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Enhancing Parent–Child Psychosocial Support in Youth Tennis: The Development, Evaluation, and Evolution of the 5Cs Sport Parenting Workshop

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Abstract

Researchers in sport psychology have positioned parents as having key influential roles in the experiences and development of young athletes in sport. However, there has been a call for greater applied research with sport organizations to engage parents more explicitly in the psychosocial development process of the athlete. Grounded within the British Lawn Tennis Association's national parent education strategy, the purpose of this paper is to illustrate how two scientist–practitioners developed, implemented, evaluated, and evolved a parent support workshop based on the 5Cs framework. Drawing upon the three phases of Educational Design Research (EDR), the authors explain the processes of workshop design, evaluation, and iterative development through ongoing stakeholder engagement. Following a 2.5-year implementation period involving 255 parents, quantitative and qualitative post-workshop feedback ($n = 101$ parents) reinforced the utility value, strengths, benefits to learning, and opportunities for improvement. The actioning of parental feedback stimulated further workshop iterations and progressions to national governing body strategy, with additional qualitative research ($n = 20$ parents) leading to more contextualised workshop resources. This programme of work supports the psychosocial value and relevance of the 5Cs as a framework for enhancing parental knowledge of key behaviours and strategies to reinforce with their child-athlete. Recommendations are offered in terms of advancing methodologies to assess psychosocial behaviour change, conducting longitudinal interventions with parents, coaches, and athletes together, as well as extending and tailoring the workshop to other sports.

Keywords: parents; athletes; coaches; youth tennis; psychosocial development

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1. Introduction

Dorsch et al.'s (2021) recent historical scoping review provides scholars with a reminder of how scientific interest in the role of parents within organised youth sport continues to gather pace from its early beginnings. The foci of research on the influence of parental behaviour on child outcomes (e.g., Atkins et al., 2013), parents' experiences of role-related stress (Harwood & Knight, 2009), and young athletes' perceptions of parental involvement in sport (e.g., Knight et al., 2010) have transitioned recently to more nuanced studies of parent–child interactions (e.g., Hamann et al., 2025; Thrower et al., 2022) and the properties of effective and less effective interpersonal relationships between parents, athletes, and

coaches (Lisinskiene et al., 2019; Maurice et al., 2021; Tagliavini et al., 2024). Just over a decade ago, Harwood and Knight (2015) proposed that expertise in sport parenting was "demonstrated through parental involvement that increases the chances for children to achieve their sporting potential, have a positive psychosocial experience, and develop a range of positive developmental outcomes" (p. 25). Their statement was based upon the belief that success for children and adolescents involved in youth sport cannot, and should not, be measured by athletic performance alone. Rather, an optimal and holistically centred sport environment is one that facilitates a child's ongoing involvement in sport and physical activity, supports psychological wellbeing, and provides young people with opportunities to develop transferable life skills.

Over the past 20 years of applied research, our understanding of the critical and complex roles parents play in young athletes' development has been mirrored by a corresponding growth in the development, delivery, and evaluation of sport parent education programmes aimed at enabling and optimising the experiences of young athletes (see Burke et al., 2024; Teixeira et al., 2027 for systematic reviews). Early published work focused solely on practitioners' reflections on working with sport parents (see Richards & Winter, 2013), highlighting the need to provide parents with detailed information about the sport, make parents aware of their roles and responsibilities, and improve parents' knowledge and awareness of verbal and non-verbal communication. The salience of educating parents about different achievement goal orientations (Nicholls, 1989; Roberts et al., 1998) and their role in facilitating task-involving motivational climates (Ames, 1992; White, 1998) characterised a scientific era when helping parents with the quality of their motivational messaging to children was the key evidence-based mechanism for supporting young athletes in optimal cognitive and emotion-focused manners.

Over the intervening years, researchers have adopted more rigorous investigations to evaluate the effectiveness of both face-to-face (e.g., Dorsch et al., 2017) and online (i.e., Tamminen et al., 2020) sport parent education programs. Such programs differ in terms of their duration and frequency (e.g., one-off workshops, 12-month programs), content (e.g., parent behaviour, establishing and maintaining relationships, communication styles and/or strategies), sports (e.g., tennis, soccer, ice hockey), and intervention designs (i.e., qualitative, quantitative, and mixed-methods research; see Burke et al., 2024 for a review). However, taken together, they have provided consistent evidence to suggest that both longitudinal (e.g., Thrower et al., 2017) and brief one-off group-based programs (e.g., Dorsch et al., 2017; Tamminen et al., 2020) are well received and can positively impact both parent (e.g., increased task-orientated communication; Thrower et al., 2017) and child outcomes (e.g., reduced stress and anti-social behaviours; Dorsch et al., 2017; Tamminen et al., 2020).

