program design considered Knowles six assumptions[27] about adult learners (see Appendix S). Acknowledging the self-directed nature of adult learners while emphasizing the importance of autonomy in completing learning modules, this training program was designed to be completed on their own time.

Step 4: Program development.

Based on the previous three steps and consultation with the reference group, the principal investigator developed an online training program. The principal investigator has undertaken training[30-32] in trans and gender diverse healthcare and has experience providing care to trans and gender diverse people in pharmacy. Co-authors, who were experienced educators, reviewed the training material before launching the program. The online program consisted of the following three modules:

1. Transgender Healthcare—Language, terminology, and key healthcare issues.
2. Gender-affirming therapies.
3. Case Studies in trans and gender diverse healthcare.

The comprehensive training program equipped participants with a wealth of resources, encompassing reading materials, supplementary links, and pre-recorded videos. These videos showcased people within the trans and gender diverse community sharing insights into their personal pharmacy journeys and articulating their expectations concerning pharmaceutical care. Furthermore, the videos illustrated both inappropriate and appropriate interactions with trans and gender diverse individuals within community pharmacy settings. Specific scenarios, such as counselling on over-the-counter medicines and hormonal medications for gender affirmation, were addressed. Notably, these instructive videos were a result of collaborative efforts involving local trans and gender diverse volunteers and experienced community pharmacists.

Step 5: Adoption and implementation.

The final training program's estimated time to completion would be eight hours, including the time taken to complete the pre-test and post-test evaluation surveys. The program modules will be uploaded to the organizational site called 'Pharmacists in Transgender Healthcare' as a component of the JCU Blackboard educational platform. This online platform will provide participants with easy navigation throughout the program material. All 126 pharmacists who expressed their interest in this

program[6] will be enrolled. The pharmacist participants will have ten weeks to complete this self-paced program.

Step 6: Evaluation plan.

Online pre-test and post-test surveys will be developed for administration using the Qualtrics platform[33] to assess the impact of this training program on participants' awareness and knowledge of trans and gender diverse healthcare. These survey links will be integrated into the program and shared on the organizational site. Pharmacists must complete the pre-test survey to access the training modules, during which they will generate a unique code for subsequent access to the post-test survey. This matching code facilitates the comparison of each participant's pre-test and post-test responses. To obtain a course completion certificate, participants are required to complete the post-test survey. Upon completion, pharmacists will receive a confidential link to provide their contact details (full name and email address) and express their interest in a three-month post-training outcome evaluation interview. After the three-month post training period, the principal investigator will email the pharmacists interested in the post-evaluation interview to assess the outcome of training on the pharmacists' practices.

7.4 Discussion

This is the first study to provide a guide to designing, implementing, and evaluating a training program in trans and gender diverse healthcare for pharmacists using the intervention mapping framework.[23] Utilising the intervention mapping framework established a strong foundation that enabled a systematic progression in developing the training program components and their subsequent evaluation.[23] This framework proved advantageous as it allowed for the incorporation of comprehensive input and diverse viewpoints from stakeholders, resulting in the design of a program that effectively addressed the identified issues and gaps in pharmacists' trans and gender diverse health education. Their collective participation provided practical insights that were based on their experiential knowledge playing a crucial role in shaping the intervention. The stepwise description from development to evaluation may serve as a guide for developing future training programs in trans and gender diverse healthcare and other healthcare training programs.

While intervention mapping[23] offered a robust methodology for developing this training program, implementing all its steps proved to be time consuming. The challenge was to create a training program that could effectively integrate diverse perspectives and offer a tailored approach grounded in theory, evidence, and practical experience to address the day-to-day situations that may arise in pharmacy while caring for trans and gender diverse people. The Gender Inclusivity in Pharmacy Framework facilitated the integration of theories, evidence, and practical strategies to address

individual, interpersonal, and structural stigma experienced by the trans and gender diverse population. Integration of Miller's pyramid[24] into this framework provided a comprehensive and progressive approach to evaluating the participants' competency in the training program.

A notable strength of this study was the involvement of the key stakeholders—trans and gender diverse community members and pharmacists—who would benefit from this program. Key stakeholder engagement throughout the program enabled the development of program objectives. Additionally, the stakeholder input may have improved program adoption and potentially enhanced the impact of the program. Another strength is that the program was designed by the principal investigator, who possesses both knowledge and training in trans and gender diverse care and relevant practical experience. This expertise was important in ensuring that the developed program was comprehensive and responsive to the specific needs of trans and gender diverse people. However, it is important to acknowledge that not all university programs may have immediate access to faculty members with such specialised training.[34] In such cases, alternative strategies can be employed to bridge this gap. One option is to hire individuals with expertise in trans and gender diverse care as adjunct faculty or consultants who can contribute their knowledge and guidance in developing the program.[34] Another approach is to actively engage with local trans and gender diverse community members and experienced pharmacists to gain insights and perspectives that can inform the objectives and content of the program. This collaborative effort will ensure that the training program remains relevant, inclusive, and aligned with the best practices in trans and gender diverse care, even without internal trained faculty.

In the future, this training program can be more widely disseminated in collaboration with educational institutes, professional organizations, and trans and gender diverse organizations. Program promotion and uptake can potentially improve healthcare professionals' attitudes and knowledge to improve the provision of services that meet the needs of this marginalised population, thereby reducing the individual, interpersonal, and societal stigma experienced by trans and gender diverse people. This program teaches universal principles for improving communication and creating an inclusive and welcoming environment for trans and gender diverse people, which can be applied to any organization or business, regardless of its healthcare or non-healthcare nature, to foster the inclusion of trans and gender diverse people. The program may be useful in the development of awareness campaigns to reduce societal stigma. Such campaigns could be promoted during special days for the trans and gender diverse population, such as Transgender Awareness Day, Wear It Purple Day, International Day Against Homophobia, Biphobia, and Transphobia (IDAHOBIT) Day and Trans Remembrance Day.

7.5 Conclusion

The Pharmaceutical Society of Australia's (PSA) Pharmacy Practice Standards and Code of Ethics expectation of pharmacists to deliver respectful, inviting, non-discriminatory, and evidence-based care to all clients has not been met by all pharmacists. A knowledge and skills gap about trans and gender diverse healthcare provision by pharmacists highlighted during a needs analysis led to the design of an online training program to bridge this gap in knowledge and skills. The Implementation Mapping Framework provided a useful step-by-step approach to guide the design, implementation, and evaluation. A novel Gender Inclusivity in Pharmacy Framework also provided guidance for developing and evaluating the program components that may improve the pharmacists' knowledge, skills, attitudes, and behaviours, ultimately fostering competence in providing care for trans and gender diverse people in pharmacy. This framework can be utilised to develop and evaluate future training programs in trans and gender diverse healthcare.

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Chapter 8: Training Program Evaluation

This chapter is dedicated to the evaluation of the training program designed to educate pharmacists about TGD care. Throughout this chapter, I present the process and methods used to evaluate the training program's effectiveness in enhancing pharmacists' awareness, knowledge, and practices concerning TGD care. The evaluation results are an important guide for the development of future educational programs designed to create a more inclusive and welcoming healthcare environment for the TGD community.

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Evaluation of a transgender health training program for pharmacists and pharmacy students in Australia: A pre-post study

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8.1 Abstract

Background: Disparities in healthcare for transgender and gender diverse (TGD) people are well-recognised, with pharmacists reporting a lack of knowledge impacting confidence in their interactions with TGD people. Therefore, a training program in TGD healthcare was designed to address this knowledge gap.

Objective: To evaluate the impact of the TGD healthcare training program on the awareness, knowledge, and behaviour of pharmacists and pharmacy students in Australia.

Method: An online training program was evaluated by pre-and post-test surveys, which assessed the knowledge and awareness of participants, and three-month post-training interviews, which examined the effect of training on pharmacists' practice when providing care to TGD people. Data were analysed using paired t-tests, content and thematic analysis.

Result: Fifty-six pharmacists and twenty-one pharmacy students completed the training and pre-and post-test surveys. Ten pharmacists were interviewed post-training. There was a significant improvement in the awareness (pharmacists, p= <0.001; students p= 0.006), knowledge (pharmacists and students, p= <0.001) and total (pharmacists and students, p= <0.001) post-test scores for both groups. Interviewed participants found the training program comprehensive and relevant to their practice.

Conclusion: This study has demonstrated that educational interventions improve TGD healthcare awareness and knowledge for pharmacists and students with the potential to improve healthcare provision to TGD people and promote inclusivity in society.

Keywords: Pharmacy; Healthcare; Non-binary; Pharmacists; Professional education; Transgender.

8.2 Introduction

While accurate statistical information for the transgender and gender diverse (TGD) population in Australia is not available, it is approximated that around 0.1-2% of the global population identifies as TGD.[1] Challenges faced by TGD people in healthcare settings, including pharmacies, are widely recognized.[2-4] Even though pharmacies provide various pharmaceutical services to TGD people, many TGD people report encountering obstacles to receiving culturally competent care.[5-7] Some challenges faced by TGD people when accessing care from pharmacies include instances of deadnaming, the use of incorrect pronouns, and stigma among pharmacy staff surrounding TGD identities, which may further impede a supportive pharmacy environment.[2,7,8] The overall lack of awareness about TGD health issues and gender-affirming therapies among pharmacists was also identified as a barrier to accessing essential and affirming healthcare for TGD people.[2,3,8] The Pharmaceutical Society of Australia's 'Professional Practice Standards' and 'Code of Ethics' for pharmacists advise on the provision of culturally sensitive, respectful, and person-centred care to all patients.[9,10] However, a previous study found that TGD people in Australia experienced unequal treatment in pharmacy settings and reported a lack of understanding of their healthcare needs by pharmacists and staff.[7]

Pharmacists, being healthcare professionals who are easily accessible without appointments, are well-positioned to reduce healthcare disparities experienced by TGD people.[2,3] However, they may inadvertently increase these disparities because of a lack of knowledge and understanding of the healthcare needs of TGD people.[3,5,6] Pharmacists have reported feeling less comfortable and confident in providing care to this underserved population and have requested education to provide culturally appropriate care without fear of offending TGD people.[6,8] These findings provide an opportunity for pharmacy education providers to design and implement training programs that foster culturally appropriate communication, improve knowledge about the healthcare needs of TGD people and enhance the adaptation of attitudes necessary to embrace gender diversity.[6-8]

Internationally, some initiatives have been implemented to include education about TGD healthcare in pharmacy education.[11-15] Such education has been provided to pharmacists and pharmacy students through continuing professional education (CPE) activities or integrated into university curricula.[11-15] Exposure to the educational content in these activities ranged from one hour to five hours.[11-15] A three-hour CPE activity for pharmacists that included a didactic presentation and facilitated discussion of cases reported increased participants' knowledge of TGD care and hormonal therapies.[12] Frazier et al. implemented a flipped classroom model to teach subject material to pharmacy students, who were required to complete pre-class reading and watch a pre-recorded lecture.[15] In class, students completed a game-style activity reinforcing the learning from the pre-

class materials, engaged in discussions and role plays and participated in an interactive session with a TGD person. This activity enhanced students' knowledge and confidence in caring for TGD people.[15] Another study utilized a one-hour lecture introducing LGBT terminology and a two-hour panel discussion with TGD people to improve students' understanding of TGD care.[13] Other studies included a didactic lecture[16], videos, a Jeopardy game and a panel of TGD people[11], which all reported increasing students' knowledge and confidence in providing care to TGD people. Recently, guidance about topics to incorporate in pharmacy education to improve TGD healthcare knowledge has been published.[17] Newsome and Gilmer recommended the introduction of content that builds cultural competency, addresses unconscious biases, and improves pharmacotherapeutic knowledge about gender-affirming therapies.[17] However, information about the effect of including TGD healthcare education activities in Australian curricula or CPE activities on pharmacists' and students' awareness and knowledge about TGD healthcare is unavailable.

