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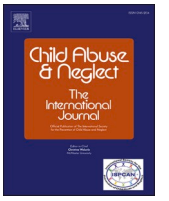

Improving sport opportunities, participation, and experiences for children in out-of-home care: A mixed-methods study

Aaron Simpson [a,b,*], Timothy Budden [b,h], Claire Willis [a,b], James Dimmock [b,c], Ashleigh Lin [d], Ashleigh L. Thornton [b,e,f], Bonnie Furzer [a,b,g], Ivan Jeftic [a], Michael Rosenberg [a], Ben Jackson [a,b]

[a] School of Human Sciences (Exercise and Sport Science), The University of Western Australia, Perth, Australia
[b] The Kids Research Institute Australia, Perth, Australia
[c] Department of Psychology, College of Healthcare Science, James Cook University, Townsville, Australia
[d] School of Population and Global Health, The University of Western Australia, Perth, Australia
[e] Division of Paediatrics, School of Medicine, The University of Western Australia, Perth, Australia
[f] Kids Rehab WA, Perth Children's Hospital, Perth, Australia
[g] Thriving in Motion, Perth, Australia
[h] Central Queensland University, Rockhampton, Australia

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ABSTRACT

Background: Participation in sport is associated with a range of physical, psychological, and social benefits. However, children in out-of-home care face complex barriers to sport participation, with lower participation rates than children in other household arrangements.
Objective: We aimed to establish carers' recommendations for improving children in care's participation and experiences in sport.
Participants and setting: Overall, 42 foster and kinship carers in Western Australia participated in the study. Data were collected via online surveys and interviews.
Methods: We conducted a sequential explanatory mixed-methods study, utilising both quantitative and qualitative methods.
Results: Analyses revealed three key recommendations—with accompanying implementation strategies—for policymakers, researchers, peak sporting bodies, and sporting organisations: (1) inclusive practices should be embedded in existing sport programs; (2) education for sport program providers should be developed; and (3) support for carers to facilitate sport participation for children in care should be provided.
Conclusions: This work provides guidance for increasing participation in sport for children in care, and maximising opportunities for physical, psychological, and social development.

1. Introduction

Children with history of adverse childhood experiences (ACEs) are at higher risk of developing mental and physical health issues at all stages in life (Kessler et al., 2010; Petruccelli et al., 2019; Sahle et al., 2021). Examples of ACEs include household violence,

* Corresponding author at: School of Human Sciences, University of Western Australia (M408), 35 Stirling Highway, Crawley, Western Australia 6009, Australia.
E-mail address: Aaron.Simpson@uwa.edu.au (A. Simpson).

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neighbourhood violence, household incarceration, and household substance abuse (Crouch et al., 2019)—both the amount and type of ACE are associated with negative outcomes (Briggs et al., 2021; Petruccelli et al., 2019). Children in out-of-home care (commonly also referred to as children in 'foster care' or 'care') often have higher exposure to adverse childhood experiences compared to the general population (Salazar et al., 2013; Turney & Wildeman, 2017). In a similar vein, the prevalence of trauma—often framed as an adverse experience (e.g., abuse, neglect) and the resulting dysregulation in functioning—is high among children in care (Greeson et al., 2011). In line with this evidence, children in care face increased risk of a range of behavioural problems, mental health disorders, and physical health issues (Engler et al., 2022; Seker et al., 2022; Turney & Wildeman, 2016).

The physical and mental health benefits of physical activity across the lifespan are well-established (Bull et al., 2020; Posadzki et al., 2020). For many, sport is a popular method of engaging in physical activity, particularly among children and adolescents (Hulteen et al., 2017). To illustrate, 74% of Australian children aged 14 or under participate in organised sport at least once yearly (Australian Sports Commission, 2023). There is vast evidence supporting the notion that children who participate in sport experience psychological, social, and physical health benefits (e.g., self-esteem, social interaction, fewer depressive symptoms; Eime et al., 2013). Additionally, there is growing evidence that 'at-risk' or 'vulnerable' children from complex backgrounds (such as children in care) benefit from participating in sport programs (Hermens et al., 2017; Simpson et al., 2024). For example, participation in sport is linked with greater wellbeing, social life skills, and psychosocial adjustment for at-risk children (Filges et al., 2024; Hermens et al., 2017; Super et al., 2018). It has been proposed that the positive benefits of sport for at-risk children may derive from (among other mechanisms) social connectedness, mentorship from coaches, and goal-setting and conflict resolution (Appelqvist-Schmidlechner et al., 2023; Hermens et al., 2017). However, limited review evidence is available for the impact of sport programs for children in out-of-home care. Further, despite scientific evidence for the potential benefits of sport participation, children in care appear to participate in sport at lower rates than children from other households (Heath et al., 2023). This participation deficit may stem from a complex combination of barriers such as instability brought about by the transient nature of out-of-home care, the ongoing effects of trauma, and external governing processes (Quarmby & Pickering, 2016; Sandford et al., 2021). In recent work by Green et al. (2021), carers also expressed concerns about a lack of guidelines or expectations for providing children in their care with sport and physical activity opportunities, reflecting the need for prioritising healthy and active lifestyle development within out-of-home care policy. Given the potential benefits of sport participation for children in care (and the barriers described above), it is important that efforts are made to increase children in care's access to, and inclusion in, sporting opportunities.

There is a lack of understanding about elements that improve the likelihood of successful engagement of children in care in sport (beyond research exploring barriers to participation; e.g., Quarmby & Pickering, 2016). Quarmby and Pickering's (2016) work, however, is focused primarily on *physical activity* (as is a review by Wilson & Barnett, 2020, on intervention effectiveness), making it difficult to ascertain specific components of *sport* program design that facilitate greater participation and outcomes for children in care. Some programs, for instance, include specific therapeutic curricula (e.g., D'Andrea et al., 2013), while others include group discussions and reflections (e.g., Pereira et al., 2020). Ultimately, the elements leading to successful (i.e., engaging and effective) interventions are not yet clear. It is clear, however, that researchers and those involved in designing and delivering sport programs are poorly equipped in terms of understanding program characteristics that are conducive to supporting children in care's participation. To address this issue, it is important to seek the viewpoints of those directly involved in children in care's participation in sport.

Participatory research is a broad approach wherein research is conducted *with* people with lived experiences, instead of *on* people with lived experiences (Mulvale et al., 2016). Involving community members (i.e., people who would directly engage with a program or service) in program or service design (often referred to as 'co-design') offers a range of benefits, including improved acceptability, greater alignment of service design with community needs, improved program outcomes, and establishment of connections between researchers and the community (Slattery et al., 2020; Steen et al., 2011). In particular, involving marginalised members of the community may provide a safe space for their voice to be heard and a sense of empowerment (Mullins et al., 2021; Mulvale et al., 2019; Röger-Offergeld et al., 2023). Marginalisation, specifically due to the unique challenges of being a carer, is an experience often reported by carers (Blythe et al., 2012). There is extensive knowledge about the vulnerability of children in care (e.g., Goemans et al., 2016); however, carers—tasked with providing stability and warmth to vulnerable children in care—can struggle with their sense of self (Donachy, 2017) and have frustrations with not feeling 'heard' regarding their children in care's needs (York & Jones, 2017). Researchers have emphasised the need for further consideration of stakeholders' perspectives on facilitating children in care's engagements with sport, particularly in light of the many barriers impacting children in care's participation (Sandford et al., 2021). Additionally, carers play an important practical role in facilitating sport participation for children in care (e.g., managing administrative processes, transportation; Green et al., 2021). It is critical, therefore, that carers are given agency to direct discussions on solutions to improving children in care's access to sporting opportunities, and to increase the likelihood of positive outcomes.

In previous work, researchers have investigated (a) the impact of physical activity interventions on children in care (e.g., Wilson & Barnett, 2020); (b) the barriers to (and rates of) sport participation among children in care (e.g., Heath et al., 2023; Quarmby & Pickering, 2016); and (c) the experiences of children in care in sport (e.g., Quarmby et al., 2021). However, there remains a lack of research directly focused on *how* to enhance children in care's sport participation and experiences. Therefore, in this study, we sought to engage with carers to explore characteristics, strategies, and considerations for the design and delivery of programs to improve children in care's participation and experiences in sport. By 'sport programs', we refer to any *existing or desired* structured opportunity to engage in sport outside of school—including, but not limited to, organised sport clubs, targeted sport interventions, and social groups where sport is the primary activity. We did not include school sports (e.g. physical education) as a focus of our research as there are challenges specific to that domain that extend beyond the scope of this work (Quarmby et al., 2019). For this work, we specifically wanted to closely examine carers' perspectives and recommendations for sport participation outside of school. We designed and conducted a sequential (i.e., consisting of multiple 'phases') mixed-methods study consistent with methodological guidelines

presented by Creswell and Creswell (2023). Our multi-phase project comprised both quantitative and qualitative methods, and, in line with reporting guidelines for mixed-methods research (Levitt et al., 2018), we present the aims for each of these phases as well as a broad study aim (i.e., a 'mixed-methods' aim) reflecting our integration of data derived from quantitative and qualitative analyses. First, with the quantitative component of our work, we aimed to gather carers' perspectives on various program characteristics in terms of their desirability and appropriateness within sport programs for children in care. Subsequently, with the qualitative component of our work, we aimed to explore in more detail carers' considerations regarding the design and delivery of sport programs for children in care. We also designed the qualitative component with the aim of probing for greater depth regarding quantitative responses, and to enable carers to elaborate on any ratings or recommendations. Throughout, we were focused on allowing carers to direct the focus of the research. As such, our overarching study aim was directed toward identifying recommendations—from carers' preferences and perspectives collected through quantitative and qualitative methods—for improving children in care's participation and experiences in sport.