A tangible outcome of successfully delivered empirical interventions is the resultant interest in national youth sport organizations seeking to tailor knowledge (Holt et al., 2018) and scale out evidence-based parent support programs (e.g., Tamminen et al., 2020; Thrower et al., 2022) across their national community. One prominent 'science-to-practice-to policy' example was the Lawn Tennis Association's (i.e., the national governing body of tennis in Great Britain) launch of the 'Optimal Competition Parenting Workshop', developed through knowledge tailoring of Thrower et al.'s (2017, 2018) field-based intervention studies. The 2 h interactive workshop for parents of children aged 9–14 years drew on both achievement goal theory and stress management approaches to assist parents in communicating effectively with children before, during, and after a match. By the end of 2024, after six years of a national tennis parent strategy, the workshop had been delivered in person and online to over 3000 tennis parents across the United Kingdom via a network of educated tutors. Notably, a 4-year evaluation (Thrower et al., 2023) of the workshop reported significant motivational, cognitive, and emotion-related impacts on parents and their children. Such insights were

accompanied by experiential skills gained by the researchers and an understanding of the value of co-design with national governing body staff and parents. This enabled ongoing iterations and workshop enhancements that maintained the currency and impact of the workshop over such an extended period (Thrower et al., 2023).

Targeting Psychosocial Development Within the National Tennis Parent Strategy

As authors and deliverers of the LTA's workshop programme, the focus of discussion with the national governing body turned in 2020 to the educational progression of junior tennis parents and the matter of 'what next?' for their sport parenting journey. Resulting from this discussion, a distinct knowledge gap and opportunity emerged around how parents could be supported in their roles to enable positive youth development (PYD) in their tennis-playing children (Holt et al., 2017; Pierce et al., 2017). At that particular time, a surge in health and well-being concerns around talent environments vis-à-vis their duty of care to young people and the prevention of athlete mental health issues had captured attention at a socio-political level (see DCMS, 2017). As a result, sport organizations were being challenged to integrate more whole-person development approaches into their working practices (see Whyte, 2022). Within academia, momentum was also building around applying the concept of PYD beyond recreational and community sport programs (see Holt et al., 2017) to competitive sport environments. Sport-based PYD and life skills initiatives focused on the intentional development of psychosocial qualities through sport in order to foster positive intrapersonal and interpersonal skills that could help young athletes to thrive as people in non-sport settings (Anderson-Butcher, 2019; Bean & Forneris, 2019; Harwood, 2008). As a scientist–practitioner interested in this area, the first author and colleagues had reviewed and critiqued the youth sport scholarship that relates to parental engagement in the psychosocial development of young athletes (see Harwood et al., 2019). In this critique, we observed how sport-based PYD intervention studies situated parents and caregivers as having roles to play as external environmental assets (Hodge et al., 2017) but lamented how parents had not been directly involved in any intervention at that time. We noted that "the literature falls short of illustrating how parents can intentionally and proactively contribute to their child's psychosocial development" (Harwood et al., 2019, p. 69) and urged organizations to involve parents more explicitly in the psychosocial development process as significant others. Specifically, it was necessary to sensitize parents to the psychosocial qualities and life skills that may be derived through sport (Neely & Holt, 2014), to gain parents' perspectives on how they could explicitly support their child's development of particular attributes, and offer ideas and recommendations around sport-specific strategies. We also advocated the potential of qualitative or mixed-methods research for affording scholars the opportunity to understand how parents can be supported and integrated into the development of their child's psychosocial assets as part of their sport programme involvement (Harwood et al., 2019).

To lead on this call-to-action within the context of advancing the LTA's parent support programme, the primary author drew on the relevance and accessibility of the 5Cs psychosocial framework (i.e., commitment, communication, concentration, control, confidence; Harwood, 2008; Harwood et al., 2015), which had been embedded successfully into English football academy environments and had become a prominent vehicle for educating coaches in the process of introducing and applying psychosocial concepts to their players (see Harwood, 2008; Harwood & Anderson, 2015; Steptoe et al., 2019). The framework targets the shaping and development of desired psychosocial behaviours in athletes that are associated with established motivational, interpersonal, attentional, and self-regulatory concepts. Such concepts are rooted in established theories of talent development. For example, fostering a young athlete's 'Commitment' draws upon the salience of task-involvement and shaping

intrinsically motivated behaviours aligned with the principles of achievement goal theory (Nicholls, 1989) and self-determination theory (Deci & Ryan, 1985). Prior research on the 5Cs largely targeted coaches as key conduits to player development, and the involvement of parents in this educational process was often limited to the strategic foresight of the organisational leader/head coach in the talent development environment (see Harwood & Porter, 2026; Kramers et al., 2023 for positive examples). With respect to the LTA as a proactive organisation, it recognised the value of a PYD-centred approach and the potential of a parent-centred workshop focused on supporting the psychosocial development of parents' children through tennis.