The lack of availability of TGD healthcare education activities in Australian curricula or CPE activities for pharmacists[8] and considering the requirements of the Australian TGD population[7] prompted the development of an online training program aimed at educating pharmacists and students about TGD healthcare. The design of this training program was informed by data from our previous studies[7,8,18,19] involving appropriate stakeholders, including TGD people, pharmacists, and an expert advisory group. First, a scoping review was conducted to map pharmacists' role in TGD healthcare.[19] Then, interviews with TGD people[7] and pharmacists[8] informed how pharmacists could enhance the healthcare outcomes of TGD people by addressing the common barriers experienced by TGD people visiting pharmacies. Finally, a national survey of pharmacists explored the knowledge, attitudes, practices, and training needs of Australian pharmacists in TGD healthcare.[18] The pharmacists demonstrated positive attitudes and were eager to learn about TGD healthcare to improve their confidence and comfort in delivering care to TGD people.[8,18] Pharmacists favoured CPE activities in the form of online modules.[18] Therefore, an online training program consisting of three modules was developed in consultation with an expert advisory group. This group consisted of three TGD people, three pharmacists and three pharmacy academics. This study aims to evaluate the impact of this online training program on pharmacists' and pharmacy students' knowledge and awareness of TGD healthcare and to explore the outcome on pharmacists' behaviour in practice of providing care to TGD people three months after the training program was provided.

8.3 Methods

Training program and survey tool:

Based on previous needs analysis studies[7,8,18,19], an online training program on TGD healthcare was developed. The details of the design of this training program, which included the following online modules, are discussed in a manuscript that has been submitted for publication elsewhere.[20]

1. Transgender Healthcare – Language, terminology, and key healthcare issues
2. Gender affirming therapies
3. Case Studies in TGD Healthcare

The training program included reading material, links to additional resources and pre-recorded videos of TGD people discussing their past interactions with pharmacists and their healthcare expectations from pharmacists and pharmacy staff. Additionally, videos demonstrating inappropriate versus appropriate interactions with TGD people in a pharmacy setting, including counselling on over-the-counter medicines and hormonal medicines for gender affirmation, were incorporated. These videos were filmed with local TGD volunteers and pharmacists.

A pre-test post-test intervention design was utilized to investigate the impact of this training program on pharmacists' and pharmacy students' knowledge, awareness and attitudes toward providing pharmaceutical care to TGD people.[21] A validated survey tool from a previous study by Hernández-Agosto et al.[22] was adopted, translated into English from Spanish, and modified to suit the Australian context (Supplementary Material 1). Both pharmacists and students were required to complete a pre-test survey before accessing the training modules and a post-test survey after completing all three modules. Questions 1 to 10 constituted the ‘Awareness scale’ and assessed the awareness of the participants about gender terminology and healthcare needs of the TGD population, while the ‘Knowledge scale’ (Questions 11 to 24) examined their understanding of gender affirmation therapy for TGD people. Additional demographic and training evaluation questions were added at the end of the post-test survey. Free-text comments about the training program and the outcome evaluation interviews were included to assist in identifying changes in pharmacists’ attitudes toward the provision of TGD care.

Participant recruitment for the survey and interviews

Pharmacists: All pharmacists who participated in a previous national survey about the knowledge, attitudes and training needs of Australian pharmacists[18] were provided with an opportunity to express their interest in a training program about TGD healthcare. After completing that survey, interested pharmacists provided their contact details (name, email, contact number) via a confidential link. The principal investigator contacted them via email and provided information about enrolment into the online training program on TGD healthcare. A total of 125 pharmacists were

enrolled in the training module. The training module was available for completion for pharmacists from October to November 2022.

Pharmacy students: All fourth-year pharmacy students (N=25) at James Cook University were enrolled in the online training module on TGD healthcare. This module was offered as a part of an Advanced Pharmacy Practice subject that included expanded and specialized pharmaceutical care. Pharmacy students completed this training in the class at their own pace over two sessions (a total time of five hours). The principal investigator was present in both sessions and answered any queries related to the content. Once students completed the first two modules, the case studies in Module Three were discussed with the students at the end of the second session as a group activity. Participation in pre-and post-test surveys was voluntary and did not affect their final grade in the subject.

Data collection

Pharmacists: Online pre-test and post-test surveys were developed and administered using the Qualtrics platform. Pharmacists were required to complete the pre-test survey to receive access to the training modules. In the pre-test surveys, they were asked to generate a code to access the post-test. This code enabled the researchers to match the pre-test and post-test surveys to the participants. After completing the training, a post-test survey was available for completion. Once respondents completed the post-test survey, a confidential link was provided to complete their contact details (full name and email address) to receive a course completion certificate and express their interest in a three-month post-training evaluation interview.

Three months after the training, the principal investigator contacted the pharmacists who expressed interest in participating in the post-evaluation interview via email. Zoom or phone interviews were arranged with the participants responding to the email.

Pharmacy students: A JCU Pharmacy staff member who had no affiliation with this study administered the paper-based pre-test and post-test surveys to the students before and after completing the training modules in the class. This staff member assigned random codes to the students and distributed pre-and post-test surveys with the same code to the same student, allowing the pairing of the pre-and post-test surveys.

Data analysis

Pre-test post-test survey: For data analysis, the pharmacist pre-test post-test data were imported from the Qualtrics platform into the SPSS software, while the student pre-test post-test data were

manually entered into the SPSS software. Paired t-tests were conducted to determine whether there was a difference in the pre-and post-test performances of participants. The differences in awareness scale, knowledge scale and total scores were analysed. Demographics and other quantitative data were analyzed using descriptive statistics. Qualitative data from open-ended questions were analyzed using content analysis.[23]

Interview: Interviews were recorded and transcribed verbatim using the Zoom transcription function. The principal investigator compared these transcriptions with the audio interviews to ensure the accuracy of the data. The transcripts were imported into the NVivo data management software, and themes were derived using Braun and Clarkes' framework for thematic analysis.[24]

Ethics

This study was approved by the Human Research Ethics Committee of James Cook University (Approval no. H8265). Participation in this research was voluntary, and the participants could withdraw from this research at any time without any prejudice or explanation.

8.4 Results

Pharmacist pre-test post-test survey

Out of 125 pharmacists enrolled in the training program, 72 completed the pre-test, and 56 completed the post-test. Therefore, data from 56 participants who completed both tests were included in this study. The demographic characteristics of the pharmacist participants are listed in Table 8-1.

Table 8-1: Pharmacist participant characteristics.

Participant characteristics	**Frequency (%)**
Gender	
Male	12 (21.4)
Female	39 (69.6)
Non-binary	3 (5.4)
Prefer not to say	2 (3.6)
Age (years)	
18-25	1 (1.8)
26-35	28 (50)
36-45	14 (25)
46-55	6 (10.7)

55 and above	7 (12.5)
Work setting	
Academia	3 (5.4)
Community pharmacy	43 (76.8)
Hospital Pharmacy	7 (12.5)
Other	3 (5.4)

The pre-and post-test statistical analysis revealed significant improvements in the awareness scale ($p < 0.001$), knowledge scale ($p < 0.001$) and the total score ($p < 0.001$) of the pharmacists after completion of the training program. The highest possible test score was 24, with 10 points for the awareness scale and 14 points for the knowledge scale. Although 14 (25%) pharmacists scored 100 per cent on the pre-test awareness scale, this number almost doubled after completing the training program, with 31 (55.4%) obtaining a 100 per cent score for the awareness scale. No participant scored 100 per cent on the pre-test knowledge scale and total score. However, 9 (16%) pharmacists scored 100 per cent on the post-test knowledge scale, with 5 (8.9%) achieving a 100 per cent total score on the post-test. Table 8-2 shows the pre-and post-test scores for pharmacists.

Table 8-2: Pre-test and post-test scores for pharmacist participants.

	Awareness Scale Score				Knowledge Scale Score				Total Score			
	Lowest	Highest	Mean	p-value	Lowest	Highest	Mean	p-value	Lowest	Highest	Mean	p-value
Pre-test	6	10	8.7	<0.001	6	13	9.1	<0.001	14	22	17.8	<0.001
Post-test	7	10	9.3		9	14	12.1		18	24	21.4	

For the pre-test awareness scale, most pharmacists (n= 33, 58.9%) answered question seven (How can pharmacists create an inclusive environment for transgender patients?) incorrectly. However, this number decreased by one-fifth (n= 22, 39.5%) in the post-test. For the knowledge scale, three-quarters of the pharmacists (n= 42, 75%) selected an incorrect option for question sixteen (According to current pharmacy practices in Australia, which therapy is NOT suitable for a transgender woman using hormonal therapy?), while less than a quarter (n= 12, 21.4%) selected an incorrect option in the post-test.

Most of the pharmacists found the training program valuable for their practice. The themes derived from post-test comments about what they liked about the training program are summarised in Table 3. More than 96 per cent of pharmacists agreed/strongly agreed that this training program improved confidence in their knowledge of pharmacotherapeutic options available for gender-affirming therapy. More than 95 per cent of pharmacists agreed/strongly agreed that this training was beneficial for their practice of providing care to the TGD people, while 98.2 per cent agreed/strongly agreed that they would recommend this training program to other pharmacists and pharmacy students.

Table 8-3: Themes from pharmacist (n=56) feedback: What did you like most about this training?

Theme	Frequency	Quote
Comprehensive, easy to understand, convenient	11	"Easy to follow, comprehensive, well set up." "Information was simple to understand, plenty of resources included." "Convenient to do at home. Self-paced."
Informative and innovative	7	"Very informative, provided information that I would not have been educated on elsewhere." "Opened up a new and very interesting area to me that I had not thought about."
Knowledge and confidence for practice	5	"Increased knowledge about the transgender population and therapies available to them, specifically medication therapy." "More confidence around which drugs used, doses and what to counsel on."
Language, interactions and Pharmacotherapy for Gender Affirmation	11	"A fantastic resource to educate re language and appropriate interaction points." "I like the treatment section - what hormones are used and what monitoring should be done - this is an area which is not clear in reference texts. Also liked the cases to consolidate my knowledge."
Relevant to practice	8	"Concise, relevant information and simple strategies to implement." "It was informative and so relevant to my practice. It is so great to have such a resource available."
Case studies	11	"The case studies were very instructive and suggested counselling points I would not have thought of." "The case studies that demonstrate the information and how to deliver it."
Inclusion of TGD people	6	"Having real perspectives from transgender customers." "I also appreciated hearing from transgender individuals about how pharmacies could be more inclusive to them."

References and resources, all information in one place	6	"Up-to-date references and nomenclature." "I loved how many good resources I was exposed to and have utilised already." "Detailed information all in one place with excellent examples."
Videos	13	"I enjoyed the video examples; it helped consolidate the concepts covered in Modules 1 and 2 and acted as a good example of pharmacist interaction."

In the post-test, pharmacists were asked what they would not include in the training and what they would like to add to future training sessions. Most pharmacists stated they liked everything about the training. Several pharmacists requested more practice questions to self-test their knowledge, with a few requesting an interactive session to discuss more case studies and practice counselling. Some pharmacists requested the training material as a PDF file or a printed booklet for later use as a reference guide. Similar results were observed in the three-month post-training interview data (Table 8-4).

Although 28 (50%) pharmacists were interested in the post-training interviews, only ten participated. Most pharmacists found that the training positively impacted their communication and approach to TGD patients and transformed their practice. Pharmacists rated the training program between 3 and 5 out of 5. The pharmacists who rated it below 5 stated that the lower rating was mainly because they had not encountered a TGD patient in practice since the completion of the training. Therefore, they could not state the impact of the training on their professional practice, but on a personal level, they felt more confident and comfortable providing care to TGD people. Most pharmacists identified three common barriers to providing care to TGD people in community pharmacies - societal and personal beliefs, lack of privacy and confidentiality, and lack of awareness about TGD health among pharmacists and staff.

Table 8-4: Themes from the interviews.