2. Methods

2.1. Research design

We employed a sequential explanatory mixed-methods design (Creswell & Creswell, 2023), collecting data in two phases. The first phase involved collection of quantitative and qualitative data via an online survey, which informed our enquiry during interviews conducted in the second phase (see Data collection below for more detail). A mixed-methods approach was deemed most suitable in addressing our aims because we sought information that necessitated both quantitative (e.g., ratings and preferences for specific program characteristics) and qualitative (e.g., insight into *why* specific considerations must be made) methods. Mixed-methods approaches are common within participatory research as they allow for multiple perspectives to be integrated and account comprehensively for community members' needs. As alluded to above, our research was guided by participatory research principles (e.g., for example, cooperation and co-learning between partners, and an iterative process of engagement with community members; Eyles et al., 2016; Iniesto et al., 2022; Israel et al., 1998). This study is positioned within the early 'stages' of the co-design process (e.g., identifying the 'opportunity', and exploring needs and wishes; Bratteteig et al., 2012), and we worked closely with carers and stakeholders from organisations within the out-of-home care system in the planning and data collection elements of the study. Stakeholders involved in the planning and delivery of this study included operational (e.g., project managers), service delivery (e.g., social workers), and executive (e.g., directors) staff working in care agencies, advocacy organisations, and Government departments that directly engage with carers and children in out-of-home care. In engaging with carers and stakeholders, we intended to assess the needs of carers with respect to their children in care's participation in sport and engage in discussion with carers on solutions to address those needs. Our philosophical approach to this study was guided by a pragmatist paradigm, prioritising shared meaning-making and focusing on the usefulness of the outcomes of our research (Johnson & Onwuegbuzie, 2004; Shannon-Baker, 2016). Decisions on research methods were primarily informed by our research aims and the pursuit of practical, applicable solutions (Shannon-Baker,

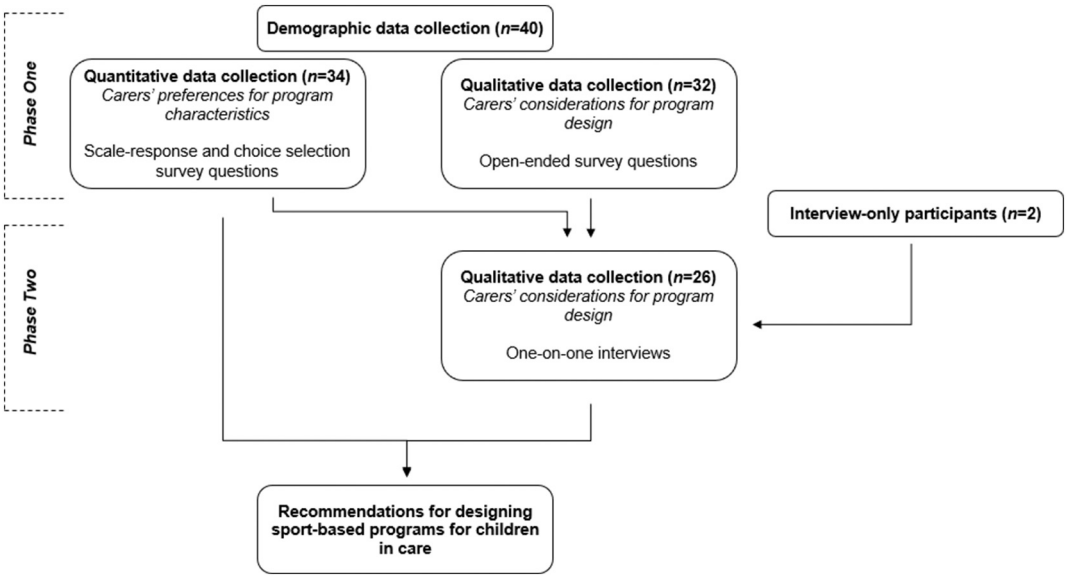

Fig. 1. Flow diagram of study design and data collection processes.
Note. The *n* for each data collection method were recruited from the initial pool of 40 participants who provided demographic information (except for two participants in phase two, who did not participate in phase one and did not provide demographic information). Therefore, there were 42 individual participants who took part in some aspect of the study.

2016). Ethical approval was granted by the Human Research Ethics Committee at the lead author's institution, and the Government department responsible for overseeing out-of-home care in Western Australia. The Western Australian Aboriginal Health Ethics Committee was also consulted.

2.2. Participants

Participants were foster or kinship carers of a child aged at least 7 years old (with any care arrangement; e.g., permanent care, emergency care) in Western Australia. Participants were recruited through paid social media advertisements and a promotional flyer distributed through email networks of organisations in the out-of-home care sector (e.g., the Government department that oversees out-of-home care, and agencies that support the management of out-of-home care placements). Further, we asked participants to forward information about the study to other carers. Prospective participants were provided with an online information sheet and gave informed consent prior to participating in the study. Participants had the choice of participating in both (or either) the survey and the interview stages of the research. Overall, our sample consisted of 42 individuals (40 at least partially completed the survey, and 26 completed an interview; see Fig. 1 below). Two participants were involved in the interview phase of the study without completing the survey. Participants in the survey were entered into a prize draw for an iPad and were given a $30 gift card for completing an interview.

2.3. Data collection

Data were collected between July 2022 and September 2023. A visual presentation of these phases is available in Fig. 1.

2.3.1. Phase one

In phase one, we distributed an online survey with items that elicited both quantitative and qualitative data. The survey was co-designed and piloted with carers through a community network at the lead author's institution. This survey design process involved the researchers generating initial questions and topics of interests (e.g., characteristics of sport programs derived from existing literature), receiving feedback and suggestions from carers, and having a discussion of further modifications and considerations. The final version of the survey was provided to a foster carer for review prior to being used in the study. The purpose of the *quantitative component* of the survey was, in line with our first research question, to understand carers' preferences for program characteristics in the design of a sport program for children in care. We asked carers to complete scale-response questions, such as "Please select below whether you feel the following statements about a sport program are true for your foster child", scored on a scale anchored at one (*strongly disagree*) and five (*strongly agree*). Participants were also asked choice selection questions, such as "Please tick any of the following program 'labels' that might deter you from participating in the program". A secondary purpose of the quantitative items was to inform questioning in the interview phase of the study (i.e., phase two), by providing the research team with insight into preferences for program characteristics that may necessitate further discussion. The open-ended questions in the survey, which elicited *qualitative data*, enabled participants to provide additional context regarding program perceptions and allowed for initial insight into carers' considerations for the design of a sport program for children in care. The survey also contained items that provided demographic information, including carer age, number of children in care, type of care arrangement, years of caring experience, socioeconomic status, characteristics of child in care (including symptoms of psychosocial problems according to the Pediatric Symptom Checklist-17 [PSC-17]; Gardner et al., 1999), sport participation of child in care, and carer involvement in child in care's sport participation. We also collected carer-reported information about children in care's past experiences with mental health services (e.g., history of accessing mental health support) and sport (e.g., issues faced in sport), available for the interested reader in Supplementary material 1. We present these items as Supplementary Material (instead of in our primary analyses) because they were outside of the aim of the quantitative portion of the study, which was to understand carers' preferences for sport program design. However, we recognise the potential influence of carers' perspectives of past experiences on their considerations for future program design. Subsequently, although not directly considered as the primary foci of the study, these data featured within interview discussions with carers (e.g., in discussing how a sport program may be designed to foster a safe environment, some carers drew upon their children's experiences with bullying). For a more in-depth exploration of carers' perspectives on their children in care's experiences in sport, see Simpson et al. (2025). When answering questions relating to their children in care (e.g., PSC-17), we asked carers with more than one child to consider the child they believed would "most benefit" from improved opportunities to participate in sport.

2.3.2. Phase two

Phase two consisted of *interviews* with carers, with the intention of further exploring carers' considerations for the design of a sport program. Interviews were segmented into two sections, with different foci of conversation. Data collected in the first section of the interview were focused on addressing the aims for a separate study on carers' perspectives of their (and their children in care's) *past* experiences with sport for this population. Data collected in the second section of the interview were relevant for the present study. We adopted a reflexive approach to our qualitative data collection, allowing for critical reflection on the influence of the researcher in co-creating knowledge (Braun & Clarke, 2022; Finlay & Gough, 2003). Therefore, we highlight important characteristics of this research (and researchers) below which may influence co-constructed knowledge. The study was conducted in Western Australia, and all participants and researchers were English speakers. The interviewer (AS) was 23-24 years old at the time of the interview and is a male of 'Western' descent. The interviewer was not a carer or parent and was younger than all participants—expressing issues regarding caring for children to someone who has no shared experience may have impacted the information participants were willing to divulge.

However, it can also be argued that a researcher's lack of shared experience with participants may have (a) empowered carers to take on an 'expert' position, and (b) allowed for fresh perspective in discussions with carers (Berger, 2015). Throughout data collection and analyses, we engaged in a process of critical reflexivity; reflecting on the influence of the research team, and our beliefs, assumptions, and experiences, on the co-construction of knowledge in this work.

A semi-structured interview guide was developed, allowing for flexibility in discussions between researcher and participants (Sparkes & Smith, 2013). This allowed for specific enquiry into findings derived from the first phase (e.g., aggregated survey responses). We developed questions exploring preferred program characteristics (e.g., "What is it about [chosen sports] that is most appealing to you for the program?"), and important considerations for program design (e.g., "Is there anything that would make you not want to participate in the program?"). In discussing carers' perspectives on the design of sport programs, no restrictions were placed on the characteristics of a program. For example, carers were free to refer to sport programs that were discrete events, or continuous, repeated (e.g., weekly) commitments. Aligned with our definition of a sport program for the purpose of this study (see above), we focused discussions on considerations for programs that focused primarily on the delivery of sport. Participants were given the opportunity to complete the interview in-person, over the phone ($n = 7$), or on Microsoft Teams ($n = 19$). Decisions relating to terminating data collection were guided by pragmatic considerations (e.g., time and resource constraints) and through critical discussion, instead of seeking 'objective' data saturation (which is not theoretically aligned with interpretivism; Braun & Clarke, 2021). We aimed to collect sufficient data to address the research question and construct a comprehensive presentation of information, and this consideration informed our decision regarding when to cease data collection.