With this background in mind, and drawing on the principles of Educational Design Research (EDR; see McKenney & Reeves, 2019), the purpose of this article is to provide an in-depth science-to-practice illustration of the development, implementation, initial evaluation, and evolution of the parent education workshop based on the 5Cs framework (Harwood, 2008; Harwood & Porter, 2026) delivered within British junior tennis. Specifically, this paper aims to: (a) outline the psychosocial content and interactive features incorporated within workshop design and refined through a process of participant engagement; (b) present initial quantitative and qualitative evaluations of the 5Cs workshop delivered to parents over a 2.5-year period; and (c) illustrate the influence of participant feedback on further organisational initiatives and how subsequent participatory research with a cross-section of parents facilitated additional 5Cs resource development for families in tennis.

2. Materials and Methods

2.1. Methodology

2.1.1. Philosophical Approach and Research Design

Workshop construction and research activities in this paper were conducted from a pragmatic philosophical perspective. Pragmatists use research findings to solve practical "real-world" problems and improve the human experience. In this respect, pragmatists adopt a relativist ontological position (i.e., truth is what works at the time) and focus on the practical consequences and outcomes of inquiry (Creswell & Creswell, 2017; Poucher et al., 2019). Noting how knowledge is shaped through active engagement and refined through practical outcomes, we were interested in creating a workshop that raised parents' awareness of psychosocial concepts aligned to the 5Cs and sharing psychoeducational strategies with parents to enhance their support role in tennis. We believe that knowledge is optimally generated through cycles of design, implementation, evaluation, and redesign in partnership with the end user; hence, parents not only served as consumers of the workshop but also served as active participants in the design process through various stages of this project.

Aligned with our pragmatic position, EDR was adopted as the methodological framework for the current project. EDR is characterised by the iterative development of solutions to complex educational problems while simultaneously generating knowledge that can inform future practice (McKenney & Reeves, 2013, 2019).

As a scientist–practitioner, the first author was drawn to EDR due to its emphasis on the practitioner–researcher interfacing through cycles of needs analysis, design, implementation, evaluation, and refinement in a defined community setting (i.e., junior tennis) and in collaboration with key stakeholders. Three core phases are typical of EDR—(i) the analysis and exploration phase, (ii) the design and construction phase, and (iii) the evaluation and reflection phase. Figure 1 presents the full EDR process applied to this project, with more specific details of activities and results in each phase provided in the forthcoming sections of the article.

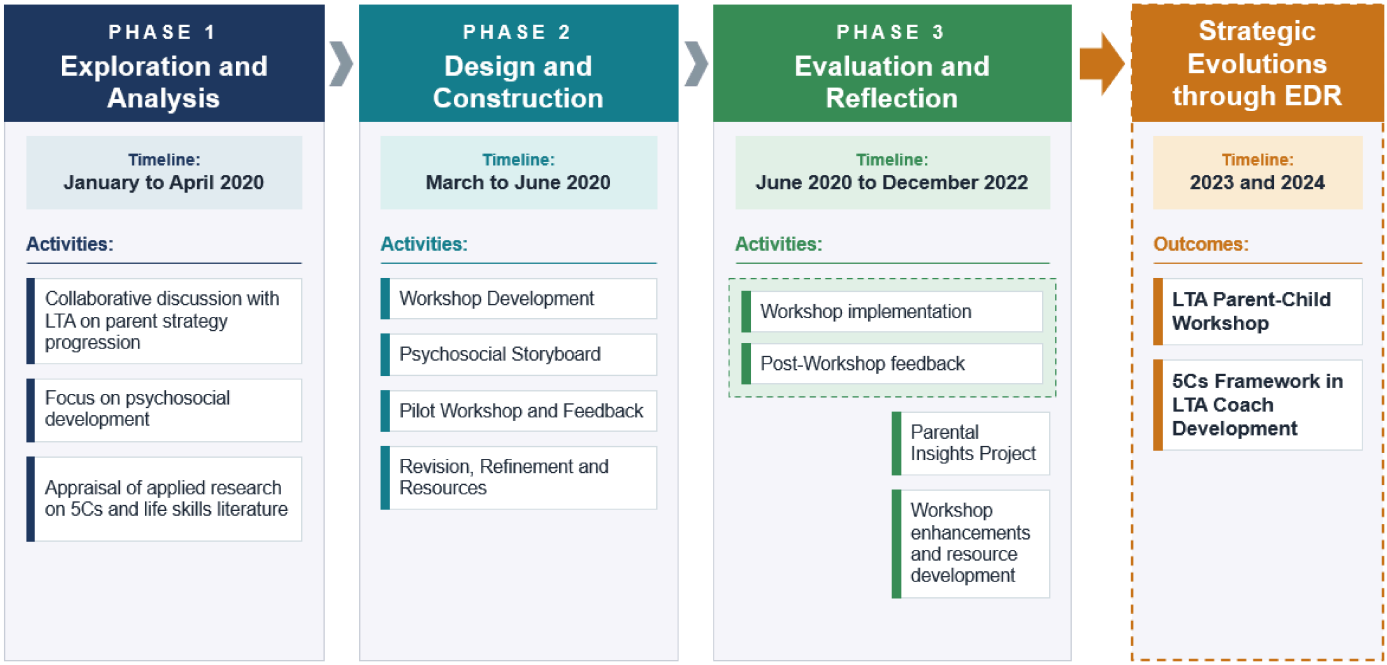


Figure 1. Educational design research process for the 5Cs Sport Parenting Workshop in Tennis.