Theme	Quote
Awareness Knowledge	*"I feel like I am much more confident with some of the tools from the training activities and modules, so I have much greater awareness and respect and empathy to those people in our community who identify as trans."* *"The most important thing for me as a pharmacist was the recognition of the hormonal therapy. At what point, based on the length of the hormone therapy you would be considered physiologically male or female. Because then, if I do come across a such a patient clinically, I know what to consider the patient's sex to be in relation to the treatment."*
Comfort Privacy	*"So, a lot more comfortable like addressing pronouns, and preferred names and certainly introducing myself with pronouns and asking pronouns in a respectful manner, has been really helpful. I'm feeling comfortable, and not self-conscious about doing that, but also sort of being aware of surroundings and keeping in mind privacy concerns."* *"I would say privacy for such patients is actually more critical than normal because obviously they're going to have a lot more social stigma attached to them. The way set pharmacy is set up right now that's something that the whole professional need to work on."*
Change – personal and societal behaviour in pharmacy	*"So, I feel like what I took away from this was also how to create open spaces, behave and work empathetically, non-judgmentally. Now, I have an open mind and just embrace everybody as equals, and I feel like that's a big takeaway message bigger than just what the content was about."* *"If I place it [the transgender flag] in the window, would you feel happy, or would you feel scared that people may look at it negatively. Broader society would they look at it negatively, or would they? People would know they [transgender people] would come here. Would it cause an incident?"* *"I work in a very ethnic population of [the city], where it can be quite religious, and some of my colleagues are of different belief background*

	where it doesn't align with their beliefs. So, there is some of that being a barrier."
Complete resource Requirement for printed or accessible training material	*"I thought it [the training] was a complete resource. Excellent."* *"I would like printed material or booklet even at cost."*
Future training availability for broader consumption	*"I would love to see it, maybe added to a university course for pharmacists."* *"I'd love to see it available to more pharmacists, because I will definitely send everyone to go do it when it is available."*

Student pre-test post-test survey

All 25 students completed the modules; however, only 21 participated in both pre-and post-test surveys. Most student participants were female (n=14, 66.7%) and aged between 18 and 25 (n=20, 95.2%). When pre-and post-test surveys were analysed, a significant improvement in the awareness scale scores (p= 0.006), knowledge scale scores (p <0.001) and total scores (p <0.001) was noticed upon completion of the training program.

Only 2 (8.3%) students scored 100 per cent on the pre-test awareness scale; however, 9 (37.5%) students achieved a 100 per cent score on the post-test awareness scale. None of the students scored 100 per cent in pre-test and post-test knowledge scales and total scores. Pre- and post-test scores for students are reported in Table 8-5. Like the pharmacist's data, most students struggled to answer questions seven (How can pharmacists create an inclusive environment for transgender patients?) and sixteen (According to current pharmacy practices in Australia, which therapy is NOT suitable for a transgender woman using hormonal therapy?) on pre-test and post-tests. In the pre-test, over three-fifths of the students (n= 13, 61.9%) selected a wrong answer for question seven. After completing the training program, only 28.6% (n= 6) of students answered the question incorrectly. Almost all students (n=20, 95.2%) chose an incorrect option for question sixteen on the pre-test, while more than four-fifths (n=17, 81%) still chose an incorrect option after completing the training program.

Table 8-5: Pre-and post-test scores for student participants.

	Awareness Scale Score				Knowledge Scale Score				Total Score			
	Lowest	Highest	Mean	p-value	Lowest	Highest	Mean	p-value	Lowest	Highest	Mean	p-value
Pre-test	5	10	8.2	0.006	5	12	8.0	<0.001	10	21	16.2	<0.001
Post-test	6	10	9.1		6	13	9.8		14	23	18.9	

Students were asked to comment on what they liked most about the training session. The themes from this data are listed in Table 8-6 with representative quotes. When asked about what they did not like about the training session, most students stated that there was nothing to mention. A couple of students reported not having enough time to complete the training modules in the class, with one stating, “There was so much content to cover in such a small amount of time.” Like the pharmacist data, a few students requested more post-module quizzes. Most students appreciated the inclusion of TGD people in training videos; however, a few stated that additional in-person interaction with TGD people in group learning sessions may benefit their learning. Some suggested including case studies in their dispensing and counselling practice sessions to improve their confidence in providing care to TGD people.

Table 8-6: Themes from student feedback: What did you like most about this training session?

Theme	Frequency	Quote
Comprehensive, easy to understand, convenient	8	"Content was easy to consume and easy to understand." "The ease of undertaking it (having set up as modules)." "Liked the "learn at your pace" format of the modules."
Informative and innovative	11	"New and very informative, learnt a lot about a topic that I had little knowledge about." "Very new topic for us, so it was incredibly insightful and interesting to learn."
Language, appropriate interactions and Pharmacotherapy for Gender Affirmation	9	"Was useful to learn about how to handle situations in the pharmacy with transgender patients to ensure they feel comfortable, unlikely we could get guidance from our pharmacist as they haven't been taught."
Relevant to practice	4	"I like this training session as it is on a topic that I know very little about but do see in practice."
Safe space to ask questions	3	"The ability to ask sensitive questions and being respectfully responded to."
Videos	6	"The case scenario videos of the pharmacist-patient interaction were helpful to understand the language which should be used in a pharmacy."

More than 95 per cent of students agreed/strongly agreed that this training program improved their confidence in their knowledge of pharmacotherapeutic options available for gender-affirming therapy. About 91 per cent agreed/strongly agreed that this training was beneficial for their practice and would recommend it to other pharmacists and pharmacy students.

8.5 Discussion

This is the first study in Australia that has assessed the impact of education about TGD healthcare on the knowledge and attitudes of pharmacists and pharmacy students and the outcome of the behaviour of pharmacists in practice. Most pharmacists and students found this training program

valuable and relevant to their practice. Changes in their knowledge levels and attitudes were noticeable post-training. Although previous international studies[11-15] have found that training in TGD healthcare improved the knowledge, attitudes, comfort and confidence levels of pharmacists and students to provide care to TGD people, no study has evaluated the long-term impact of such intervention. In this study, the three-month post-training evaluation interviews with pharmacists provided insight into changes in the behaviour of pharmacists in practice. Furthermore, these interviews shed light on the barriers experienced by pharmacists in providing care to TGD people in pharmacy.

Post-training, the most noticeable change in the attitudes reported by participants was their perspective of how they view not only TGD people but everyone in a non-judgmental way. Concerning Aboriginal and Torres Strait Islander people's cultural and clinical safety, the culturally safe practice has been defined as "the ongoing critical reflection of health practitioner knowledge, skills, attitudes, practising behaviours and power differentials in delivering safe, accessible and responsive healthcare free of racism."[25] Similarly, culturally safe practice with TGD people requires ongoing reflection by healthcare professionals on the implicit biases they may unintentionally bring into their practice. This training program enabled participants to introspect and observe their attitudes, behaviours, and practices. Additionally, it equipped them with tools for communicating with TGD people in non-judgemental and inclusive ways. Understanding the patient's preferred language, needs, and values is fundamental in providing culturally safe, respectful, and person-centred care.[26] Pharmacists and students in this training program brought this awareness to their practice through meaningfully engaging in conversation with TGD people and building trusted relationships. Pharmacists in earlier studies have reported that the inability to establish trust with TGD people in pharmacy was one of the main barriers to providing care for TGD people.[8,19] Acknowledging the differences in culture and being cognisant of the elements of respectful verbal and non-verbal communication, healthcare professionals, including pharmacists, can redress the trust barrier and provide equitable care to TGD people.

Misconceptions and a lack of awareness about gender identities often lead to prejudice, discrimination, and marginalization against TGD people.[27] Such personal and social beliefs may harm the mental, emotional, and physical health and well-being and overall quality of life of TGD people.[27,28] Religion and culture often play a critical role in forming worldviews and values that influence personal beliefs.[29] Such beliefs may substantially impact individuals' attitudes and perceptions toward TGD people.[29] Although the effects of pharmacists' religious and cultural beliefs on the provision of care to TGD people in pharmacy have not been extensively studied, some

pharmacists in this study raised their concerns about colleagues and staff that may have discriminatory views toward TGD people that may be deeply rooted in their religion and culture. Educational interventions aimed at improving the awareness of healthcare professionals and students about TGD people have been demonstrated to effectively reduce transphobic attitudes and improve their comfort and confidence in care provision to TGD people.[11,16,30,31] Most participants of this study recommended the implementation of this training program at a broader level so that all pharmacists, staff and students are educated about TGD people and become acquainted with wider views. Exposure to diverse perspectives may challenge deeply rooted beliefs and values, eventually improving acceptance of people of varied gender and sexual identities.

Although the visibility of TGD people has increased in recent years, as suggested by our data, social challenges for TGD people persist. Positive changes in personal and societal attitudes may reduce or prevent both subtle and overt forms of stigma in pharmacy and other healthcare settings.[27] Educational interventions promoting acceptance and inclusion of TGD people have been shown to challenge stereotypes and reduce societal stigma.[30,32] Legislative changes and policy reforms are also instrumental in fostering inclusivity and equity in healthcare for TGD people.[27] A recent publication of an 'Equality Statement' by the Pharmaceutical Society of Australia is a positive step toward enhancing the equality for LGBTIQA+ people in pharmacy.[26] With an improved understanding and acceptance of gender diversity, a society can create and foster a culture that embraces and celebrates that diversity. Therefore, training about gender diversity and cultural awareness needs to be implemented at a broader level to irradicate the social and personal stigma toward TGD people.

This training program included pre-recorded videos with TGD people sharing their experiences visiting pharmacies and their expectations from pharmacists and staff. Learning videos demonstrating inappropriate Vs appropriate interactions in pharmacy and exemplifying OTC and prescription medicines counselling were filmed with TGD people and pharmacists. Participants in this study regarded these videos as the most valuable learning tools. These videos enabled them to listen to the perspectives of TGD people and observe actual patient-pharmacist interactions. Including actual patient experiences in education programs has been shown to improve the attitudes of healthcare professionals toward their patients.[33] The involvement of patients in teaching has been found to enhance communication skills and adopt non-judgemental attitudes and respect toward patients, ultimately positively impacting the provision of person-centred care.[33] Other studies included interactive sessions with TGD people and found these sessions effective in improving the comfort and confidence levels of participants in providing care to TGD people.[11,13] Although this training program did not include such interactive sessions, some participants suggested that there

might be an opportunity to do so to improve their confidence in communicating with TGD people. However, adding interactive sessions may require more time and resources and entail additional responsibility for protecting the safety and confidentiality of TGD people participating in these activities.

Although most participants received this training program well, some issues may need to be resolved before administering the program on a larger scale. Many participants liked the inclusion of videos and case studies in this training program, but a few criticized the sound quality of the videos. One participant also recommended including audio transcripts for videos to improve the accessibility of video content in a shared workspace. Some participants recommended adding more multiple-choice question quizzes at the end of the modules to self-test their knowledge. Such quizzes are an important learning tool that engages students in active learning, enhances the desire for learning, and improves understanding and knowledge retention.[34] Therefore, the addition of such post-module quizzes may be beneficial for future learners.

Based on the data, exposure to TGD health content on this one occasion may not be sufficient for knowledge retention as some pharmacists may not see many TGD people in their practice. Pharmacists who do not apply the knowledge and skills obtained through this program regularly may experience a gradual loss of some of the acquired knowledge and skills over time. There are limited studies testing the long-term knowledge retention of the participants after an education intervention.[35] Therefore, as suggested by the participants, providing training at regular intervals, summary communications, and printed materials, including the material covered in the program and new updates in gender-affirming therapies, may be necessary to retain the knowledge and skills of providing person-centred care to TGD people.