2.4. Data analysis

We conducted data analyses for each 'data source' separately and sequentially (i.e., quantitative survey data, followed by qualitative survey data, followed by qualitative interview data). Four steps were involved in our analyses, and all analyses of quantitative data were performed in IBM SPSS Statistics 29. First, we analysed frequency and descriptive data for scale-response items in the survey to identify the program characteristics that the sample of carers indicated were most (or least) important. These characteristics were then ranked and graphed on horizontal stacked bar charts. Descriptive and frequency analyses were also conducted for other quantitative items in the survey, including demographic and sport participation data. We do not report measures of central tendency for results from Likert scale items (i.e., preferred program characteristics), as they do not provide meaningful information in regard to the data (in addition, frequencies of different responses were more appropriate; Sullivan & Artino Jr, 2013).

In the second (analysing qualitative text data from the survey) and third (analysing interview data) stages of our analyses, we adopted an inductive (i.e., on the basis of insight, not theory) reflexive thematic analysis approach (Braun & Clarke, 2022). We describe our analysis process for these sources of data in unison, but it is important to reiterate that these analyses were conducted in separate stages. Additionally, our analyses for the qualitative survey data were conducted question-by-question, whereas interview data were analysed as a whole, by participant. All interviews were audio-recorded and transcribed verbatim. Interview transcripts and text responses from the survey were imported into QSR International NVivo software. Our reflexive thematic analysis approach broadly reflected the following six steps: (1) familiarisation with data, including reading transcripts (or text responses); (2) developing

Table 1
Demographic characteristics of participants.

Characteristic	Number of participants (% of total)
Gender ($n = 40$)	
Male	2 (5%)
Female	38 (95%)
Number of children in care ($n = 38$)	
One	11 (29%)
More than one	27 (71%)
Type of care provided ($n = 39$)	
Respite/short-term foster	2 (5%)
Long-term foster	33 (85%)
Kinship	1 (3%)
Other	3 (8%)
Years experience as a carer ($n = 39$)	
1-5	11 (28%)
6-10	17 (44%)
11-15	7 (18%)
16-20	4 (10%)
Socioeconomic index quintile* ($n = 39$)	
1 (most disadvantaged)	3 (8%)
2	6 (15%)
3	8 (20%)
4	7 (18%)
5 (most advantaged)	15 (38%)

Note. * = Socioeconomic status of the postcode of the carers' household was derived from the Index of Relative Socio-economic Advantage and Disadvantage (Australian Bureau of Statistics, 2021).

initial codes; (3) integrating initial codes within a preliminary theme framework; (4) reviewing individual themes and theme framework through a series of 'critical friends' discussions among co-authors (Smith & McGannon, 2018); (5) refining, defining, and naming themes; (6) writing the report (Braun et al., 2016; Braun & Clarke, 2006, 2022). In line with the cyclical and non-sequential nature of reflexive thematic analysis, various steps of the above process were revisited and repeated. The initial coding and organising of data were conducted by the lead author, and the latter stages of analyses (stages four to six above) were carried out collaboratively among the research team. The 'critical friends' meetings involved conversations among co-authors wherein different perspectives and interpretations of data were explored and challenged, and the theme structure was modified (Smith & McGannon, 2018). We held three formal critical friends meetings, in addition to frequent informal discussions between authors on various aspects of the analyses. The final step above, writing, forms part of the analytic process and occurs throughout analyses. We attempt to capture this through presentation of a coherent story pertaining to carers' considerations in the design of a sport program for children in care.

In the fourth (and final) stage of our analyses, we integrated quantitative and qualitative findings through a series of discussions among co-authors (similar to the 'critical friends' meetings described above). Within this analysis process, interpretations of findings were considered in relation to recommendations for improving children in care's participation and experiences in sport. These interpretations were debated, revisited, and refined until consensus was reached among researchers.

3. Results

3.1. Sample characteristics

Demographic data for the sample and their children in care are presented in Tables 1 and 2. The mean age of the sample ($n = 39$) was 47 years old ($SD = 10.10$, *range* = 31-70). Most participants were female, were providing long-term foster care, and had 6 or more years' experience in the out-of-home care system. On average, the participants' children in care were 10.03 ($SD = 2.61$, *range* = 7-16) years old, had spent 66% of their life in care, and most were above cutoff ranks on the PSC-17 for symptoms of internalising, attention, and externalising concerns. The mean number of 'risk factors' for mental health was 6.03 ($SD = 2.86$, $n = 40$), out of a possible 13 (see Table 2).

Swimming (37%) was the sport in which children were most commonly reported to participate, followed by basketball (30%), Australian rules football (27%), and soccer (23%). Basketball was the most *popular* (i.e., most commonly indicated as children in care's 'favourite') sport (59%), followed by swimming (52%), Australian rules football (41%), and soccer (41%). A higher proportion of 'favourite' sports were identified compared to participation numbers. For the interested reader, full sport participation data and carer-reported information about children in care's past experiences with sport and mental health services is provided in Supplementary Material 1.

3.2. Phase one: preferred program characteristics

In the following section, we present quantitative and qualitative results from phase one of this study (i.e., the survey) in relation to the 'characteristics' of sporting programs that appeal to carers. Carers' perspectives on 'labels' to avoid when promoting sporting programs for children in care are also presented.

Table 2
Demographic characteristics of participants' children in care.

Characteristic	Number of participants (% of total)
Risk factors for mental health concerns ($n = 40$)	
Early signs of mental health problems	24 (60%)
Concerning behaviours which may be an indication of risk of mental illness	23 (58%)
Diagnosis of mental illness in last 6 months	9 (23%)
Diagnosis of other condition (e.g., ADHD, FASD, DCD)	26 (65%)
Parent or sibling mental illness	19 (48%)
Parent or sibling disability or chronic illness	11 (28%)
Death of parent or sibling	7 (18%)
Witness or victim of domestic or sexual abuse	22 (55%)
Household substance misuse	26 (65%)
Household member incarcerated	26 (65%)
Parents separated or divorced	31 (78%)
Witnessed other traumatic event	11 (28%)
Other reason for increased risk of mental illness	6 (15%)
None	1 (3%)
Above cutoff for symptoms of disorder ($n = 39$)	
Internalising	28 (72%)
Attention	26 (67%)
Externalising	21 (54%)
Total	31 (80%)

Note. Participants were asked to provide information about *one* of their children in care. ADHD = Attention Deficit Hyperactivity Disorder. FASD = Foetal Alcohol Spectrum Disorder. DCD = Developmental Coordination Disorder.

Program characteristics that carers believed were most preferred by children in care included having a familiar person involved in sporting sessions (88% agree or strongly agree), swimming (79%), being able to use gym equipment (67%), and having a therapy dog at sessions (63%). There were no carers who strongly disagreed with the notion that their children in care would like to participate with children in a similar life 'situation' as them; however, more than 40% were uncertain about this element. The program characteristics with most disagreement included meditation (59% disagree or strongly disagree), quiet sessions (41%), and having a big group (41%). A graphical presentation of carers' perspectives on all program characteristics, ordered by percent agreement, is presented in Fig. 2.

Broadly, carers indicated that the general 'focus' of sporting programs (e.g., 'program has a focus on inclusion') was more important to them than specific program characteristics (e.g., 'program delivered weekly'; see Fig. 3). All (100%) carers believed a focus on inclusion, self-esteem, and skill development were at least moderately important, and almost all carers also placed at least moderate importance on the program focusing on teamwork (96%), wellbeing (94%), resilience (94%), friendships (91%), and mental health awareness (88%). Additionally, the program being close in location, and having small groups to participate in, were considered moderately important or greater by 91% of carers. The characteristics carers most strongly felt were not important at all included co-participation with a household member (32%) and a monthly program (29%). A graphical depiction of all program characteristics, ordered by carer importance (moderately important or above), is presented in Fig. 3.

3.2.1. *Qualitative findings from survey*

In their open-ended responses, carers highlighted three key elements that would make them more likely to enrol their children in care in a sporting program: (1) meeting logistical needs; (2) staff understanding of 'trauma-informed practice' and complex needs; and (3) a focus on non-competitive elements of sport. We elaborate on these considerations below.

Carers described that *meeting logistical needs* such as location, time, and cost directly impact whether carers can facilitate their children in care's participation. When asked about factors influencing their likelihood to enrol in a sport program, many carers, explicitly referred to the above constraints, such as P11 who answered "cost, location, facility". Sporting programs attempting to address logistical barriers would increase children in care's access to sport. Discussing this issue, P21 stated: "For us location and timing can be difficult with both [parents/carers] working full time and then the location of where we live there is not much around [on] a weekend". Logistical constraints also interact with children in care's complex needs, creating additional barriers to participation. For example, for P9's child in care, being "rushed from school" and having "considerable travel" to get to their organised sport "heightened her anxiety before the game". Finally, in addition to accessibility issues, many carers expressed a desire for additional support with multiple children in their care. For some carers, having many children in care with "different interests […] makes it difficult to accommodate all of their needs" (P40), and being able to "keep high needs children safe there" "is a big part" (P19) of whether they would enrol their children in a sporting program.