The *analysis and exploration* phase brought together the National Governing Body staff with ourselves as researchers and practitioners to appraise and advocate knowledge around psychosocial development and PYD as a timely, necessary, and relevant progression to the LTA parent education strategy. Prior experience and effective application of the 5Cs framework in youth football with parents (Harwood et al., 2015; Kramers et al., 2023) presented the academic and national governing body collaborators with an opportunity to tailor and extend the model to junior tennis.

The *design and construction* phase of EDR involved building the educational workshop. It demanded attention to the specific and interactive ways that psychosocial and PYD concepts (i.e., through the 5Cs) could be communicated through the development of an initial two-hour workshop.

The *evaluation and reflection* phase incorporated the implementation of the workshop for the parent as a consumer and their evaluations of factors such as workshop practicality, relevance, and the utility value of the framework. Practitioner reflections and participant feedback together served to prompt iterative adaptations, improvements, and further organisational initiatives, as noted later in the article.

In sum, through the development and delivery of educational content, refined through parent feedback and co-design activities, the project aimed to meet the identified needs of the organisation alongside a sustainable and tailored solution for the end user (i.e., tennis parent).

2.1.2. The Research Team

The first author is a white male Health and Care Professions Council (HCPC)-registered Sport and Exercise Psychologist in the UK. As a scientist–practitioner, experienced in qualitative and mixed-methods research, he has researched and consulted within the field of youth sport for 33 years. With extensive knowledge of junior tennis settings, sport parenting science, and the 5Cs framework, he led the design and delivery of the project, data collection, analysis, write-up, and manuscript completion. The second author is a white male sport and exercise psychology academic with over 10 years of experience designing, delivering, and evaluating sport parent interventions using both qualitative and

mixed-method designs. For the current project, he assisted with the LTA workshop delivery process, data collection, and acted as a 'critical friend' throughout the project.

2.1.3. Context

This project took place within the context of British junior tennis and the organisational structure of the LTA's emerging national parent tennis programme. This programme comprised a range of educational resources within a 'Parents Area' (e.g., guidance, readings, workshops, recorded webinars, and courses) linked to the LTA Youth Compete initiative (see https://www.lta.org.uk/play/parents-area/, accessed on 20 July 2026). While any parent or adult LTA member could register for the free workshops, the overall programme was targeted at and recommended for parents of children aged 9–14 who were deemed regularly competing juniors (n = 15,000). Following on from the effectiveness and reach of the 'Competition Parenting Workshop' [which was later converted into an online course], the development and delivery of the 5Cs workshop would serve as the next educational step on the tennis parent journey.

The following Results section presents the processes and outcomes pertaining to each of the EDR phases, with a specific focus on Phase 2 and Phase 3, following the collective decision in Phase 1 to apply the 5Cs as a relevant vehicle for psychosocial education (see Figure 1).

3. Results

3.1. Phases 1 and 2: Moving from Exploration to Workshop Construction

With the organisational decision made to focus on psychosocial development through the 5Cs framework in the EDR analysis and exploration phase, the team transitioned to Phase 2, focused on workshop design and construction. The development of the workshop comprised three sub-stages: (a) Building the Psychosocial Storyboard; (b) Piloting through Stakeholder Involvement; and (c) Refinement and Resources. These stages underpinned the final ppt. slide deck, interactive tasks, pre- and post-workshop support resources, which would represent the subsequent implementation and delivery of the workshop as a two-hour online webinar to parents in Phase 3.

3.1.1. Building the Psychosocial Storyboard

The starting point of workshop development centred on establishing learning outcomes associated with (a) raising parental awareness of psychosocial characteristics and life skills that are mutually necessary for and shaped by engagement in tennis; (b) building confidence in parental roles through increased knowledge of salient psychosocial behaviours; and (c) exploring practical strategies for parents to influence their child's psychosocial behaviour through parent–child interactions (see Table 1).