Limitations

Although the sample size for this study was small, the pharmacist participants represented various geographical locations, including rural, remote, regional, and metropolitan areas of Australia. Pharmacists practising in various geographical locations ensured the inclusion of diverse perspectives. The current sample of pharmacists and students was too small to meaningfully run the psychometric tests to re-validate the pre-test and post-test survey tool after adjustment to the Australian context. Therefore, future studies with more participants are required to analyze the validity of the survey tool. Participants performed poorly on some questions (for example, questions seven and sixteen) before and after completing the training program. The reason for such poor performance is unclear, possibly requiring a review of these questions. Australia is a multicultural society, so most pharmacists in Australia are familiar with patients from various cultural

backgrounds, and some participants may have participated in this study because of their open and accepting attitudes toward TGD people. This training program may be suitable for pharmacists and students from other English-speaking countries. However, the language and cultural suitability of the content may require to be adjusted according to the culture of the country.

8.6 Conclusion

For the cohort of participants in this study, this education intervention improved TGD healthcare knowledge and awareness for pharmacists and students and over time, the program has a positive outcome on the behaviour of these pharmacists in practice. This training program has provided participants with the knowledge and skills to provide person-centred care in a non-judgmental and culturally respectful way and increased their confidence in their knowledge of gender-affirming therapies. Although the positive impact on pharmacists' practice of providing TGD care was noticed in this pilot study, future research evaluating the long-term impact of such interventions on knowledge retention and the practice of pharmacists is essential. Moreover, implementing this training program at a broader level is necessary to address the negative personal and societal attitudes deeply entrenched in religious and cultural beliefs. Improved attitudes toward TGD people may reduce stigma and create a welcoming, inclusive, and respectful environment for TGD people both within the field of pharmacy and society.

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Chapter 9: Discussion, Conclusion and Recommendations

9.1 Discussion

Pharmacists have a role to play in TGD health, including in the provision of medications and advice, medication reviews and preventative healthcare.[1] Providing such pharmaceutical care in a culturally sensitive and respectful manner has the potential to positively impact the health and well-being of TGD people.[2] However, pharmacists' ability to deliver this optimum care is challenged when they lack pharmacotherapeutic knowledge about gender-affirming therapies and the cultural sensitivity to communicate effectively with TGD people.[1,3-5] Personal, interpersonal, social, and systemic factors influence the provision of pharmaceutical care for TGD people.[3-5] Personal beliefs and the confidence of TGD people in accessing healthcare services and advice from pharmacists play an important part in determining their ability to engage in pharmaceutical care, especially in the initial years of the gender affirmation journey.[4] A supportive environment and respectful communication enhance TGD people's trust in pharmacists and improve their engagement in pharmaceutical care.[4,5] The key stakeholders in this research, the TGD people and pharmacists, highlighted the need for education in TGD health for Australian pharmacists and pharmacy students.[3-5]

Identifying challenges in providing TGD healthcare and possible solutions for improving care delivery has provided the opportunity to transform pharmacy practice. The need for stakeholder involvement in the development of education to inform this transformed practice has been recognised and reinforced. Listening to stakeholder perspectives ensured the representation of their voices in shaping the education about TGD healthcare in the form of a CPE training program. These findings have highlighted the need for TGD people to be visible in curriculum development impacting their care, engaging them in playing an active role both in their healthcare and training healthcare professionals who deliver this care. Such engagement disrupts the power imbalances between pharmacists as healthcare providers and TGD people as active healthcare participants.[6] As guided by the transformative lens, the active involvement of marginalised people in research recognises that TGD people with lived experience are the true experts in understanding the nuances of their circumstances and applying their invaluable insights to guide and shape meaningful change.[6-8]

Additionally, active participation in the decision-making process promotes a sense of ownership, empowering TGD communities who were traditionally excluded from the conversations concerning their own health and well-being.[7,9] Moreover, making this training program available to pharmacists and pharmacy students and further integrating it into the pharmacy curriculum challenges the institutional oppressive status quo, advancing social justice for TGD people.[6] Furthermore, this approach acknowledges that traditional power structures must be redefined, promoting inclusivity

and respect for not just TGD people but the diversity of cultural perspectives participating in healthcare.[6-8] Ultimately, such involvement is necessary for holistic transformation, as it ensures that policies and initiatives are not only effective but also more equitable and just, addressing the unique challenges faced by marginalised groups.

Gender Inclusivity in Pharmacy Framework

An outcome of this research has been the development of a novel *Gender Inclusivity in Pharmacy Framework* (Chapter 7 Figure 7-2, page 134). This framework provides a tool for educational design and assessment to be used in future training programs in TGD healthcare. The framework was developed based on previous models that only accounted for part of the required elements for transformational change in pharmaceutical practice. The Modified Socio-ecological Model of Transgender Stigma and Stigma Interventions[10] provided insights into types of stigmas and suggested interventions to address stigma. However, it did not include guidance about the assessment of these interventions. Therefore, I searched for frameworks that would inform the evaluation of a training program that reduces stigma and promotes gender inclusivity in pharmacy. This led to the expansive gender equity continuum model[11], which provides various levels of gender inclusivity, clearly defining each level, which assisted in developing educational activities that promoted gender inclusivity and equity for TGD people. However, I needed to build in a method to assess the change in participants' awareness and knowledge of TGD healthcare at the completion of this training program. The search for such a framework resulted in choosing the amended Miller's pyramid[12] with its assessment levels that could be used to guide the development of program objectives and assessments. These endeavours also lead me to the cultural safety model for Indigenous peoples in general practice.[13] Although this model embodies the principles of Indigenous cultural safety, similar principles could easily be applied to the design of a program addressing TGD people's cultural safety. Adaptions from each of the models were combined to develop the novel *Gender Inclusivity in Pharmacy Framework* applied to the design and evaluation of the pharmacy TGD training program in this research.

9.2 Transforming practice

Engage stakeholders in designing educational interventions.

Pharmacists' role is evolving to become more patient-focused. This research considered the perspectives of key stakeholders when designing the educational intervention to ensure the pharmacists' care provision for TGD people is person-centred, as envisioned in the PSA's Professional Practice Standards.[14] Applying a participatory approach enabled me to learn from TGD community members and practising pharmacists to promote inclusivity and reduce stigma and bias in the education and pharmacy practice.[15] Hearing the perspectives of TGD people and pharmacists

ensured that the resulting training program was relevant to both stakeholders. Mirroring real-life situations in the form of case studies built and boosted learners' confidence and offered them opportunities to learn from mistakes found in current practice. Although pharmacy education trails behind other professions in stakeholder engagement[16], it is evident that engaging community members in designing pharmacy education programs is essential to bring attention to a real person with emotional, cultural, spiritual and healthcare needs. Understanding these needs provides opportunities for healthcare professionals to boost their confidence, enhance trust and build relationships with clients to provide holistic care.

Expanding program availability.

This is the first Australian research to design, deliver and evaluate a training program in TGD healthcare for pharmacists and pharmacy students. This research serves as a pilot, providing an opportunity for the expansion and implementation of educational programs nationally and even internationally. Furthermore, with adaption this program could be extended to all pharmacy staff as they are often the first contact for clients visiting pharmacies. However, the mode of delivery to the broader pharmacy staff is yet to be explored. Anecdotal evidence from TGD people visiting community pharmacies suggests that the lack of cultural sensitivity displayed towards them is often attributed to their interactions with pharmacy assistants. Addressing cultural differences and biases and improving awareness of all pharmacy staff about TGD people is necessary for the pharmacy environment to be considered inclusive and welcoming.

Promoting respectful, private and confidential consultations.

It is important to respect the privacy and confidentiality of any pharmaceutical consultation. When providing care for TGD people, this consideration is critical to prevent the client from being outed to others present at the pharmacy. Evidence from my research suggests that outing can make TGD people feel unsafe in such environments, causing them to avoid accessing care from those pharmacies.[4] However, the design and layout of community pharmacies may hinder offering consultations in private spaces due to time constraints, having a single pharmacist on duty and heavy workloads. With the expansion of pharmacists' scope of practice, most community pharmacies have a consulting room. However, this room may only be used for services such as immunisations without recognising that it can be potentially utilised for private consultations with TGD people. Recognising these challenges, if a private consulting room is not available, pharmacists aspiring to the higher level of the pyramid (*Gender Inclusivity in Pharmacy Framework*) would be mindful of using a quieter area in the pharmacy, lowering their voice, offering phone consultations or suggesting the client visit during quiet working hours to protect their privacy and ensure confidentiality.

Funding for further development.

Development and implementation of educational interventions targeted at reducing TGD stigma and promoting awareness and knowledge of TGD care requires an investment of time and resources. This research did not receive any external funding to support this intervention and utilised in-house resources such as an online educational platform of the university to offer the training program. Another educational organisation looking to adapt this program would need to invest in personnel with expertise in TGD health, allocate a budget for curriculum development and resources, and ensure the program is tailored to meet the specific needs and requirements of the stakeholders. Adaptation of this program is possible for pharmacy assistants and other health professionals. However, the availability of external funding to expand the reach of this educational intervention will be necessary.

9.3 Conclusion

This research is the first of its kind in Australia to explore the role of pharmacists in TGD healthcare. It contributes valuable insights to the limited body of research examining the interactions of TGD people and pharmacists when providing pharmaceutical care. TGD people expected pharmacists and pharmacy staff to treat them in the same way as any other client visiting the pharmacy. Overall, pharmacists had positive attitudes towards providing care for TGD people. However, the need for education in TGD health to improve the knowledge and cultural competency of the pharmacists providing care to TGD people was evident. The engagement of the key stakeholders, pharmacists and the TGD people, in developing a TGD healthcare education intervention ensured that the program was relevant to current pharmacy practice with the potential to transform interactions between TGD people, pharmacists and pharmacy staff. Furthermore, this program integrated the principles of culturally sensitive care as guided by TGD people. The resulting training program improved the awareness and knowledge of participating Australian pharmacists and pharmacy students. The *Gender Inclusivity in Pharmacy Framework* lays the groundwork for developing and evaluating future training programs in TGD healthcare. However, future research into the long-term transformations is warranted.

9.4 Recommendations

9.4.1 Research

The Gender Inclusivity in Pharmacy Framework provides a foundation for designing and evaluating future training programs in TGD healthcare. While this pilot study provides valuable insight into the application of this framework, further research is required to validate its effectiveness and utility in other settings.

This research demonstrated that establishing trust among TGD people in pharmacy was challenging for pharmacists.[5] After the training, pharmacists' comfort and confidence in providing care for TGD people increased.[17] However, future research is needed to evaluate the impact of such training on the interactions with TGD people in pharmacy and the overall health outcomes of TGD people. Additionally, the impact of TGD healthcare educational interventions on knowledge retention, attitudes and behaviour over the long-term transformation of pharmacy practice should also be assessed.

Intersectionality of experiences of TGD people (for example, experiences based on disability, ethnic or racial differences, religion and identifying as TGD) in pharmacy was outside the scope of this study. However, future research exploring intersectionality factors might uncover the experiences of TGD people with varied backgrounds while accessing pharmaceutical care. This research may assist in proposing solutions for enhancing the quality of care provided to this population.

9.4.2 Education

The Gender Inclusivity in Pharmacy Framework is an asset for use in the design and evaluation of future training programs in TGD healthcare. However, national standards for TGD healthcare education in pharmacy curricula are needed to ensure consistency of the quality and content delivered across pharmacy schools in Australia. Additionally, the inclusion of TGD care in curricula, CPE, and in-house education delivered in various formats relevant to local content would be useful for pharmacists, students, and staff.

Like the general population, TGD people access healthcare through pharmacies and other healthcare professionals such as doctors, nurses, physiotherapists, and speech pathologists. Therefore, the inclusion of TGD training programs across all healthcare disciplines should be considered to build an inclusive multidisciplinary healthcare system that fosters and celebrates diversity.

9.4.3 Practice

Transformation of the pharmacy practice is essential to promote the trust and confidence of TGD people in accessing care through Australian community pharmacies. Implementing education programs on TGD health for pharmacists, pharmacy students, and staff is vital to achieving such transformation. As they become aware of it, pharmacists should promptly address any inappropriate verbal or non-verbal behaviour directed towards TGD people within the pharmacy. Cultural sensitivity and inclusivity training for all pharmacy staff should be mandatory to promote a respectful environment in the pharmacy. Knowing the correct gender terminology, guidelines, and resources in TGD healthcare and being aware of support groups and organisations for TGD people enable pharmacists to create inclusive and welcoming environments for TGD people, including staff who

might identify as TGD. To promote the uptake of TGD health training among staff, strategies such as implementing staff improvement programs and offering encouragement awards to recognise and reward the completion of education training should be considered.