Many carers discussed the importance of staff (e.g., coaches, administration) in sporting organisations *understanding 'trauma-informed practice' and complex needs*. Within carers' desire for "coaches to be trauma informed" (P10) was an emphasis on staff having the ability to "understand" children in care, "make inclusion possible for our children" (P1) and having "compassion and skills to deal with what can be a very difficult child" (P27). Additionally, carers believed that "an increased ratio of staff to children per sporting

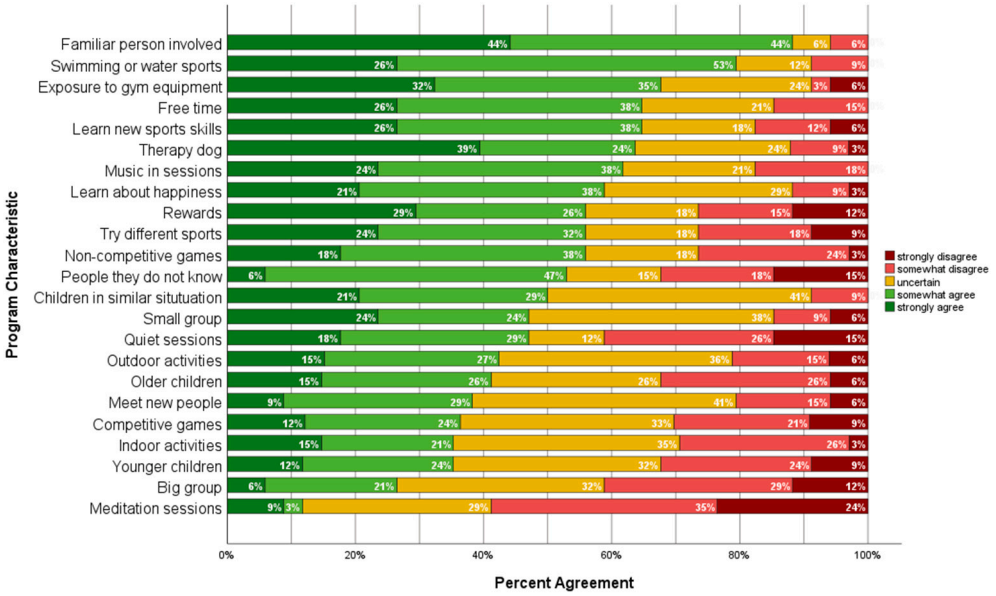

Fig. 2. Carers' perspective of children's preferred program characteristics ($n = 34$*). *Note*. The items in this figure are in descending order according to the percentage of carers who either somewhat or strongly agreed. * = 'Competitive games', 'therapy dog', and 'outdoor activities' had 33 responses.

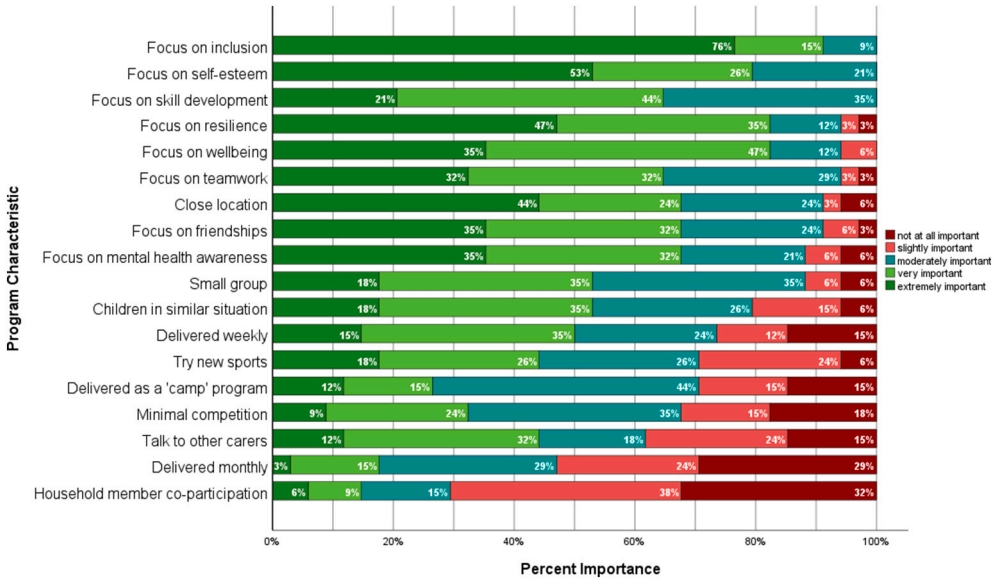

Fig. 3. Program characteristics important to carers (n = 34). *Note*. The items in this figure are in descending order according to the percentage of carers who indicated moderate importance or greater.

activity" would "better enable higher level of support to all children" (P13), giving them more confidence to leave their child in care at organised sport sessions.

Finally, some carers felt they would be more likely to enrol in a program that focused on the *non-competitive elements of sport*. Many believed the competitive nature of sport was over-emphasised in organised sporting settings, and a reduced focus on the importance of competition (i.e., winning and losing) would be more suitable for their children in care. With a greater emphasis on inclusion (instead of competition), carers felt that children in care may develop their "sense of simply having fun without worrying about winning" (P5), experience improved "self-worth and belief to continue on in the sport" (P1) and have better opportunities to "[make] new friends" (P9).

Carers also highlighted three reasons why they believed they would be interested in enrolling in a sport program that met their needs, namely: (1) it is a rare opportunity for children in care; (2) it is an opportunity for social development; and (3) inclusion is a priority for carers. We elaborate on these considerations below.

It was evident that carers believed their children in care's "well-being, self-esteem, behaviour and general health" (P1) would improve if sporting programs better addressed their needs. However, many reported that *opportunities* to participate in sport programs suitable for children in care were *rare*. P2, for example, noted, "there's not really much around that meets the needs of kids in care", and P7 described that it was "difficult to find a program that is weekly, close to home, is inclusive and understands the challenges young people in care face". Subsequently, carers described being interested in the improvement of sport delivery for children in care because they aim to provide their children in care with "the best opportunities" (P35) available.

Many carers also discussed the positive impact that sport can have on providing children in care with *opportunities for social development*. Specifically, they noted that a sport program that has been designed to support children in care's needs would allow children in care to "get to socialise no matter what situation they are in" (P4), develop their social skills, and make new friendships. Improvement in social outcomes was "so important" (P1) and an "ultimate goal" (P21) for some carers.

Expanding on the most preferred program characteristic in Fig. 3, carers described the appeal of having access to inclusive sporting opportunities. Moreover, *inclusion* is a *priority* for many carers when considering sport programs. By having a focus on equal participation, sport programs are more likely to be positive experiences for children in care. As P19 explained, it is "difficult to engage with typical sports programs" due to their child in care's "struggles to meet the expectations", leading them to "feel frustrated and feel bad about themselves". Instead, carers expressed a desire for a "positive" (P14) and "nurturing" (P15) environment—sporting programs that prioritised being "inclusive" and focused on "each individual child" (P24) would be "amazing" (P19) and "a major draw card" (P3).

3.2.2. Program labels

Survey questions regarding program 'labels' elicited both quantitative and qualitative data. In their responses, carers indicated that any label that could potentially isolate children in care from the general population should be avoided. Specifically, 90% of carers believed that programs should avoid referring to "at-risk children", and 68% of carers felt that "mental health", "children in care", and "mental illness" terms should be avoided when promoting sporting programs. Few carers reported that "sport" (3%), "resilience", "health", or "inclusive sport-based" terms (all 10%) should be avoided. Carers expanded on their answers to program labels in the open-ended responses, with carers reiterating that children in care do not want to be viewed as 'different'. Carers highlighted that

children in care are "told their whole lives they are different" (P11) and are "acutely aware of being 'different' and anything that adds to this stigma needs to be avoided" (P26). To accentuate the message that "children (and carers) don't necessarily want [being in care] advertised" (P5), one carer stated: "Please, please do not label this as a child in care or mental health thing, it does not need a label to [provide mental health benefits]" (P11).

3.3. Phase two: considerations for sport program design

In the following section, we present qualitative findings from phase two of this study (i.e., interviews) in relation to carers' considerations regarding qualities important to the design and delivery of sport programs for children in care. Interviews lasted between 11 and 54 minutes, with a mean interview length of 27 minutes. We identified four themes reflecting our discussions with carers: (1) *benefits of inclusive sport programs*; (2) *support for carers*; (3) *knowledge and understanding among program providers*; and (4) *addressing logistical constraints*. These themes are presented in Table 3, alongside a description and example quote (i.e., meaning unit) for each theme. We provide further meaning units throughout our presentation of findings to support interpretation of the data. In line with our philosophical perspective for this study, frequencies of meaning units or codes are not reported.

3.3.1. Benefits of inclusive sport programs

In their discussion of how the design and delivery of sport programs can be improved to better address the needs of children in care, carers often described the benefits for their children in care (and themselves) if sporting programs were more inclusive. In our presentation of the *benefits of inclusive sport programs*, we describe two subthemes pertaining to: (a) *outcomes from participation*; and (b) *opportunities for participation.*

3.3.1.1. Outcomes from participation. Carers highlighted that, when delivered appropriately, sport participation improves children in care's mental and physical health, interpersonal skills, and emotional and behavioural outcomes. According to carers, by improving on the design and delivery of sport programs, there is an opportunity to transform sport from "not 'just' playing sport" to "a combination

Table 3
Summary of themes from qualitative analyses in phase two.

Theme	Description	Example	Subtheme	Description	Example
Benefits of inclusive sport programs	Access to appropriately delivered sport programs would be beneficial for children in care	See subtheme examples	Outcomes from participation	Participation in appropriately delivered sport programs improves mental, physical, social, and behavioural outcomes.	"*If you create the right environment, that will get the benefit.*"
			Opportunities for participation	Greater availability of appropriately designed sport programs increases the opportunity for participation in sport	"*I think a program, which is for the younger kids first developing their skills and they're just having fun and whatever, but then by older they're a bit more confident, then you can get them playing netball.*"
Support for carers	Initiatives to improve sport program design and delivery are more likely to be successful if support and resources for carers are provided	"*What would be helpful is* […] *for carers, 'here's a list of football clubs and the areas they are in, we've highlighted the ones that we would recommend because they are trauma informed'.*"			
Knowledge and understanding among program providers	People involved in sport delivery should have an understanding of trauma	"*I would say that's probably the most important… to kind of just have some base knowledge of trauma, to, so that you can at least know what, yeah, how to handle situations when they pop up, what to say, what the kids need.*"			
Addressing logistical constraints	Logistical issues such as location, cost, and timing need to be addressed—some of these constraints would be resolved if there was greater access to inclusive sport opportunities	"*Generally we put a rule of 15 to 20 minutes on us because it's a lot of travel.*"			

of resources and skill building" (P4). Importantly, carers generally believed that sport programs could help children in care "[feel] better mentally" (P14), "[build] positive connections" (P21), and "develop the whole […] person" (P16) not through explicit instruction, but through "[creating] the right environment" (P22). P24 summarised this notion, stating: "Do the sport and the other things come out of it just naturally". Beyond the benefits described above, some carers believed participating in sport would help their child in care 'fit in' with their peers. P22 stated:

> Even if they never go on to play in a football team, just to be able to go out and join in at lunchtime is a huge thing for a kid at school, and that's [going to] help their learning, you know.