Drawing from the exploration and analysis phase, these outcomes underpinned the storyboard forming the pilot workshop content and mirrored Harwood's approach to educating coaches about the 5Cs (Harwood, 2008; Harwood & Anderson, 2015) through an 'awareness-to-knowledge-to-action' cycle. Progressing through the storyboard, the workshop leader (i.e., the first author) would illustrate to parents how the psychological and task-based demands of tennis as an open-skilled, individual sport inform the psychological and social skills that are necessary to develop within young players. An interactive ice-breaker task, with parents discussing and debating how these elements of tennis underpin specific psychological skills and attributes, would seek to raise the energy and interest of parents. With this energy elevated, the workshop would transition to a more 'sobering reinforcement' around the salient role of parents in the context of 'duty of care' (DCMS, 2017) and the fact that that player development is more than simply 'athlete development'

through competition. Illustrating how the 'tennis journey is not the only journey', a slide (see Figure 2) depicts how the young 'person' is negotiating childhood, adolescence, and identity formation—transitions that are facilitated by holistic attention to psychosocial skills and positive prosocial behaviours (Anderson-Butcher, 2019).

Table 1. Initial 5Cs Workshop: Learning outcomes, content, and processes.

Supporting your Child's Psychosocial Development through Tennis: Proactive Parenting and the 5Cs **Learning Outcomes**		
Parental awareness of psychosocial characteristics and life skills	Increased knowledge of psychosocial characteristics, behaviours and opportunities associated with tennis	Practical strategies for parents to influence psychosocial development through parent-child interactions
Indicative Content and Delivery Processes		
• Welcome, Introduction and Learning Objectives • Reinforcing the scope of youth sport psychology • Understanding the psychological demands of tennis *(Interactive group task)* • Group feedback and role of relevant psychological and social skills for junior players • Importance of holistic development and Duty of Care (DCMS, 2017) to support player well-being • Attention to psychosocial development: "The tennis journey is not the only journey" (see Figure 2) • Life skills that can be developed through tennis (Cronin & Allen, 2017)	• Rationale for Harwood's (2008) work in youth academy soccer • Accessibility of the 5Cs framework as a vehicle for the intentional development of key motivational, interpersonal and self-regulatory characteristics in players. • Propose positive C-related behaviours in tennis *(Interactive group task)* • Group feedback, discussion and identification of positive C-related behaviours **Break (10 min)**	• Importance of creating a positive and proactive psychosocial environment (i.e., a 5Cs climate) for training and competition • 'How can you create a 5Cs climate as parents?' *(Interactive group task)* • Group feedback and discussion of goal-related, direct support, reinforcement and relational strategies • Presenter reveal of further example behavioural strategies linked to each 'C' • Interlinking of the 5Cs framework to Cronin's Life Skills framework (Cronin & Allen, 2017) • 'Making the transfer link'. *Open group discussion* of how C-related behaviours in tennis can be reinforced in non-tennis settings. • Conclusion and encouragement for parent-child C-related process goal setting in tennis

Such qualities represent the life skills journey (Bean & Forneris, 2019) and what Schulman and Davies (2007) note: "the acquisition of the knowledge, skills, competencies, and experiences required to successfully transition from adolescence to adulthood" (p. 4). These qualities would be emphasised as separate from the end result of tennis matches, but reinforced as assets and 'processes' that can help performance consistency, and be nurtured through training and competition experiences in the sport. Importantly, the support environment (e.g., coaches, parents, and organisational staff) needs to demonstrate 'belief' in the relevance of the bottom and middle layers and then actively 'value' such elements with attentional and financial resources. In such environments, where proactive attention is given to the psychological demands of tennis and the psychosocial development of young people through the game (the bottom and middle layers), the player would have a greater chance of (a) a high-quality tennis experience and (b) sustained well-being over time.