9.4.4 Policies.

The PSA's Equality Statement recommends including TGD health in pharmacy curricula and CPE activities.[2] There is an opportunity for professional bodies to actively promote and support this TGD health training to ensure widespread adoption of the Equality Statement[2] among their members, reinforcing the importance of inclusive care practices. While guidelines for TGD health exist, policymakers should prioritise their promotion and dissemination to empower healthcare professionals with the knowledge and skills needed to provide inclusive and respectful care to TGD people.

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Appendix A - Search strategy for MEDLINE (Ovid)

1. Transgender persons/
2. Pharmacists/
3. 1 and 2.
4. Exp Education/
5. 3 and 4.
6. Exp “Delivery of Health Care”/
7. 3 and 6.
8. Pharmacies/

Appendix B - Terminology

Term	**Definition**
Trans or transgender	A person whose gender identity differs from their biological sex.
Transman	A person with a male gender identity and female-assigned birth sex.
Transwoman	A person with a female gender identity and a male assigned birth sex.
Genderqueer or gender nonconforming	A person who identifies as not exclusively masculine or feminine.
Agender	A person who identifies as genderless or gender neutral.
Gender fluid	A person whose gender identity fluctuates.
Non-binary	A person who does identifies as neither a male nor a female
Brotherboy	Aboriginal and Torres Strait Islander people may use this term for a person with a male spirit and female sex assigned at birth.
Sistergirl	Aboriginal and Torres Strait Islander people may use this term for a person with a female spirit and male sex assigned at birth.

Appendix C - TGD people Interview Information Sheet

PROJECT TITLE: **Role of the pharmacist in transgender healthcare**

You are invited to take part in a research project about **the role of the pharmacists in transgender care.** The study is being conducted by **Mrs Swapna Chaudhary, a post-graduate student at the College of Medicine and Dentistry and** will contribute to the **Doctor of Philosophy (Health) degree** at James Cook University. Mrs Chaudhary is a pharmacist, who has experience in working with transgender patients and has completed a training module in primary health care for trans, gender diverse and non-binary people offered by Primary Health Network of North-Western Melbourne to ensure the cultural safety of the participants.

If you decide to participate in this study, you will be asked to be interviewed. The interview will take about 45 minutes of your time and will be audio-recorded with your consent. The aim of this interview is to understand perceptions and expectations of transgender clients about the pharmacists providing healthcare services to them. The data gathered from the interview will enable me to develop a transgender healthcare education module for pharmacists and pharmacy students.

The interview will take place either:

- **face-to-face at Townsville at the College of Medicine and Dentistry, JCU or at a place of your choice or**
- **via telephone or**
- **via Zoom online application.**

Your participation is completely voluntary, and you can stop participating and withdraw any unprocessed data at any time during the study without any explanation. Your participation or refusal to participate in this study will not impact in any way to your access to pharmaceutical care.

If you participate in a face-to-face interview, you will receive a $20 gift card and a cab voucher to travel to and from the interview place. If you participate via telephone or Zoom application, you will receive a $20 gift card in post.

Your participation in the interview may cause some emotional distress due to the discussion of sensitive issues. If you experience any distress due to this interview, please contact Lifeline on 13 11 14 or if applicable, your usual counsellor.

Please pass on the information sheet to anyone who you know might be interested in participating in this study.

Your responses and contact details will be strictly confidential. The data from the study will be used in research publications, reports**,** journal articles, my thesis, and conference presentations. You will not be identified in any way in these publications. A report of the study will be made available to you on request.

If you have any questions about the study, please contact **– Mrs Swapna Chaudhary or Professor Beverley Glass.**

Principal Investigator: Mrs Swapna Chaudhary
College: College of Medicine and Dentistry
James Cook University
Phone:
Email: swapna.chaudhary@my.jcu.edu.au

Supervisor: Professor Beverley Glass
College: College of Medicine and Dentistry
James Cook University
Phone:
Email: beverley.glass@jcu.edu.au

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 D - TGD people Interview Consent Form

INFORMED CONSENT FORM: Transgender Client Interview

PRINCIPAL INVESTIGATOR: Mrs Swapna Chaudhary
PROJECT TITLE: Role of the Pharmacist in Transgender Healthcare
COLLEGE: College of Medicine and Dentistry

I understand the aim of this research study is **to explore the expectations of transgender people from pharmacists providing transgender healthcare.** I consent to participate in this research, the details of which have been explained to me, and I have been provided with a written information sheet to keep.

I understand that my participation will involve an **interview,** and I agree that the researcher may use the results as described in the information sheet.

I acknowledge that:

- any risks and possible effects of participating in the ***interview*** have been explained to my satisfaction;
- taking part in this study is voluntary, and I am aware that I can stop taking part in it at any time without explanation or prejudice and to withdraw any unprocessed data I have provided;
- that any information I give will be kept strictly confidential.

(Please tick to indicate consent)

I consent to be interviewed		**Yes**		**No**
I consent for the interview to be audio-recorded		**Yes**		**No**

Name: *(printed)*	
Signature:	**Date:**

Appendix E - Pharmacist Interview Information Sheet

INFORMATION SHEET: Pharmacist interviews

PROJECT TITLE: **Role of the pharmacist in transgender healthcare**

You are invited to take part in a research project about **the role of the pharmacist in transgender healthcare.** Your participation is valuable to inform the development of a transgender healthcare training module for pharmacists and pharmacy students. The study is being conducted by **Mrs Swapna Chaudhary, a post-graduate student at the College of Medicine and Dentistry and** will contribute to the **Doctor of Philosophy (Health) degree** at James Cook University.

If you decide to participate in this study, you will be asked to be interviewed. The interview will take about 45 minutes of your time and will be audio-recorded with your consent.
The interview will take place either:

- **face-to-face at Townsville at the College of Medicine and Dentistry, JCU or at a place of your choice or**
- **via telephone or via Zoom online application.**

Your participation is completely voluntary, and you can stop participating and withdraw any unprocessed data at any time during the study without any explanation. You will receive a $20 gift card for your participation in the study.

Your participation in the interview may cause emotional distress due to the discussion of sensitive issues about transgender care. If you experience any distress due to this interview, please contact Lifeline on 13 11 14 or the counsellor you might have already contact with.

Your responses and contact details will be strictly confidential. The data from the study will be used in research publications, reports, journal articles, my thesis, and conference presentations**.** You will not be identified in any way in these publications.

If you have any questions about the study, please contact **Mrs Swapna Chaudhary and Professor Beverley Glass.**

Principal Investigator: Mrs Swapna Chaudhary
College: College of Medicine and Dentistry
James Cook University
Phone:
Email: swapna.chaudhary@my.jcu.edu.au

Supervisor: Professor Beverley Glass
College: College of Medicine and Dentistry
James Cook University
Phone:
Email: beverley.glass@jcu.edu.au

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 F - Pharmacist Interview Consent Form

INFORMED CONSENT FORM: Pharmacist Interview

PRINCIPAL INVESTIGATOR: Mrs Swapna Chaudhary
PROJECT TITLE: Role of the pharmacist in Transgender Healthcare
COLLEGE: College of Medicine and Dentistry

I understand the aim of this research study is **to explore the role of the pharmacist in transgender healthcare.** I consent to participate in this research, the details of which have been explained to me, and I have been provided with a written information sheet to keep.

I understand that my participation will involve an **interview,** and I agree that the researcher may use the results as described in the information sheet.

I acknowledge that:

- any risks and possible effects of participating in the ***interview*** have been explained to my satisfaction;

- taking part in this study is voluntary, and I am aware that I can stop taking part in it at any time without explanation or prejudice and to withdraw any unprocessed data I have provided;

- that any information I give will be kept strictly confidential.

(Please tick to indicate consent)

I consent to be interviewed	**No**		**Yes**	
I consent for the interview to be audio-recorded	**No**		**Yes**	

Name: *(printed)*	
Signature:	**Date:**

Appendix G - The article containing the survey link and QR code in published in the Australian Journal of Pharmacy

Transgender healthcare: this is our role

As accessible health professionals, community pharmacists have an opportunity to address the healthcare disparities experienced by transgender and gender diverse patients.

By Swapna Chaudhary, Robin Ray and Beverley Glass

Despite the unique healthcare needs of transdgender patients, the availability of appropriate healthcare services for these patients is scarce.[1]

A lack of well-trained healthcare professionals in transgender care may put the already vulnerable population at risk of adverse health outcomes. These patients are also less likely to access required care due to experiences of hardship, stigmatisation, marginalisation and sometimes denial of care in various healthcare settings, including pharmacy.[2]

As accessible health professionals, community pharmacists with an understanding of gender diversity have an opportunity to address healthcare disparities (see Table 1) to improve health outcomes for these patients.[3]

A more visible population

With the increase in social acceptance and visibility of transgender and gender diverse (TGD) people, more TGD people are choosing to live their lives authentically.

The availability of safer and effective treatment options for gender affirmation has significantly increased the demand for transgender healthcare worldwide, including in Australia.[4]

Between 2011 and 2016, an endocrinology clinic in Melbourne reported a tenfold rise in TGD patient visits.[5] The number of new referrals for TGD children at Royal Children's Hospital, Melbourne surged to 104 in 2014 from fewer than 10 before 2011.[6]

On this basis, if you have not had a TGD patient visit your pharmacy yet, you soon will. When TGD patients receive culturally appropriate, respectful patient-centred care, they are most likely to engage with your pharmacy for the long term.

Two real-life scenarios of Australian pharmacists' experiences of interacting with transgender patients—are we ready for the role?

Scenario One

Betty, a 22-year-old female, assigned male at birth, presents to her local pharmacy in her pretty dress with a script for 2mg estradiol valerate tablets. The Medicare card indicates her name as Mr Brian Hogg.

When Betty responds to intake questions, the male pharmacy assistant is surprised to hear a male voice. This puzzles the assistant, and he stumbles in his conversation with this woman as he does not know which pronouns to use. He describes the situation to the female pharmacist.

Although the pharmacist is aware that hormonal treatment can be used for gender transition, she is also confused about Betty's pronouns. When Betty asks for more information about the effects of the medication, the pharmacist does not feel confident in her knowledge including the effects of the medicine and its side effects in a transgender woman.

Although Betty receives the medication, the pharmacist is unsure about the most appropriate advice to give and feels that she has not delivered the best care to Betty.

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Professor Beverley Glass, BPharm, BSc (Hons-Chemistry), PhD, NHD (Marketing), Professor of Pharmacy, College of Medicine and Dentistry, James Cook University, Townsville

Scenario Two

A pharmacist on duty answers a phone call from a patient requesting emergency medication. The patient asks for an emergency contraceptive pill.

Hearing a male voice, the pharmacist asks to speak to their partner so that he can ask specific questions and decide whether this medication would be appropriate for her.

"Oh, but it is for me, not for my partner," says the male voice over the phone. "I am sorry, but we don't have contraceptive pills for men," replies the pharmacist. "But I have female parts," says the patient.

The pharmacist has not dealt with this before, and he is confused and responds: "Oh, I am sorry, I have no idea whether I can supply the pill to you. I think it would be better to see your doctor."

Pharmacists' role in TGD healthcare

In the UK and USA, pharmacists are an integral part of the multidisciplinary transgender healthcare team consisting of endocrinologists, GPs, nurses, psychologists, and speech therapists.[7-9]

Pharmacists in these teams individualise the gender affirmation treatment according to patient's goals, their co-morbidities, and concurrent medications. Pharmacists in the UK who have completed an advanced practitioner course in non-medical prescribing are independently prescribing gender affirmation hormonal treatments to transgender patients.

Although pharmacists are integral members of most healthcare teams, the role of Australian pharmacists in a multidisciplinary team providing transgender healthcare is unclear.