Overall, carers explained that implicit, holistic benefits for children in care could be derived from appropriate provision of sporting programs.

3.3.1.2. Opportunities for participation. Increased availability of appropriately designed sport programs would allow for greater opportunities for sport participation for children in care. Central to this notion is carers' desire for their children in care to integrate with children from other household 'types', and therefore for inclusive practices to be incorporated within community sport programs as opposed to a separate, targeted program for children in care. For example, P13 noted that "if they are held in a group with kids in care, it's very quick to, for them to realise 'okay, we're all kids in care'". Further, P2 indicated that they "really like" the idea of a program "designed specifically" in consideration of children in care's needs, but that is also "open to the broader community". Importantly, many carers expressed interest in having easier access to 'trying out' sports. Due to the existing structure of most sporting organisations, it is difficult for carers to allow their children in care to participate in a specific sport without a significant upfront commitment. P14 explained:

> I've had trouble sort of accessing, like, if he wants to try out footy, or if he wants to try out soccer, it's quite hard to achieve that. And so then if I'm going to put him in one, it's a lot of effort and resources spent on, on doing that, […] and then that might not be the sport he prefers anyway or one he feels good at anyway.

In sum, carers believed that if sport programs were designed so that children could initially become involved more easily (for example, if organisations allowed for initial trial periods), participation in sport among children in care would improve.

3.3.2. Support for carers

If efforts to improve sport program design and delivery are to be successful, it is imperative that additional support for carers is provided. Many carers described difficulties finding appropriate sporting opportunities for children in care due to the "time poor" (P19) nature of being a carer. For example, P10 explained: "[…] there's only so many [sic] ringing around schools and Googling places in the area that you can do before it starts to feel very futile". Addressing this issue, some carers suggested a resource with information on "where to go" (P3) for sporting programs that are "[recommended] because they are trauma-informed" (P11). Other carers, such as P14, also expressed their desire for resources to support their child in care's development at home:

> Maybe some information as to, like, how to develop some of their sports skills or their physical skills at home. Like, if there's something that could be done at home, that would be really helpful […] some ideas and ways to do that.

Expanding on the notion of carers searching for sporting programs that are appropriate for the needs of children in care, carers emphasised that the most salient support that can be provided for them is the ability to leave their child in care at the program during a sporting session. Carers believed that, if children in care's needs were considered in the design of sporting programs, they would have "comfort and reassurance" (P13) that they could "safely" (P6) leave their children in care at the program. In providing carers with greater confidence in the capacity of sporting programs to support their children in care without their supervision, carers will feel supported to have some "respite" and a "break", allowing them to "keep looking after [children in care]" (P7).

3.3.3. Knowledge and understanding among program providers

It is important to carers that people involved in the design and delivery of sport programs have knowledge and understanding of children with experiences of trauma. The notion of 'trauma-informed practice' was commonly highlighted by carers. P13, for example, described trauma-informed practice as "having […] adaptability to [a] child's needs", demonstrating "empathy, compassion, patience, [and] flexibility". Many carers shared the viewpoint that program providers should be trained to "understand who [they're] coaching", leading to "more engagement" (P22) from children in care in sporting settings. Some participants felt that improving knowledge and understanding in sporting settings would be achievable with only "a bit of training" (P1) on "how to include kids with trauma and behavioural issues and disability" (P14). For instance, P7 shared: "[…] that's 30 minutes, it could be online […] if every club did that, you know, it makes a big difference".

In addition to highlighting the importance of increasing program providers' knowledge and understanding of children in care, many carers provided specific guidance on what changes could be made by program providers to improve children in care's sporting experiences. It was evident (from both the survey in phase one of this study, and from anecdotes provided in the interviews) that many of the children in care of the sample of carers have behavioural or emotional difficulties. For instance, P6 explained that their children in care will "react" to some interactions in sport "by hitting someone or kicking someone". Some carers felt that higher instructor-to-children ratios would help make children in care feel more "safe" and would "[support] them to regulate themselves emotionally so that they're able to participate" (P14). Furthermore, some carers suggested that program providers have a "freelance person", someone

who is not directly leading a sporting session but instead walks around to help children who are "struggling with attention" (P13).

3.3.4. Addressing logistical constraints

Carers offered several suggestions to address the logistical issues they face in providing sporting opportunities for their children in care. The most reported logistical constraint was location—many carers felt that there were limited sporting programs that suited their children in care's needs in a location near them. Importantly, "it would be hard for the kids" (P12) to be at a program if it was located "too far away" (P8). Adding weight to the notion that carers would prefer support for children in care to be built into existing sporting programs, many carers emphasised that programs in "multiple locations" (P17) would be ideal.

Beyond location, carers also discussed cost and timing as significant barriers to accessing sporting programs, and suggested solutions be devised to address these issues. Many carers shared that funding for participating in sport was covered by the Government department responsible for overseeing the out-of-home care system. For example, P23 stated: "if we want to do something, the department will fund it". However, often, this was only for "one sport a term" (P21), meaning that carers may end up needing to "[pay] out of [their] own pocket" (P1) if their child in care was particularly interested in sport. As a result, some carers highlighted that sporting programs have "got to be affordable" (P6) for their children in care to have access. Finally, participants suggested that sporting programs need to consider the impact of being in care on a child in care's ability to attend sporting sessions regularly. For example, some requirements of being in care (e.g., family contact) for P14's child are "difficult to work around". Improving the availability of appropriately designed sport programs, and increasing carers' awareness of how to access the 'right' program that suits their needs and logistical considerations, would improve children in care's participation in sport.

3.4. Recommendations for sport program design

We integrated findings from our quantitative and qualitative data to provide an overview of the most salient and recurrent suggestions for policymakers, researchers, peak sporting bodies (e.g., organisations that oversee sport provision), and sporting organisations (e.g., community sport clubs) on how sport program design could be improved to facilitate sport participation and positive experiences for children in care. Detail on these recommendations is available in Table 4.

Table 4
Recommendations for adapting sport program design to improve inclusion for children in care.

Recommendation	Supporting evidence	Example strategies
Recommendation 1: Strategies to improve inclusion for children in care in sport should be embedded within existing sporting programs.	*Phase one*: carers indicated that the most important feature of sport programs was inclusion, and that a focus on inclusion instead of competition appealed to them. Children in care do not want to be viewed as different, and therefore labels should be avoided that highlight children being "in care" or "at-risk". *Phase two*: inclusive practices should be integrated into community sporting programs to generate greater opportunities for participation. There is a risk that a program designed exclusively for and delivered exclusively to children in care would further isolate and stigmatise children in care. Increased availability of sporting programs with support for children in care's needs minimises the impact of entrenched logistical challenges.	Access to 'trying out' sports prior to making significant personal, time, and financial commitments. Increased availability of sport programs with an individualised approach to sport delivery, a positive environment, and a reduced focus on competition.
Recommendation 2: Efforts should be made to improve sport program providers' understanding of how to support children in care.	*Phase one*: carers were more likely to enrol their child in care in a sporting program if staff were trained to work with children with complex needs. *Phase two*: increased knowledge and understanding of program providers would increase carers' confidence to leave their children in care at sporting activities.	The development and delivery of evidence-informed training programs, workshops, and/or courses for organisations involved in delivering sport in the community. For example, guidance for organisations on how to create a safe environment, how to appropriately manage behaviour, or respond to disclosure of maltreatment.
Recommendation 3: Resources should be developed to support carers in facilitating participation and positive sporting opportunities.	*Phase one*: programs that fit the characteristics that are most important to carers were difficult for carers to find. Access to information on local sporting organisations would simplify the process of searching for appropriate opportunities (including, for example, programs whereby logistical constraints would minimally impact participation). *Phase two*: additional support for carers is necessary, particularly because of the time consumed by ensuring all their children in care's needs are met. Resources to help carers locate inclusive sport programs with appropriately trained staff and flexibility to navigate logistical constraints would address many carers' concerns.	Development of resources to make it easier for carers to find appropriate opportunities and enrol their children in care to participate. For example, a mobile application which provides information to carers about the suitability (e.g., trauma training, facilities) of local sporting programs and organisations.

4. Discussion

The purpose of this sequential explanatory mixed-methods study was to identify recommendations for improving children in care's participation and experiences in sport. In this respect, we illuminated three key recommendations for policymakers, researchers, peak sporting bodies and sporting organisations (see Table 4). These recommendations apply differently across these stakeholder groups. For example, policymakers could develop more inclusive policies regarding funding for sport participation for children in care; researchers could explore carers' uptake of a resource that informs them of available sport programs; peak sporting bodies could integrate education programs for sporting organisations under their oversight; and sporting organisations could ensure they develop strategies to be more inclusive of all children's needs. Consistent with guidelines for mixed-methods research of this nature, the quantitative and qualitative components of our work were guided by specific aims. The purpose of the quantitative component of the study was to understand carers' preferences for various program characteristics in terms of their desirability and appropriateness within sport programs for children in care. Our findings revealed that sport programs with a broad focus on inclusion, self-esteem, and skill development appeared to be more important to carers than any specific program 'elements'. Additionally, the majority of carers reported that their children in care would prefer to participate with someone familiar to them, and, that labels such as "at-risk" should be avoided when promoting sport programs. The purpose of the qualitative component of the study was to allow for elaboration on quantitative responses, and to explore in more detail carers' considerations regarding the design and delivery of sport programs for children in care. Here, our findings illuminated the benefits of inclusive practice, the need for additional support for carers, the importance of program providers' knowledge and understanding, and suggestions for addressing logistical challenges in sport. Our multi-phase, mixed-method approach to this study was grounded in principles of participatory research and co-design (Eyles et al., 2016), and provides an important foundation for ongoing work in improving sport programs for children in care. Below, we expand upon the three broad recommendations derived from carers' responses and conversations. In discussing these recommendations, we recognise that challenges to implementation may exist (e.g., difficulty engaging sport organisations in trauma training amidst their other priorities). Across all three recommendations, we encourage work designed to explore elements of feasibility and implementation.