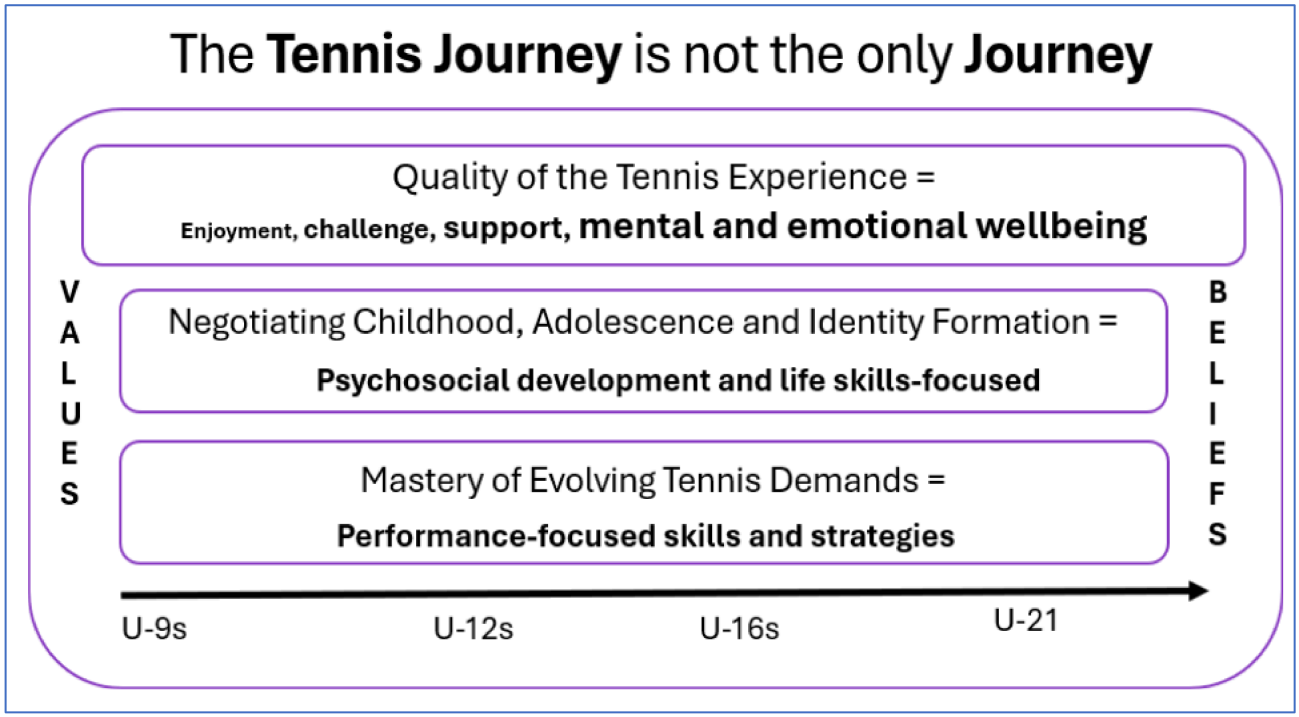


Figure 2. Workshop slide illustrating the importance of attention to psychosocial development beyond athlete development.

Following attention to the value of a psychosocial approach, the presenter would offer an evidence-based example of Harwood's (2008) work in youth academy soccer and the utility of the 5Cs framework as a vehicle for the intentional development of key motivational, interpersonal, and self-regulatory characteristics in players. Subsequently, a second interactive task would engage parents in proposing behaviours in tennis that they felt represented each 'C' in turn, prior to the presenter revealing an indicative list of positive example behaviours. Following a 10 min break, the next section of the workshop prompted parents to consider how they could create a positive and proactive psychosocial environment (i.e., a 5Cs climate) through either direct support strategies or their behavioural interactions and responses to their child in training and competition contexts. With parental insights shared and discussed, the presenter would then reveal a range of example behavioural strategies linked to each 'C' (e.g., Control: praising a player when they use time to take a breath to compose themselves after a mistake) that parents could deploy at home, in training, and during and after matches.

In the final section, the presenter would interlink and reinforce the 5Cs framework with Cronin's Life Skills framework (Cronin & Allen, 2017), illustrating to parents how behaviours pursuant to the 5Cs mirror attention to developing life skills such as goal setting, communication, emotional skills, teamwork, leadership, social skills, and problem-solving through tennis. Closing points would emphasise the intentional nature of considering behaviours and actions that players and parents could agree on together as tennis-related goals within training and matches and which could be transferred and practised in other settings such as school and the home.

3.1.2. Piloting Through Stakeholder Involvement

In keeping with the iterative and collaborative principles of EDR, this pilot 5Cs workshop was delivered to a stakeholder group (five mothers; four fathers) of parents of regularly competing juniors aged 10–13 years. These parents were recruited by the LTA via the primary author's connections to geographically local LTA tennis coaches, centres, and clubs.

The LTA promoted the opportunity to parents at these local venues to register and attend the workshop. Importantly, all parents were required to have completed the LTA's Competition Parenting Workshop in order to make them suitable participants in the formative evaluation and refinement of the workshop prior to formal implementation (McKenney & Reeves, 2021). Parents were briefed on the purpose of attending the two-hour workshop as an opportunity to provide feedback on the relevance, delivery, and utility value of the content as part of the LTA's ongoing educational strategy. Nine parents registered and attended the workshop, with only one parent being known to the primary author as a former player. In line with focus group guidance (i.e., 4 to 10 participants; Smith & Sparkes, 2016), facilitating post-workshop shared discussion with nine parents was deemed to be an appropriate approach for garnering a range of perspectives on the pilot workshop and its delivery.

The workshop was held in person and delivered by the primary author at their university tennis centre. At the end of the workshop, a 30 min open discussion followed, during which parents were asked to share constructive feedback on the workshop content, interactive activities, sequencing, pacing, and overall delivery. The primary author took written and annotated notes on slides, and parents were invited to share any further feedback via email in the week that followed. This feedback subsequently informed several iterative refinements to the educational process of the workshop.