Australian community pharmacies are already providing preventative services such as PrEP provision, smoking cessation, weight management, cardiovascular screenings and needle-syringe programs that are paramount to improve the healthcare outcomes of TGD patients. However, there is a lack of information about the cultural competency of Australian pharmacists and pharmacy staff, their attitudes towards TGD patients, and their training requirements.

TABLE 1: RISKS TO HEALTH AND HEALTHCARE DISPARITIES FOR TGD POPULATION[1,3]

Gender dysphoria
Gender affirmation treatment: Access to treatment, lack of well-trained health professionals
High-risk behaviours: Needle sharing, unprotected sex, tobacco use, alcohol, and substance abuse
Mental health: Anxiety, depression, suicidal ideation and attempts
Sexual health: HIV and other STIs, hepatitis, PrEP access, contraception, fertility preservation

HIV: *Human Immunodeficiency Virus,* ***STIs:*** *Sexually Transmitted Infections,* ***PrEP:*** *Pre-exposure prophylaxis*

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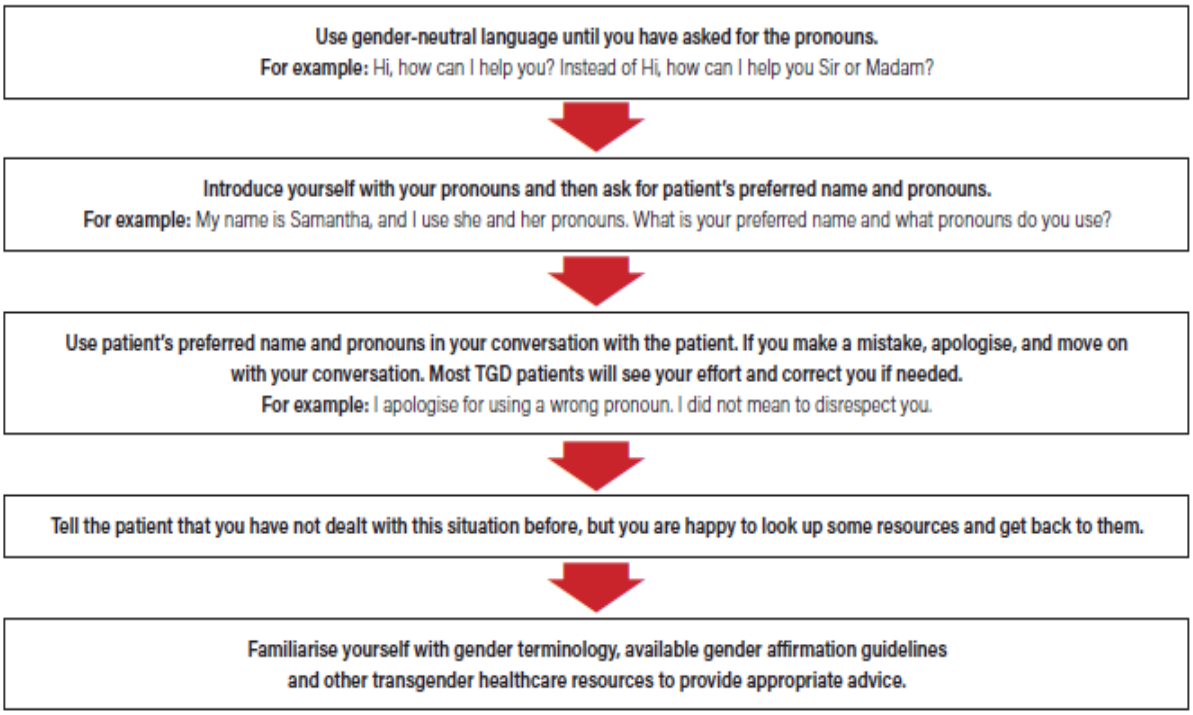

FIGURE 1: **ADVICE FOR PHARMACISTS: TIPS ON LANGUAGE CHOICE**

Education in TGD healthcare

Training in transgender healthcare is not routinely included in undergraduate, postgraduate, and continuing professional development levels of pharmacy education in Australia.

Although all healthcare professionals, including pharmacists, have an important role in minimising the systemic barriers of accessing healthcare for TGD patients, many pharmacists have reported feeling uncomfortable and less confident while providing care to such patients.[10,11]

This may be due to a lack of both the pharmacotherapeutic knowledge in transgender healthcare and communication skills to establish a rapport with these patients.

According to the Professional Practice Standards (PPS) developed by the Pharmaceutical Society of Australia (PSA), pharmacists are required to deliver equitable and culturally respectful healthcare to every patient.

Pharmacists are also responsible for regularly reviewing themselves and staff for social and cultural responsiveness and maintaining a culturally safe practice environment.[12] These standards align with the requirements of the Australian Pharmacy Council for education providers similarly to enable future pharmacists to provide culturally responsive and safe patient-centred care.[13]

Additionally, such care should be provided in an optimised physical environment.[13] While pharmacy students and pharmacists are required to provide TGD patients with culturally responsive patient-centred care, the necessary educational activities in TGD healthcare that would prepare them for this role are lacking.

American pharmacists have called for extra training in transgender healthcare, and a few pharmacy schools in the US have integrated transgender healthcare training modules into their curricula.[14,15]

Other health professionals in Australia, such as doctors and nurses, have recognised the need for additional training in transgender healthcare and are working towards bridging the knowledge gap.[16,17]

In Australia, a transgender care training module has recently been made available for health professionals.[18] Although this training may be beneficial to pharmacists, it does not include pharmacy-specific content.

What can pharmacists do?

As pharmacists, we frequently engage in patient interactions, educate patients about medications, and advocate for affordable care for all patients.

We are required to actively seek out learning opportunities to develop expertise in treatments for gender affirmation. Pharmacists and pharmacy students must be encouraged to familiarise themselves with available guidelines and protocols for gender affirmation treatments. Some available resources are listed below.

Pharmacists need to increase their awareness about available transgender healthcare resources, such as local

TGD support groups and services or TGD-friendly general practitioners to assist these patients in navigating the healthcare system for support and affordable care.

TGD patients seeking hormonal therapy require long-term therapy along with appropriate preventative care and monitoring.

When these patients visit a pharmacy to fill their prescriptions, pharmacists can initiate conversations about the importance of preventive healthcare measures and engage these patients in preventive healthcare services available through pharmacies.

What can pharmacists do to provide better care?

- Provide culturally appropriate care to their TGD patients in a welcoming and inclusive environment.
- Train staff to provide culturally respectful and inclusive care to all patients. Think beyond binary and expand the vocabulary of gender identities. Ask for preferred names and pronouns and use those in the conversation to avoid misgendering TGD patients. Display non-judgemental attitudes and use gender-affirmative language to create a safe space for all patients, including TGD patients.
- Display rainbow or TGD flag stickers and other materials targeted at the LGBTQ community to create an inclusive environment.
- Install (if possible) a single-use, gender-neutral bathroom.
- Update the intake forms and dispensing software to include different gender categories. ■

** References have been published with this article on the AJP website.*

TRANSGENDER HEALTHCARE RESOURCES:

- WPATH (World Professional Association for Transgender Health) Standards of Care[19]
- Endocrine Society Clinical Practice Guidelines[20]
- Guidelines for the primary and gender-affirming care of transgender and gender nonbinary people[21]
- Position statement on the hormonal management of adult transgender and gender diverse individuals[4]
- Australian Standards of Care and Treatment Guidelines for trans and gender diverse children and adolescents[22]

WEBSITES:

trans101.org.au **transhub.org.au** **minus18.org.au**
rainbownetwork.com.au **lgbtiqhealth.org.au**

FEEDBACK

We would like to invite you to participate in an online survey on the attitudes, practices, and training needs of pharmacists in transgender healthcare via the following link: **jcu.syd1.qualtrics.com/jfe/form/SV_0SzuPS9ilobf8rA**
Please scan the QR code to participate in the survey.

There will be an opportunity to express interest in participating in training at the end of the survey.

Appendix H - Student Pre-post test Information Sheet

PROJECT TITLE: **Role of the pharmacist in transgender healthcare**

You are invited to participate in an education session on the role of the pharmacist in transgender healthcare. The aim of this study is to determine the change in awareness and knowledge of pharmacy students in providing transgender healthcare after receiving transgender healthcare training. The study is being conducted by **Mrs Swapna Chaudhary and** will contribute to the **Doctor of Philosophy (Health) degree** at **James Cook University (JCU).**

If you are interested in participating, you will be required to complete a survey before and after the training which should only take approximately 15-20 minutes of your time. You are required to complete an online module in face-to-face education sessions at the JCU Townsville campus. Your identity will not be linked to your response.

Your participation is completely voluntary, and you can stop participating at any time during the study without any explanation; however, once your response has been submitted data cannot be withdrawn due to inability to identify your response. Your response will be strictly anonymous. Your decision to participate or not to participate in the study will not affect your grades in the Bachelor of Pharmacy (Honours) course. Your consent will be indicated by completing pre-test post-test surveys.

The data from the study will be used in research publications, reports, journal articles, my thesis, and conference presentations. This study has been approved by the Human Research Ethics Committee of JCU (Approval no. H8265).

If you have any questions regarding the study, please contact **Mrs Swapna Chaudhary** or **Professor Beverley Glass.**

Principal Investigator: Mrs Swapna Chaudhary
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Supervisor: Professor Beverley Glass
College of Medicine and Dentistry
James Cook University
Phone:
Email: beverley.glass@jcu.edu.au

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 I - Pre-test Post-test Tool

Supplementary Material 1: Pre-test and post-test survey

Pre-test Post-test Tool

2. Which of the following statements correctly define the term transgender?
    a. A person whose gender identity is not consistent with the sex assigned at birth.
    b. A person who does not subscribe to conventional gender distinctions.
    c. A person who feels romantic and/or sexual attraction to both sexes.
    d. A person who feels romantic and/or sexual attraction towards people of the opposite sex.

3. Which of the following statements describe gender identity?
    a. Gender identity refers to a pattern of romantic and/or sexual emotional attraction toward others.
    b. Gender identity is the inner sense of feeling like a man, a woman, another gender, or no gender.
    c. Gender identity is how an individual presents himself through his behaviour, mannerism, speaking pattern, clothing, and hairstyle.
    d. Gender identity is defined by the sexual behaviour of the person.

4. A person who identifies as a man, but was assigned female sex at birth, is recognized as-
    a. Transgender woman
    b. Gender queer
    c. Cisgender man
    d. Transgender man

5. A person who identifies as a woman, but was assigned male sex at birth, is recognized as-
    a. Transgender woman
    b. Cisgender woman
    c. Transgender man
    d. Gender queer

6. Which of the following alternatives represent how transgender person can express their gender identity?

    a. Makeup

    b. Hormone replacement therapy

    c. Manner of speaking

    d. All of above

7. AA is a transgender person who visits the pharmacy. They tell you that they have been using self-administering hormones for a year now that they get with the help of their friend. AA says that they feel fine but visiting the pharmacy because their friend had a “bad heart” and worried that the same would happen to them.

The actions you would take as a pharmacist with AA are:

    a. Ask AA about the barriers they have encountered to using hormones under medical supervision and refer them to medical care for gender affirmation.

    b. Tell AA that since they are using hormones, they are also going to suffer from a cardiovascular condition and the only way to avoid this is to discontinue the hormonal treatment.

    c. Recommend AA that they should continue to administer hormones without any medical supervision, as this will not affect their health.

    d. Tell AA not to be scared and ask them to take 100 mg of aspirin daily to avoid cardiovascular complications.

8. How can pharmacists create an inclusive environment for transgender patients?

    a. Train a culturally competent care pharmacy employee and direct all transgender patients to them.

    b. Avoid asking personal questions that are not relevant to patient care.

    c. Do not ask questions regarding preferred names and pronouns to avoid embarrassing patients.

    d. Insist that all employees use or refer to the patient only by the name that appears on their identification care regardless of the patient’s preference.