Carers highlighted that their children in care would benefit most from additional supports being embedded *within existing sport programs*. In part, this position emerged from carers' emphasis on children in care not wanting to be isolated or labelled, or to feel 'different' to other children—a notion congruent with existing literature (Rauktis et al., 2011; Rogers, 2017). The presence of stigma derived from being in care is well-evidenced (e.g., Wilson et al., 2020); however, researchers have often described peer support relationships with other children in care as a crucial strategy in coping with stigma (Rogers, 2017). Although we recognise the importance of peer support (with 'similar others') as a coping strategy, our findings suggest that, in a sporting context, the risk of 'segregating' children in care with an exclusive program 'for' children in care may magnify their feelings of isolation and stigma. Carers also outlined the benefits of inclusive practices in sport for their children in care and emphasised that inclusion was the most important feature of sport programs, particularly given the prevalence of mental health problems, neurodiversity, and disability among children in care (Cheng et al., 2023; Engler et al., 2022; Popova et al., 2019; Willis et al., 2017). Further, adapting sport programs to increase inclusion will likely benefit a broader population than solely children in care. For example, many carers discussed the benefit of a policy change to allow children the opportunity to participate in a sport program for a short period of time without paying fees and going through the 'sign-up' process (i.e., 'trying out' a sport). Researchers are yet to investigate the potential impact of such policy—however, we suggest that adapting this process to be more inclusive may alleviate financial pressure (one of the most prominent barriers to sport participation; Somerset & Hoare, 2018) by reducing the risk of having to commit to payment prior to participating, lead to greater enjoyment and participation (and ultimately reduce dropout; Crane & Temple, 2015), and improve developmental and psychosocial outcomes (Côté & Hancock, 2016). From a socioecological perspective, inclusive practices can be embedded within political (e.g., funding policies), environmental (e.g., accessibility), organisational (e.g., suitable program staffing), and social (e.g., support network) elements of sport provision as supports for children's participation (Lange et al., 2024). By increasing the focus on inclusion in sport, participation among all children (*including* children in care) may be improved.

Carers highlighted the importance of training and education for sport organisations to better understand how to support children in care's needs and become more 'trauma-informed'. This recommendation stemmed from carers' descriptions of trauma as a common experience among their children in care (Greeson et al., 2011). Broadly, trauma-informed practices refer to a guiding set of principles in recognition of the potential existence of previous trauma and its impact on one's interactions with their environment (Hatzikiriakidis et al., 2023). More specifically for the design and delivery of sport programs, principles of trauma-informed practice include ensuring safety and wellbeing, developing positive and supportive relationships, establishing appropriate structures and routines, and recognising the importance of culture (Bergholz et al., 2016; Quarmby et al., 2022). Drawing from the example provided in Table 4, educating those who deliver sport programs on what it 'means' to be a child in care, what to do if a child discloses sensitive information, or how to foster a safe and supportive environment is likely to promote more positive sport experiences. There is evidence to support the notion that trauma-informed sport programs lead to positive social, emotional, and behavioural outcomes for children (Berger et al., 2024). Further, there is a small but developing evidence base to suggest that providing sporting organisations with training and support on delivering trauma-informed sport is feasible and effective (Shaikh et al., 2021; Shaikh & Forneris, 2024). In line with carers' suggestions, the development and evaluation of trauma-informed sport training is recommended to equip sport program providers with knowledge and confidence to support children in care. More broadly, we also encourage the adoption of trauma-informed practices when planning and conducting research with carers and children in care (see Quarmby et al., 2024).

Carers also expressed their desire for resources that would support them in facilitating sport participation. Carers' responsibility to navigate administrative processes often leads to a hybrid role of being a 'professional-parent' (Hollett et al., 2022), and they are key

drivers of sport participation in children in care (Green et al., 2021). Simplifying the process of searching for appropriate sport opportunities would alleviate burden on carers. Additionally, the impact of logistical challenges on participation may be mitigated as carers become more aware of local, appropriate, and inclusive sport programs. In recent years, digital platforms (e.g., mobile applications or 'apps') have become popular tools for disseminating information on accessible sport and physical activity opportunities for people with disabilities (Lapierre et al., 2024). In addition to providing support for people with disabilities and their families to find appropriate sport programs, resources such as mobile apps provide community sport organisations with the opportunity to improve their reputation, grow their breadth of services and participants, and build collaborative partnerships (Thornton et al., 2022). A mobile app of this nature for children in care would outline key features of local sport programs important to carers (e.g., location, cost, trauma-informed trained providers) when seeking sporting opportunities. We encourage the development of targeted resources such as this to support carers in locating appropriate sport opportunities, and evaluation of the impact of resources on participation outcomes for children in care.

This study is one of the first to elicit carers' perspectives on recommendations and strategies to improve sport participation and experiences for children in care; however, our findings should be considered in light of the study's limitations. This work was guided by principles of co-design and participatory research outlined in seminal work (e.g., Israel et al., 1998) and more recent review-based work (e.g., Eyles et al., 2016). However, further (or more specific) insight may have been gained from additional 'stages' of inquiry with carers, or 'participant-led' research activities (e.g., allowing for carer input in analyses of data). We encourage researchers to build upon this work to advance the promotion of voices of carers, and children in care, in ongoing participatory research. Our participants were predominantly foster carers, despite the majority of care arrangements in Australia being kinship care (a child in the care of a family member; Australian Institute of Health and Welfare [AIHW], 2022). Kinship and foster carers have different perspectives and experiences regarding sport participation (Green et al., 2021), and it is therefore reasonable to expect their preferences for program characteristics to differ in some respects. We encourage researchers to continue to seek insight from both foster and kinship carers, as well as residential care staff, to inform ongoing policy development and our broader understanding of the unique needs of this group. It is likely that carers who participated in this study (which was promoted as being about sport) had an interest in sport, and therefore our participants' perspectives may not represent those of carers with less interest or motivation in facilitating sport participation for children in care. Further, our sample size was determined through pragmatic considerations (e.g., time and resource constraints), and not through an attempt to reach 'objective' data saturation. This approach to sampling was suitable for addressing our research questions and our study design (particularly in relation to qualitative data collection; Braun & Clarke, 2021); however, it may have limited the generalisability of our findings. Researchers could pursue collecting larger-scale quantitative data on carers' (and children in care's) preferences for sport program design. Finally, our study did not include children in care—instead, we specifically sought perspectives on sport program design from those who were most proximally responsible for providing children in care with sport opportunities (i.e., carers). We acknowledge the importance of participatory research with children and young people, and recognise that future work in this field should include children in care as participants.

This study provides important insight into carers' recommendations for improving children in care's participation and experiences in sport, building on existing work exploring barriers to sport participation (e.g., Quarmby & Pickering, 2016). In illuminating carers' perspectives, this work provides critical direction for researchers, policymakers, peak sporting bodies, and sporting organisations on addressing the needs of children in care within the sporting environment. Crucially, our findings reveal implications for policy and practice that, in addition to impacting children in out-of-home care, may also likely benefit other diverse populations (such as children with disabilities). We encourage prioritisation of inclusive practices in organised sport, training and education for sport program providers, and development of resources to support carers. Effective implementation of these recommendations promises to improve experiences and participation in sport for children in care, leading to greater social, psychological, and physical health outcomes.

CRediT authorship contribution statement

Aaron Simpson: Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Timothy Budden:** Writing – review & editing, Supervision, Formal analysis, Conceptualization. **Claire Willis:** Writing – review & editing, Formal analysis. **James Dimmock:** Writing – review & editing, Supervision, Conceptualization. **Ashleigh Lin:** Writing – review & editing, Supervision, Conceptualization. **Ashleigh L. Thornton:** Writing – review & editing, Supervision, Conceptualization. **Bonnie Furzer:** Writing – review & editing, Supervision, Conceptualization. **Ivan Jeftic:** Writing – review & editing, Formal analysis. **Michael Rosenberg:** Writing – review & editing, Supervision. **Ben Jackson:** Writing – review & editing, Supervision, Methodology, Formal analysis, Conceptualization.

Data availability

Data will be made available on request.

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Appendix A. Supplementary data

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References

Appelqvist-Schmidlechner, K., Haavanlammi, M., & Kekkonen, M. (2023). Benefits and underlying mechanisms of organized sport participation on mental health among socially vulnerable boys. A qualitative study on parents' perspective in the sport-based Icehearts programme. *Sport in Society, 26*(2), 245–262. https://doi.org/10.1080/17430437.2021.1996348

Australian Bureau of Statistics. (2021). Socio-Economic Indexes for Areas (SEIFA), Australia. https://www.abs.gov.au/statistics/people/people-and-communities/socio-economic-indexes-areas-seifa-australia/latest-release.

Australian Institute of Health and Welfare. (2022). Child protection Australia 2020–21. https://www.aihw.gov.au/reports/child-protection/child-protection-australia-2020-21.

Australian Sports Commission. (2023). National sport and physical activity participation report: October 2023. https://www.clearinghouseforsport.gov.au/__data/assets/pdf_file/0004/1122754/AusPlay-National-Sport-and-Physical-Activity-Participation-Report-October-2023.pdf.