3.1.3. Refinement and Resources

The value of the pilot workshop in terms of improving awareness, knowledge, and prospective confidence in influencing the psychosocial development of their child was reinforced by all parents. However, several constructive pieces of feedback arose that both prompted the creation of additional material and augmented the final workshop process in important ways. While maintaining the elemental structure of the initial workshop, these additional changes and revisions are presented in Table 2. Firstly, adjustments were made to the title because parents felt the workshop would help them '*nurture*' their child's psychosocial skills by applying the principles of the 5Cs. Feedback also suggested that while the presenter might explain broader learning outcomes verbally, a slide covering specific, progressive aims would be useful as a sequential guide through the workshop. One key observation from parents was the benefit of a pre-workshop primer (i.e., PDF booklet) that could introduce parents to the workshop background and orientate their developmental roles. Parents based this observation on having received a pre-workshop primer for the Competition Parenting Workshop and felt this new workshop should coherently align to help parents optimise their learning. To that end, a four-page pre-workshop primer was written, within which we reinforced how tennis experiences offer children more than simply performative and result-based information. Specifically, we posited how coaching, training, and competitions represent contexts rich in social and identity-building experiences that parents can reinforce for psychosocial development, and that we would explore such themes in the workshop. Parents would receive this PDF booklet upon registration prior to the course.

When discussing the psychological demands of tennis, the presenting first author noted that a key motivational challenge for young players was that tennis did not provide any individual Knowledge of Performance (KP; first serve percentage) information to a child, only Knowledge of Result (KR; the match outcome). He discussed how much more task-involving tennis [as a sport] could be if it provided more self-referenced, 'personal best' information in the performance of different qualities (e.g., a personal or season's best score (PB; SB) such as 'composure', 'respect and fair play', and 'positivity', irrespective of the match result. Parents appreciated and recognised how they could praise and reward

their child for mastery of processes, rather than outcomes. To visualise this better, however, the first author created 'an alternate reality tennis knockout draw' where he could illustrate how players scored PBs or SBs in psychosocial qualities [as rated by the crowd] alongside the match result. The message to parents was that they could do this exercise for their child by discussing and rating agreed, controllable process goals for the match.

Table 2. Final 5Cs Workshop: refinements following stakeholder feedback.

Nurturing your Child's Psychosocial Skills through Tennis: Applying the 5Cs Approach			
Learning Outcomes			
Parental awareness of psychosocial characteristics and life skills	Increased knowledge of psychosocial characteristics, behaviours and opportunities associated with tennis		Practical strategies for parents to influence psychosocial development through parent-child interactions
Workshop Aims			
Reinforce the role that parents play in the holistic development of your children *through* tennis	Explore parent's perceptions of positive psychosocial development for your 'sporting' child's well-being and independence	Introduce the 5Cs as a framework to guide your creation of a positive tennis climate	Identify the range of strategies that can nurture child's psychological and social skills 'in, through, and beyond' tennis
Additional Slide Content and Delivery Processes in each Segment			
• Four-page Pre-Workshop Primer • Alternate reality tennis knockout draw illustrating how players achieved personal or season's bests (PB;SB) in 'composure', 'respect and fair play', 'positivity' irrespective of the match-result. • Implicit vs Explicit approaches. How do we shape development in tennis? *(Interactive group task and follow-up discussion)* (Pierce et al., 2017)	• 'The Domed World' task: What attributes do you want to see that tennis has developed by 18 years old? *(Interactive group task)* • Group feedback, and alignment of the attributes as psychosocial and grow-able through tennis		• Live model examples of strategies from other sports (e.g., 5C Bingo cards; 5C superheroes) • Worked example of 5Cs pre-match goal setting and review sheet in tennis

Additional interactive activities emerging from the pilot process included a short debate as to whether psychosocial skills are learned implicitly (i.e., naturally shaped by tennis) or explicitly (i.e., through intentional teaching and support; Pierce et al., 2017). This was followed by the 'Domed world' task, in which parents were asked about the attributes or qualities they wanted to see in their child if they existed in a 'Domed world' where there were only school and tennis situations until the age of 18 [when the dome disappeared]. This prompted parents to share valued psychosocial qualities and how they could be nurtured through tennis contexts. Further feedback for the final sections led to illustrations of model examples for the 5Cs (e.g., 5C Bingo cards; Steptoe et al., 2019) and included a completed 5C match goal-setting sheet and a blank template that could be used by parents and children as part of pre-competition preparation and review.

3.2. Phase 3: Evaluation, Reflection and Evolution

3.2.1. Workshop Implementation and Evaluation

With refinements completed and further resources developed, the LTA promoted the 5Cs Parent workshop as a free 2 h online course delivered over Zoom from the summer of 2020 after the first COVID-19 lockdown. This online workshop was only available to parents if and when they had completed the prior LTA Competition Parenting Workshop as part

of their tennis parent development pathway. Over the next 2.5 years, 10 free workshops were delivered by the first author, supported by the second author, on a broadly quarterly basis to a collective total of 255 parents who both registered via the LTA portal and then subsequently attended the course online.