9. Which of the following screening test should pharmacists recommend to transgender women?

    a. Cervical cancer

    b. Colon cancer

c. Prostate cancer

d. Liver cancer

10. Which of the following screening test should pharmacists recommend to transgender men?

    a. Prostate cancer

    b. Cervical cancer

    c. Colon cancer

    d. Lung cancer

11. Which of the following statements describes one of the disparities faced by the transgender population?

    a. Transgender people have a comprehensive support network.

    b. Transgender people report fewer chronic conditions such as asthma, headaches, allergies, osteoarthritis, and gastrointestinal problems, when compared to the cisgender population.

    c. A transgender person is twice as likely to have had a medical check-up in the last year compared to a cisgender person.

    d. Transgender people are less likely to have health insurance and to report their health need, when compared to the cisgender population.

12. Which of the following alternatives presents the correct order of steps in a transgender patient's gender transition process?

    a. Psychological evaluation, hormones, surgical gender affirmation

    b. Psychological evaluation, surgical gender affirmation, hormones

    c. Surgical gender affirmation, hormones, psychological evaluation

    d. According to the standards of care, each transgender person can be allowed to seek only those interventions with which they wish to affirm their own gender identity.

13. What is the benefit of starting puberty blockers before puberty?

    a. Reduces the probability of therapeutic failure of hormone replacement therapy.

    b. Prevents the development of characteristics that become permanent at the end of puberty.

    c. Hormone replacement therapy side effects increase after puberty.

d. It allows a transgender person to have a greater number of treatment alternatives.

14. How frequently should a transgender patient who started hormone replacement therapy be monitored in the first year of treatment?

    a. Every month

    b. Every 3 months for the first 6 months of the therapy, then every 6–12 months

    c. Every 8 to 12 months

    d. Every 2 years

15. Which of the following alternatives is important to discuss with the transgender person before starting hormone replacement therapy?

    a. Discuss if they have a plan to start a family in future and offer available alternatives

    b. Discuss the impact of hormonal treatment on fertility

    c. Discuss if they have considered how their hormonal treatment would affect their family and work

    d. All of above

16. A patient wishing to start using gender-affirming hormone replacement therapy should have laboratory baseline results of:

    a. CBC with differential tuberculosis test and renal function

    b. Liver enzymes, glucose, TSH, and PSA

    c. Kidney function, glucose, HbA1C, lipids, and HIV test

    d. Liver enzymes, glucose, HbA1C, lipids, electrolytes, and kidney function

17. According to current pharmacy practices in Australia, which therapy is NOT suitable for a transgender woman using hormonal therapy?

    a. Estradiol

    b. Ethinylestradiol

    c. 5-alpha-reductase inhibitor

    d. Appropriate gonadotropin-releasing hormone agonist

18. According to current practices in pharmaceutical care in Australia, appropriate therapy for transgender men includes the following option:

a. Intramuscular testosterone injection
b. Gonadotropin-releasing hormone agonist
c. Spironolactone
d. Finasteride

19. What product is preferred for a transgender woman at high risk for thromboembolic disease?
    a. Combined oral contraceptive pill
    b. Transdermal estradiol
    c. Intramuscular estradiol
    d. Estradiol vaginal

20. A common adverse effect of using estrogen therapy is:
    a. Weight loss
    b. Hypotension
    c. Fluid retention and bloating
    d. Acne

21. Among the effects related to the use of estrogen are:
    a. Increased libido and decreased size of the clitoris
    b. Vaginal atrophy
    c. Redistribution of body fat and growth of breast tissue
    d. Increased sperm production and reduced testicle size

22. Among the effects related to testosterone use are:
    a. Menstrual flow increases
    b. Reduction in the size of the testicles and decreased sperm production
    c. Dry skin, diminished clitoral size, reduction in body mass
    d. Change in voice, facial hair growth, vaginal atrophy

23. For estrogen treatment to be effective, the level of testosterone in the blood must be-
    a. <2nmol/L
    b. <85 nmol/L
    c. 20 ng/dl
    d. <20nmol/L

24. What laboratories results are affected by the current hormonal configuration (current gender expression) of a transgender person, who has used hormone replacement therapy for 2 years?
    a. Prostate Specific Antigen (PSA)
    b. Thyroid Stimulating Hormone (TSH)
    c. Creatinine clearance
    d. HbA1C

25. AM is a transgender man on testosterone therapy who comes to the pharmacy to pick up his medications. When dispensing the medications, the pharmacist realizes that one of them is a teratogenic medication. The pharmacist should think that:
    a. It is not necessary to make a consultation when dispensing a teratogenic drug to AM since he is unable to conceive children.
    b. Even if he is receiving testosterone therapy AM should receive a consultation regarding the risks of taking this medication and using appropriate contraception before receiving the teratogenic drug.
    c. AM cannot receive any teratogenic drug since it is contraindicated.
    d. AM does not need to use any contraceptive method since he is receiving hormonal replacement therapy with testosterone.

Additional questions in the post-test survey:

Demographic Questions:

1. What is your age?

a. 18-25 years

b. 26-35 years

c. 36-45 years

d. 45-55 years

e. 55 years and above

2. What is your gender?

a. Male

b. Female

c. Non-binary

c. Prefer to self-describe, _____

d. Prefer not to say

3. What did you like most about this training session?

_____
_____
_____

4. What did you least like about this training session?

_____
_____
_____

5. What would you like to add to this training session?

_____
_____
_____

6. Please indicate your level of agreement to the following statements.

Statement	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
This training will be beneficial to my future practice of providing care to transgender patients.	o	o	o	o	o
This training improved my confidence about my knowledge of pharmacotherapeutic treatments for gender transition.	o	o	o	o	o
I would recommend this training to other pharmacists and pharmacy students.	o	o	o	o	o

Appendix J - Author's Permission to use the pre-test post-test tool

This administrative form has been removed

Appendix K - Pharmacists: Post-training three-month evaluation tool

1. After receiving the training, to what extent has your practice of providing care to transgender patients changed or been affected? Please rate on a scale of 1-5, 1 being not changed at all and 5 being greatly changed.

2. Can you please describe in what way your practice has changed?

3. Are there any barriers to providing care to transgender patients? If yes, what are those issues?

4. What additional resources do you need to provide better care to transgender patients?

5. Is there anything that you would like to add to future training sessions on transgender healthcare for pharmacists?

Thank you for your time!

Appendix L - Human Research Ethics Committee Approval

This administrative form
has been removed

Appendix M - TGD People Interview Guide

1. I am really interested in your perspective of accessing care from a pharmacy. Tell me about your experiences of visiting a pharmacy?

2. Can you recall some interactions you had with pharmacy staff?

- Pharmacists
- Pharmacy technicians
- Pharmacy assistants

3. Can you tell me about the aspects of interactions that make you reluctant to access care from a pharmacy?

4. What makes for a positive interaction with the pharmacy staff?

5. Can you describe your expectations from pharmacists providing healthcare to you?

6. Can you describe your expectations from the pharmacy staff providing healthcare to you?

7. Is there anything more you would like to share with me about your experience of accessing care from a pharmacy?

Appendix N - SRQR Checklist for TGD People Interview Study

Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

Title and abstract

	Page/line no(s).
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	Page 1
Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions	Page 1

Introduction

Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement	Page 2
Purpose or research question - Purpose of the study and specific objectives or questions	Page 2

Methods

Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	Page 2-3
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	Page 4
Context - Setting/site and salient contextual factors; rationale**	Page 2-4

Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	Page 2-4
Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	Page 5
Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	Page 2-5
Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	Page 5
Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	Page 5-6
Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	Page 4-5
Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	Page 3-4
Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	Page 3-4

Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	Page 5-13
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Page 6-13

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	Page 13-15
Limitations - Trustworthiness and limitations of findings	Page 15

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	Page 16
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	Page 16

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. Academic Medicine, Vol. 89, No. 9 / Sept 2014

DOI: 10.1097/ACM.0000000000000388

Appendix O - Pharmacist Interview Guide

1. Could you describe a typical day at your workplace, including the types of patients you provide services to?

2. I would like you to tell me about your experience providing care to transgender people in your pharmacy. (If you have not yet come across any transgender individual, can you describe the ways in which you might interact when interacting with transgender people in a pharmacy setting?)

3. In your interactions (or perceived interactions) with transgender people, tell me what you found most challenging for you.

4. Tell me how we can overcome the challenges of providing healthcare to transgender people in a pharmacy environment.

5. Could you describe what you felt (might feel) comfortable and rewarding about this interaction?

6. Tell me about anything that would further equip you to provide care to transgender people.

7. Is there anything further you want to add to this interview?

Appendix P - SRQR Pharmacist Interview Study

Standards for Reporting Qualitative Research (SRQR)*

http://www.equator-network.org/reporting-guidelines/srqr/

Title and abstract

	Page/line no(s).
Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended	Page 1
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Purpose or research question - Purpose of the study and specific objectives or questions	Page 3

Methods

Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**	Page 3
Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability	Page 3-4
Context - Setting/site and salient contextual factors; rationale**	Page 4

Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**	Page 4
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Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**	Page 4-5
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Results/findings

Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	Page 5-11
Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Page 9-11

Discussion

Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	Page 11-13
Limitations - Trustworthiness and limitations of findings	Page 13

Other

Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	Page 14
Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	Page 14

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

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DOI: 10.1097/ACM.0000000000000388

Appendix Q - Pharmacist National Survey Questionnaire

Terminology used in the survey.

Transgender- A person who identifies with a different gender to their sex assigned at birth.

Cisgender - A person who identifies with the same gender as their sex assigned at birth.

1. Are you a registered pharmacist currently practising in Australia?
    - Yes
    - No (*will exit the participant from the survey*)

Part A: Attitudes and practices in transgender healthcare

2. Do you currently provide healthcare services to transgender patients?
    - Yes
    - No

3. How many transgender patients do you see in your principal place of practice over a period of a month?
    - None
    - 1-5
    - 6-10
    - More than 10

4. How many transgender patients do you see in your principal place of practice over a period of 6 months?
    - None
    - 1-5
    - 6-10
    - More than 10

5. Do your pharmacy's electronic prescription records have an option to record both biological sex and affirmed gender of the patient?
    - Yes
    - No
    - Unsure

6. If the person identifies as transgender, do you ask for their preferred name?
    - Always
    - Often
    - Sometimes
    - Rarely
    - Never

7. If the person identifies as a transgender person, do you ask for their preferred pronouns?
    - Always
    - Often
    - Sometimes

- o Rarely
- o Never

8. Do you have any comments relating to use of preferred names and pronouns? Please write below.

_____
_____
_____

9. Have you ever been in a situation where you were unable to supply medication or service to a transgender person?
   - o Yes
     If yes, please indicate if any of the reasons below apply.
     - o Unavailability of the medication stock
     - o Unfamiliar with the patient request
     - o I could not provide the medication or service due to my religious beliefs.
     - o Other
       Please list_____
   - o No
   - o Prefer not to answer.

10. How comfortable are you in providing healthcare services to transgender patients?
    - o Extremely comfortable
    - o Very comfortable
    - o Moderately comfortable
    - o Slightly comfortable
    - o Not at all comfortable

11. How confident are you in providing health care to a transgender person?
    - o Extremely confident
    - o Very confident
    - o Moderately confident
    - o Slightly confident
    - o Not at all confident

12. Please indicate your level of agreement with the following statements.

	Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
I am unwilling to provide hormonal medications to transgender patients due to my religious beliefs.	o	o	o	o	o
I am unwilling to provide services to transgender patients due to my religious beliefs.	o	o	o	o	o
Pharmacists have an important role in the provision of care to transgender patients.	o	o	o	o	o
I feel confident about my knowledge of pharmacotherapeutic treatments for gender transition.	o	o	o	o	o

I can provide culturally sensitive care to transgender patients.	o	o	o	o	o
While counselling on a hormonal medication, I counsel a transgender person with the same comfort level as I counsel a cisgender person.	o	o	o	o	o

13. Please indicate your level of agreement to each of the main barriers to the provision of culturally competent healthcare to transgender patients in community pharmacy.