Berger, E., O'Donohue, K., Jeanes, R., & Alfrey, L. (2024). Trauma-informed practice in physical activity programs for young people: A systematic review. *Trauma, Violence & Abuse, 25*(4), 2584–2597. https://doi.org/10.1177/15248380231218293

Berger, R. (2015). Now I see it, now I don't: Researcher's position and reflexivity in qualitative research. *Qualitative Research, 15*(2), 219–234. https://doi.org/10.1177/1468794112468475

Bergholz, L., Stafford, E., & D'Andrea, W. (2016). Creating trauma-informed sports programming for traumatized youth: Core principles for an adjunctive therapeutic approach. *Journal of Infant, Child, and Adolescent Psychotherapy, 15*(3), 244–253. https://doi.org/10.1080/15289168.2016.1211836

Blythe, S. L., Jackson, D., Halcomb, E. J., & Wilkes, L. (2012). The stigma of being a long-term foster carer. *Journal of Family Nursing, 18*(2), 234–260. https://doi.org/10.1177/1074840711423913

Bratteteig, T., Bødker, K., Dittrich, Y., Mogensen, P. H., & Simonsen, J. (2012). Methods: Organising principles and general guidelines for participatory design projects. In J. Simonsen, & T. Robertson (Eds.), *Routledge international handbook of participatory design* (pp. 117–144). Routledge.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2021). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health, 13*(2), 201–216. https://doi.org/10.1080/2159676X.2019.1704846

Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. SAGE Publications.

Braun, V., Clarke, V., & Weate, P. (2016). Using thematic analysis in sport and exercise research. In B. Smith, & A. C. Sparkes (Eds.), *Routledge handbook of qualitative research in sport and exercise* (pp. 213–227). Routledge.

Briggs, E. C., Amaya-Jackson, L., Putnam, K. T., & Putnam, F. W. (2021). All adverse childhood experiences are not equal: The contribution of synergy to adverse childhood experience scores. *American Psychologist, 76*(2), 243–252. https://doi.org/10.1037/amp0000768

Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., … Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British Journal of Sports Medicine, 54*(24), 1451–1462. https://doi.org/10.1136/bjsports-2020-102955

Cheng, Z., Tani, M., & Katz, I. (2023). Outcomes for children with disability in out-of-home care: Evidence from the pathways of care longitudinal study in Australia. *Child Abuse & Neglect, 143*, Article 106246. https://doi.org/10.1016/j.chiabu.2023.106246

Côté, J., & Hancock, D. J. (2016). Evidence-based policies for youth sport programmes. *International Journal of Sport Policy and Politics, 8*(1), 51–65. https://doi.org/10.1080/19406940.2014.919338

Crane, J., & Temple, V. (2015). A systematic review of dropout from organized sport among children and youth. *European Physical Education Review, 21*(1), 114–131. https://doi.org/10.1177/1356336X14555294

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.

Crouch, E., Probst, J. C., Radcliff, E., Bennett, K. J., & McKinney, S. H. (2019). Prevalence of adverse childhood experiences (ACEs) among US children. *Child Abuse & Neglect, 92*, 209–218. https://doi.org/10.1016/j.chiabu.2019.04.010

D'Andrea, W., Bergholz, L., Fortunato, A., & Spinazzola, J. (2013). Play to the whistle: A pilot investigation of a sports-based intervention for traumatized girls in residential treatment. *Journal of Family Violence, 28*, 739–749. https://doi.org/10.1007/s10896-013-9533-x

Donachy, G. S. (2017). The caregiving relationship under stress: Foster carers' experience of loss of the sense of self. *Journal of Child Psychotherapy, 43*(2), 223–242. https://doi.org/10.1080/0075417X.2017.1323943

Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: Informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity, 10*, 98. https://doi.org/10.1186/1479-5868-10-98

Engler, A. D., Sarpong, K. O., Van Horne, B. S., Greeley, C. S., & Keefe, R. J. (2022). A systematic review of mental health disorders of children in foster care. *Trauma, Violence & Abuse, 23*(1), 255–264. https://doi.org/10.1177/1524838020941197

Eyles, H., Jull, A., Dobson, R., Firestone, R., Whittaker, R., Te Morenga, L., … Ni Mhurchu, C. (2016). Co-design of mHealth delivered interventions: A systematic review to assess key methods and processes. *Current Nutrition Reports, 5*, 160–167. https://doi.org/10.1007/s13668-016-0165-7

Filges, T., Verner, M., Ladekjær, E., & Bengtsen, E. (2024). Participation in organised sport to improve and prevent adverse developmental trajectories of at-risk youth: A systematic review. *Campbell Systematic Reviews, 20*(1), Article e1381. https://doi.org/10.1002/cl2.1381

Finlay, L., & Gough, B. (2003). *Reflexivity: A practical guide for researchers in health and social sciences*. Oxford: Blackwell Publishing.

Gardner, W., Murphy, M., Childs, G., Kelleher, K., Pagano, M., Jellinek, M., … Chiappetta, L. (1999). The PSC-17: A brief pediatric symptom checklist with psychosocial problem subscales. *Ambulatory Child Health, 5*(3), 225–236.

Goemans, A., van Geel, M., van Beem, M., & Vedder, P. (2016). Developmental outcomes of foster children: A meta-analytic comparison with children from the general population and children at risk who remained at home. *Child Maltreatment, 21*(3), 198–217. https://doi.org/10.1177/1077559516657637

Green, R., Savaglio, M., Tate, R., Morris, H., Breman, R., Vicary, D., & Skouteris, H. (2021). Barriers to nutrition and physical activity participation for Australian children in foster and kinship care. *Children and Youth Services Review, 127*, Article 106102. https://doi.org/10.1016/j.childyouth.2021.106102

Greeson, J. K., Briggs, E. C., Kisiel, C. L., Layne, C. M., Ake, G. S., III, Ko, S. J., … Fairbank, J. A. (2011). Complex trauma and mental health in children and adolescents placed in foster care. *Child Welfare, 90*(6), 91–108. https://www.jstor.org/stable/48625371.

Hatzikiriakidis, K., O'Connor, A., Savaglio, M., Skouteris, H., & Green, R. (2023). The interconnectedness of disability and trauma in foster and kinship care: The importance of trauma-informed care. *International Journal of Disability, Development and Education, 70*(5), 899–910. https://doi.org/10.1080/1034912X.2021.1921126

Heath, R. D., Park, K., & Millward, S. F. (2023). Opportunities for positive youth development: The organized activity participation and educational outcomes of adolescents in adoptive, foster, and kinship care. *Child and Adolescent Social Work Journal, 40*, 623–642. https://doi.org/10.1007/s10560-021-00802-8

Hermens, N., Super, S., Verkooijen, K. T., & Koelen, M. A. (2017). A systematic review of life skill development through sports programs serving socially vulnerable youth. *Research Quarterly for Exercise and Sport, 88*(4), 408–424. https://doi.org/10.1080/02701367.2017.1355527

Hollett, M., Hassett, A., & Lumsden, V. (2022). Foster caring as 'professional parenting': A grounded theory of the relationships between parent and professional in long-term foster care. *Adoption & Fostering, 46*(4), 413–436. https://doi.org/10.1177/03085759221139490

Hulteen, R. M., Smith, J. J., Morgan, P. J., Barnett, L. M., Hallal, P. C., Colyvas, K., & Lubans, D. R. (2017). Global participation in sport and leisure-time physical activities: A systematic review and meta-analysis. *Preventive Medicine, 95*, 14–25. https://doi.org/10.1016/j.ypmed.2016.11.027

Iniesto, F., Charitonos, K., & Littlejohn, A. (2022). A review of research with co-design methods in health education. *Open Education Studies, 4*(1), 273–295. https://doi.org/10.1515/edu-2022-0017

Israel, B. A., Schulz, A. J., Parker, E. A., & Becker, A. B. (1998). Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health, 19*(1), 173–202. https://doi.org/10.1146/annurev.publhealth.19.1.173

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14–26. https://doi.org/10.3102/0013189X033007014

Kessler, R. C., McLaughlin, K. A., Green, J. G., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., … Williams, D. R. (2010). Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *The British Journal of Psychiatry, 197*(5), 378–385. https://doi.org/10.1192/bjp.bp.110.080499

Lange, S., Bolt, G., Vos, S., & Völker, B. (2024). Inclusion of the marginalized: The case of sport participation: A scoping review. *Journal of Global Sport Management*. https://doi.org/10.1080/24704067.2024.2317121

Lapierre, N., Huet-Fiola, C., Labrie, D., Vincent-Blouin, E., Côté, C., Gagnon, M., … Routhier, F. (2024). Digital platforms to facilitate physical activities for people with physical or sensory disabilities: A scoping review. *Disability and Health Journal, 101626*. https://doi.org/10.1016/j.dhjo.2024.101626

Levitt, H. M., Bamberg, M., Creswell, J. W., Frost, D. M., Josselson, R., & Suárez-Orozco, C. (2018). Journal article reporting standards for qualitative primary, qualitative meta-analytic, and mixed methods research in psychology: The APA Publications and Communications Board task force report. *American Psychologist, 73*(1), 26. https://doi.org/10.1037/amp0000151

Mullins, R. M., Kelly, B. E., Chiappalone, P. S., & Lewis, V. J. (2021). 'No-one has listened to anything I've got to say before': Co-design with people who are sleeping rough. *Health Expectations, 24*(3), 930–939. https://doi.org/10.1111/hex.13235

Mulvale, A., Miatello, A., Hackett, C., & Mulvale, G. (2016). Applying experience-based co-design with vulnerable populations: Lessons from a systematic review of methods to involve patients, families and service providers in child and youth mental health service improvement. *Patient Experience Journal, 3*, 117–129. https://doi.org/10.35680/2372-0247.1104

Mulvale, G., Moll, S., Miatello, A., Robert, G., Larkin, M., Palmer, V. J., … Girling, M. (2019). Codesigning health and other public services with vulnerable and disadvantaged populations: Insights from an international collaboration. *Health Expectations, 22*(3), 284–297. https://doi.org/10.1111/hex.12864

Pereira, A. I., Ferreira, C., Oliveira, M., Evangelista, E. S., Ferreira, J., Roberto, M. S., … Crespo, C. (2020). Effectiveness of a combined surf and psychological preventive intervention with children and adolescents in residential childcare: A randomized controlled trial. *Revista de Psicología Clínica con Niños y Adolescentes, 7*(2), 22–31. https://doi.org/10.21134/rpcna.2020.07.2.3

Petruccelli, K., Davis, J., & Berman, T. (2019). Adverse childhood experiences and associated health outcomes: A systematic review and meta-analysis. *Child Abuse & Neglect, 97*, Article 104127. https://doi.org/10.1016/j.chiabu.2019.104127

Popova, S., Lange, S., Shield, K., Burd, L., & Rehm, J. (2019). Prevalence of fetal alcohol spectrum disorder among special subpopulations: A systematic review and meta-analysis. *Addiction, 114*(7), 1150–1172. https://doi.org/10.1111/add.14598

Posadzki, P., Pieper, D., Bajpai, R., Makaruk, H., Könsgen, N., Neuhaus, A. L., & Semwal, M. (2020). Exercise/physical activity and health outcomes: An overview of Cochrane systematic reviews. *BMC Public Health, 20*, 1724. https://doi.org/10.1186/s12889-020-09855-3

Quarmby, T., & Pickering, K. (2016). Physical activity and children in care: A scoping review of barriers, facilitators, and policy for disadvantaged youth. *Journal of Physical Activity and Health, 13*(7), 780–787. https://doi.org/10.1123/jpah.2015-0410

Quarmby, T., Sandford, R., & Elliot, E. (2019). 'I actually used to like PE, but not now': Understanding care-experienced young people's (dis)engagement with physical education. *Sport, Education and Society, 7*, 714–726. https://doi.org/10.1080/13573322.2018.1456418

Quarmby, T., Sandford, R., Green, R., Hooper, O., & Avery, J. (2022). Developing evidence-informed principles for trauma-aware pedagogies in physical education. *Physical Education and Sport Pedagogy, 27*(4), 440–454. https://doi.org/10.1080/17408989.2021.1891214

Quarmby, T., Sandford, R., & Hooper, O. (2024). Researching with care-experienced young people in sport and physical activity: Methodological reflections and the need for a trauma-aware lens. In J. McMahon, & K. R. McGannon (Eds.), *Trauma-informed research in sport, exercise, and health* (pp. 197–214). Routledge. https://doi.org/10.4324/9781003332909-16.

Quarmby, T., Sandford, R., Hooper, O., & Duncombe, R. (2021). Narratives and marginalised voices: Storying the sport and physical activity experiences of care-experienced young people. *Qualitative Research in Sport, Exercise and Health, 13*(3), 426–437. https://doi.org/10.1080/2159676X.2020.1725099

Rauktis, M. E., Fusco, R. A., Cahalane, H., Bennett, I. K., & Reinhart, S. M. (2011). "Try to make it seem like we're regular kids": Youth perceptions of restrictiveness in out-of-home care. *Children and Youth Services Review, 33*(7), 1224–1233. https://doi.org/10.1016/j.childyouth.2011.02.012

Röger-Offergeld, U., Kurfer, E., & Brandl-Bredenbeck, H. P. (2023). Empowerment through participation in community-based participatory research—Effects of a physical activity promotion project among socially disadvantaged women. *Frontiers in Public Health, 11*, Article 1205808. https://doi.org/10.3389/fpubh.2023.1205808

Rogers, J. (2017). 'Different' and 'devalued': Managing the stigma of foster-care with the benefit of peer support. *British Journal of Social Work, 47*(4), 1078–1093. https://doi.org/10.1093/bjsw/bcw063

Sahle, B. W., Reavley, N. J., Li, W., Morgan, A. J., Yap, M. B. H., Reupert, A., & Jorm, A. F. (2021). The association between adverse childhood experiences and common mental disorders and suicidality: An umbrella review of systematic reviews and meta-analyses. *European Child & Adolescent Psychiatry, 31*, 1489–1499. https://doi.org/10.1007/s00787-021-01745-2

Salazar, A. M., Keller, T. E., Gowen, L. K., & Courtney, M. E. (2013). Trauma exposure and PTSD among older adolescents in foster care. *Social Psychiatry and Psychiatric Epidemiology, 48*, 545–551. https://doi.org/10.1007/s00127-012-0563-0

Sandford, R., Quarmby, T., Hooper, O., & Duncombe, R. (2021). Navigating complex social landscapes: Examining care experienced young people's engagements with sport and physical activity. *Sport, Education and Society, 26*(1), 15–28. https://doi.org/10.1080/13573322.2019.1699523

Seker, S., Boonmann, C., Gerger, H., Jäggi, L., d'Huart, D., Schmeck, K., & Schmid, M. (2022). Mental disorders among adults formerly in out-of-home care: A systematic review and meta-analysis of longitudinal studies. *European Child & Adolescent Psychiatry, 31*(12), 1963–1982. https://doi.org/10.1007/s00787-021-01828-0

Shaikh, M., Bean, C., Bergholz, L., Rojas, M., Ali, M., & Forneris, T. (2021). Integrating a sport-based trauma-sensitive program in a national youth-serving organization. *Child and Adolescent Social Work Journal, 38*(4), 449–461. https://doi.org/10.1007/s10560-021-00776-7

Shaikh, M., & Forneris, T. (2024). A RE-AIM evaluation of a sport-based trauma-sensitive youth development programme. *International Journal of Sport and Exercise Psychology, 22*(4), 845–865. https://doi.org/10.1080/1612197X.2023.2180068

Shannon-Baker, P. (2016). Making paradigms meaningful in mixed methods research. *Journal of Mixed Methods Research, 10*(4), 319–334. https://doi.org/10.1177/1558689815575861

Simpson, A., Jackson, B., Willis, C., Lin, A., Thornton, A. L., Furzer, B., … Budden, T. (2025). "That's not fair on my kid": Carers' perspectives on sport participation and experiences for children in out-of-home care. *Psychology of Sport and Exercise, 78*, Article 102802. https://doi.org/10.1016/j.psychsport.2025.102802

Simpson, A., Teague, S., Kramer, B., Lin, A., Thornton, A. L., Budden, T., … Jackson, B. (2024). Physical activity interventions for the promotion of mental health outcomes in at-risk children and adolescents: A systematic review. *Health Psychology Review, 18*(4), 899–933. https://doi.org/10.1080/17437199.2024.2391787

Slattery, P., Saeri, A. K., & Bragge, P. (2020). Research co-design in health: A rapid overview of reviews. *Health Research Policy and Systems, 18*, 17. https://doi.org/10.1186/s12961-020-0528-9

Smith, B., & McGannon, K. R. (2018). Developing rigor in qualitative research: Problems and opportunities within sport and exercise psychology. *International Review of Sport and Exercise Psychology, 11*(1), 101–121. https://doi.org/10.1080/1750984X.2017.1317357

Somerset, S., & Hoare, D. J. (2018). Barriers to voluntary participation in sport for children: A systematic review. *BMC Pediatrics, 18*(1), 47. https://doi.org/10.1186/s12887-018-1014-1

Sparkes, A. C., & Smith, B. (2013). *Qualitative research methods in sport, exercise and health: From process to product*. Routledge. https://doi.org/10.4324/9780203852187

Steen, M., Manschot, M., & De Koning, N. (2011). Benefits of co-design in service design projects. *International Journal of Design, 5*(2), 53–60.
Sullivan, G. M., & Artino, A. R., Jr. (2013). Analyzing and interpreting data from Likert-type scales. *Journal of Graduate Medical Education, 5*(4), 541–542. https://doi.org/10.4300/JGME-5-4-18
Super, S., Hermens, N., Verkooijen, K., & Koelen, M. (2018). Examining the relationship between sports participation and youth developmental outcomes for socially vulnerable youth. *BMC Public Health, 18*, 1012. https://doi.org/10.1186/s12889-018-5955-y
Thornton, A. L., Hackett, E., Wilkie, A., Gallon, J., Grisbrook, T. L., Elliott, C. M., & Ciccarelli, M. (2022). A qualitative exploration of motivations and barriers for community leisure organisations' engagement with the Jooay™ mobile app. *Disability and Rehabilitation, 44*(9), 1737–1745. https://doi.org/10.1080/09638288.2021.1986581
Turney, K., & Wildeman, C. (2016). Mental and physical health of children in foster care. *Pediatrics, 138*(5). https://doi.org/10.1542/peds.2016-1118
Turney, K., & Wildeman, C. (2017). Adverse childhood experiences among children placed in and adopted from foster care: Evidence from a nationally representative survey. *Child Abuse & Neglect, 64*, 117–129. https://doi.org/10.1016/j.chiabu.2016.12.009
Willis, R., Dhakras, S., & Cortese, S. (2017). Attention-deficit/hyperactivity disorder in looked-after children: A systematic review of the literature. *Current Developmental Disorders Reports, 4*, 78–84. https://doi.org/10.1007/s40474-017-0116-z
Wilson, B., & Barnett, L. M. (2020). Physical activity interventions to improve the health of children and adolescents in out of home care–A systematic review of the literature. *Children and Youth Services Review, 110*, Article 104765. https://doi.org/10.1016/j.childyouth.2020.104765
Wilson, S., Hean, S., Abebe, T., & Heaslip, V. (2020). Children's experiences with Child Protection Services: A synthesis of qualitative evidence. *Children and Youth Services Review, 113*, Article 104974. https://doi.org/10.1016/j.childyouth.2020.104974
York, W., & Jones, J. (2017). Addressing the mental health needs of looked after children in foster care: The experiences of foster carers. *Journal of Psychiatric and Mental Health Nursing, 24*, 143–153. https://doi.org/10.1111/jpm.12362