Barrier to the provision of transgender care in pharmacy settings	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
Inability to establish a trusted relationship with a transgender patient	o	o	o	o	o
Lack of privacy of patient consultation	o	o	o	o	o
No or inadequate staff training in transgender healthcare	o	o	o	o	o
Time constraint	o	o	o	o	o
Lack of transgender healthcare training resources	o	o	o	o	o
Reluctance of staff to treat or engage with transgender patients	o	o	o	o	o
Stigma towards transgender patients	o	o	o	o	o

Part B: Education in transgender healthcare

14. Did your degree for registration as a pharmacist include a transgender care component?
    - o Yes
    - o No
    - o Unsure

15. Have you received any transgender healthcare training over the past five years?
    - o Yes
      Please specify_____
    - o No

16. Please indicate your level of agreement to the following statements.

	Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
I am familiar with transgender health care resources.	o	o	o	o	o
I am aware of local transgender healthcare services.	o	o	o	o	o
I am aware of local transgender healthcare support groups.	o	o	o	o	o
My pharmacy staff are adequately trained to provide culturally sensitive care to transgender patients.	o	o	o	o	o
Pharmacists require more training in transgender health.	o	o	o	o	o

Transgender healthcare training should be included in the pre-registration pharmacy curriculum.	o	o	o	o	o
Transgender healthcare training should be provided as continuing professional education (CPE).	o	o	o	o	o
My pharmacy staff require training for the provision of culturally appropriate care to transgender patients.	o	o	o	o	o

17. Which delivery method for continuing professional education (CPE) training in transgender care would you prefer? Please rate the following options for the delivery of CPE training on a scale of 1-5, 1 being most preferred and 5 being least preferred.

Type of continuing professional education (CPE) training	**1 (Most preferred)**	**2**	**3**	**4**	**5 (Least preferred)**
Face-to-face training	o	o	o	o	o
Journal articles	o	o	o	o	o
Online modules	o	o	o	o	o
Webinar	o	o	o	o	o
Written modules in a booklet form	o	o	o	o	o
Panel discussion with transgender patients	o	o	o	o	o
Panel discussion with experts in transgender healthcare such as endocrinologists	o	o	o	o	o

18. Which topics from the following list would you prefer to be covered in the continuing professional education (CPE) training in transgender healthcare? Please rate the following options for the topics to be included in the CPE training on a scale of 1-5, 1 being most preferred and 5 being least preferred.

Education topic	**1 (Most preferred)**	**2**	**3**	**4**	**5 (Least preferred)**
Gender terminology and provision of culturally sensitive care to transgender patients	o	o	o	o	o
Healthcare challenges of transgender patients	o	o	o	o	o
Gender transition treatments for transgender adults	o	o	o	o	o
Gender transition treatments for transgender children and adolescents	o	o	o	o	o
Contraception methods for transgender patients and pharmacists' role in the provision of emergency contraception	o	o	o	o	o
Patient counselling tools and resources	o	o	o	o	o
Fertility advice: Fertility preservation and reproductive options for transgender patients	o	o	o	o	o

Advising transgender patients about the safe binding and tucking practices	o	o	o	o	o

19. Please list any other topics you would like to be covered in the continuing professional education (CPE) training in transgender healthcare.
    _____
    _____
    _____

20. Is there anything further you would like to share that might be relevant to the provision of transgender care in pharmacies?
    _____
    _____
    _____

Part C: Demographics

21. In which state or territory do you practice?
    _____

22. What is your age?
    - o 21-30 years
    - o 31-40 years
    - o 41-50 years
    - o 51-65 years
    - o 65 years and above

23. Which of the following best describes your gender?
    - o Female
    - o Male
    - o Prefer not to say.
    - o Prefer to self-describe below.
      _____

24. Do you identify as a member of the LGBTQIA+ community?
    - o Yes
    - o No
    - o Prefer not to say.

25. How long have you been working as a pharmacist?
    - o 0-5 years
    - o 6-10 years
    - o 11-15 years

- 15-20 years
- More than 20 years

26. Which best describes your principal place of practice?
    - Academia
    - Community pharmacy
    - General practice clinic
    - Hospital pharmacy
    - Other
      Please specify_____

27. Are you an accredited pharmacist?
    - Yes
    - No

28. What is the postcode where you practice?
    _____

29. Do you have a post-registration (post-graduate) qualification?
    - Yes (*If Yes, the participant will be directed to question 30*)
    - No

30. What is your post-registration (post-graduate) qualification?
    - Master of Clinical Pharmacy
    - Master of Pharmacy (Research)
    - Master of Philosophy (MPhil)
    - Doctor of Philosophy (PhD)
    - Other
      Please specify_____

Thank you for your time!

A new link will open by clicking the "Exit Survey" button to enable you to register your expression of interest in future training opportunity in transgender healthcare.

Separate Link: **Expression of Interest in Transgender Healthcare Training for Pharmacists**

Please provide your contact details below to participate in future training in transgender healthcare for pharmacists.

Full name _____

Email ID _____

Phone/Mobile number _____

Thank you for your time!

Appendix R - Checklist for Reporting Of Survey Studies (CROSS)

Checklist for Reporting Of Survey Studies (CROSS)

Section/topic	Item	Item description	Reported on page #
Title and abstract			
Title and abstract	1a	State the word "survey" along with a commonly used term in title or abstract to introduce the study's design.	1
	1b	Provide an informative summary in the abstract, covering background, objectives, methods, findings/results, interpretation/discussion, and conclusions.	1
Introduction			
Background	2	Provide a background about the rationale of study, what has been previously done, and why this survey is needed.	2
Purpose/aim	3	Identify specific purposes, aims, goals, or objectives of the study.	2
Methods			
Study design	4	Specify the study design in the methods section with a commonly used term (e.g., cross-sectional or longitudinal).	2
Data collection methods	5a	Describe the questionnaire (e.g., number of sections, number of questions, number and names of instruments used).	3
	5b	Describe all questionnaire instruments that were used in the survey to measure particular concepts. Report target population, reported validity and reliability information, scoring/classification procedure, and reference links (if any).	3
	5c	Provide information on pretesting of the questionnaire, if performed (in the article or in an online supplement). Report the method of pretesting, number of times questionnaire was pre-tested, number and demographics of participants used for	3

		pretesting, and the level of similarity of demographics between pre-testing participants and sample population.	
	5d	Questionnaire if possible, should be fully provided (in the article, or as appendices or as an online supplement).	Supplementary Material S1
Sample characteristics	6a	Describe the study population (i.e., background, locations, eligibility criteria for participant inclusion in survey, exclusion criteria).	2
	6b	Describe the sampling techniques used (e.g., single stage or multistage sampling, simple random sampling, stratified sampling, cluster sampling, convenience sampling). Specify the locations of sample participants whenever clustered sampling was applied.	2
	6c	Provide information on sample size, along with details of sample size calculation.	2
	6d	Describe how representative the sample is of the study population (or target population if possible), particularly for population-based surveys.	3
Survey administration	7a	Provide information on modes of questionnaire administration, including the type and number of contacts, the location where the survey was conducted (e.g., outpatient room or by use of online tools, such as SurveyMonkey).	2
	7b	Provide information of survey's time frame, such as periods of recruitment, exposure, and follow-up days.	3
	7c	Provide information on the entry process: –>For non-web-based surveys, provide approaches to minimize human error in data entry. –>For web-based surveys, provide approaches to prevent "multiple participation" of participants.	3

Study preparation	8	Describe any preparation process before conducting the survey (e.g., interviewers' training process, advertising the survey).	2
Ethical considerations	9a	Provide information on ethical approval for the survey if obtained, including informed consent, institutional review board [IRB] approval, Helsinki declaration, and good clinical practice [GCP] declaration (as appropriate).	3
	9b	Provide information about survey anonymity and confidentiality and describe what mechanisms were used to protect unauthorized access.	3
Statistical analysis	10a	Describe statistical methods and analytical approach. Report the statistical software that was used for data analysis.	3
	10b	Report any modification of variables used in the analysis, along with reference (if available).	n/a
	10c	Report details about how missing data was handled. Include rate of missing items, missing data mechanism (i.e., missing completely at random [MCAR], missing at random [MAR] or missing not at random [MNAR]) and methods used to deal with missing data (e.g., multiple imputation).	n/a
	10d	State how non-response error was addressed.	n/a
	10e	For longitudinal surveys, state how loss to follow-up was addressed.	n/a
	10f	Indicate whether any methods such as weighting of items or propensity scores have been used to adjust for non-representativeness of the sample.	n/a
	10g	Describe any sensitivity analysis conducted.	n/a
Results			
Respondent characteristics	11a	Report numbers of individuals at each stage of the study. Consider using a flow diagram, if possible.	3

	11b	Provide reasons for non-participation at each stage, if possible.	5-6
	11c	Report response rate, present the definition of response rate or the formula used to calculate response rate.	2
	11d	Provide information to define how unique visitors are determined. Report number of unique visitors along with relevant proportions (e.g., view proportion, participation proportion, completion proportion).	n/a
Descriptive results	12	Provide characteristics of study participants, as well as information on potential confounders and assessed outcomes.	3-4
Main findings	13a	Give unadjusted estimates and, if applicable, confounder-adjusted estimates along with 95% confidence intervals and p-values.	2-4
	13b	For multivariable analysis, provide information on the model building process, model fit statistics, and model assumptions (as appropriate).	n/a
	13c	Provide details about any sensitivity analysis performed. If there are considerable amount of missing data, report sensitivity analyses comparing the results of complete cases with that of the imputed dataset (if possible).	n/a
Discussion			
Limitations	14	Discuss the limitations of the study, considering sources of potential biases and imprecisions, such as non-representativeness of sample, study design, important uncontrolled confounders.	5-6
Interpretations	15	Give a cautious overall interpretation of results, based on potential biases and imprecisions and suggest areas for future research.	4-6
Generalizability	16	Discuss the external validity of the results.	3
Other sections			

Role of funding source	17	State whether any funding organization has had any roles in the survey's design, implementation, and analysis.	Title page
Conflict of interest	18	Declare any potential conflict of interest.	Title page
Acknowledgements	19	Provide names of organizations/persons that are acknowledged along with their contribution to the research.	Title page

Appendix S - Application of Knowles six principles to the design of the program.

1. **Adults are self-directed:** Adult learners favour taking responsibility for their learning.[27] Therefore, it was essential to design a learning program that respects their autonomy and provides an opportunity to complete the modules in the participant's own time.

2. **Experience:** Adults use their experiences to shape their learning.[27] Pharmacists have extensive experience in providing care to various clients in the pharmacy. Drawing on these experiences provided a foundation for new learning about TGD healthcare and enhanced their understanding of new content by establishing links to their previous knowledge and experience.

3. **Readiness to learn**: Adult learners learn when they are ready to learn and when the learning benefits their personal or professional goals.[27] The earlier research indicated that most pharmacists desired to improve their practice of providing care to TGD people.[6,7] Capitalizing on readiness enabled pharmacists to learn from theory as well as practical strategies to improve their competence in TGD healthcare.

4. **Problem-centred orientation:** Adult learners want to see if the new learning can resolve their current problems.[27] This program design Including communication strategies, TGD healthcare knowledge, and day-to-day pharmacy practice scenarios enabled participants to immediately implement changes to their practice.

5. **Motivation to learn:** For adult learners, intrinsic motivators such as improved self-esteem, job satisfaction, confidence and personal growth may play vital role in motivating them to learn new things.[27] Participation in the program was voluntary relying on the participant's internal motivation to participate and complete the program. The participants received a certificate on completing the program and could count the program hours (up to eight hours) towards their continuing professional education (CPE) points, providing additional external motivation to complete this program.

6. **The need to know**: Adults actively engage in training programs that they perceive relevant to their practice.[27] The needs analysis showed that the pharmacist participants in this program envisaged that learning new concepts and strategies in TGD care would be relevant to their current practice.[6,7]