Following workshop attendance, and as part of routine organisational communication and service evaluation, parents were contacted by the LTA via email, and the workshop slide handout was shared with attendees. These parents were invited by the LTA and given the option to voluntarily complete a short anonymous evaluation survey to share their perceptions of the workshop. Consistent with training evaluation research (e.g., Cooley et al., 2016) and based on Thrower et al.'s (2023) prior evaluation of the LTA Competition Parenting Workshop, this anonymous feedback survey assessed parents' reactions to the workshop (i.e., satisfaction; enjoyment), quality of delivery (i.e., Level 1; Kirkpatrick, 1994), their intention to transfer learning to their child, and perceived value for coaches. Specifically, aligned with Thrower et al.'s (2023) approach, workshop satisfaction was measured using two composite items (e.g., "overall the workshop was excellent" and "I would recommend the workshop to a friend". Enjoyment and utility value were measured using two items (i.e., "I enjoyed the activities (e.g., pre-webinar booklet and interactive tasks) very much" and "the activities were useful to do"). Tutor evaluation and delivery w assessed using two items (i.e., "overall the tutor was excellent" and "I would recommend this tutor to a friend". Drawing upon the theory of planned behaviour (Ajzen, 1991), transfer intention was measured using two items (i.e., "I intend to use the knowledge I gained to help my child develop their 5Cs" and "I will try to use the strategies provided to help my child develop their 5Cs"). Finally, perceived value for coaches was captured by a single item—"It would be beneficial for coaches to be educated on the 5Cs". All items were rated using a Likert scale from 1 (not at all true) and 7 (very true), with a final open-ended question for parents to share their anonymous experiences of the webinar and how it could be improved. Data screening, coding and descriptive analyses were conducted using Microsoft Excel (Version 365; Microsoft Corporation, Redmond, WA, USA).

3.2.2. Results of Quantitative Feedback

A total of 101 parents ($n = 61$ mothers; 40 fathers; $M_{age} = 46.5$ years) of the 255 attendees (response rate: 39.6%) voluntarily completed the anonymous LTA post-workshop survey over the course of the 2.5-year period. These parents supported children at club ($n = 17$), county ($n = 68$), regional ($n = 10$) and national ($n = 6$) levels. Four parents noted that their children were over 18 years old, while the remaining parents' children were aged between 7 and 16 years ($n = 97$, $M_{age} = 10.3$ years; SD = 1.89), showing close alignment with the target age range of the LTA parent support strategy. Over this period, results collectively indicated highly positive perceptions of the workshop, its delivery, and its influence on parental intentions towards strategies related to the psychosocial development of their child. Please refer to Table 3 for a descriptive summary, with a number of median responses reaching the ceiling of the scale, including tutor delivery, intentions to transfer learning, and perceived value to coaches.

Table 3. Descriptive statistics for parent workshop evaluation measures.

Measure	n	M	SD	Md	r
Workshop satisfaction	101	6.28	1.15	6.50	0.90
Enjoyment and utility value	100	5.82	1.16	6.00	0.81
Tutor delivery	101	6.46	1.17	7.00	0.98

Table 3. *Cont.*

Measure	n	M	SD	Md	r
Transfer intentions	99	6.48	1.20	7.00	0.98
Value for coaches	100	6.55	1.24	7.00	—

Note. Responses were recorded on a 7-point Likert scale. M = composite mean; SD = standard deviation; Md = composite median; r = inter-item reliability coefficient.

3.2.3. Results of Qualitative Feedback

A total of 45 parents voluntarily responded to the open-ended question focused on participants' workshop experience and recommendations for improvement. In line with previous studies evaluating parent workshop feedback (i.e., Thrower et al., 2023), qualitative data were analysed by the first author using template analysis (aka codebook analysis; Braun & Clarke, 2021). Template analysis (see Brooks et al., 2015) is widely used in pragmatic applied research and combines the principles of thematic analysis with a more structured or systematic approach to meet specific predetermined information needs (e.g., general perceptions of the workshop, feedback on workshop content, activities and examples, etc.; Braun & Clarke, 2021). Specifically, all parent responses were read to promote familiarity with the data. Second, prior themes were identified based on the 5Cs workshop, and wider project and used to inform preliminary coding on a subset of the data. Third, initial themes were organised into meaningful and contextually located clusters. Fourth, these clusters were subsequently defined (e.g., online workshop delivery) and formed an initial coding template. Penultimately, this initial coding template was then used to analyse further data and modified (e.g., inserting new themes, merging themes). Finally, the finalized template was subsequently applied to analyze the data set (see Brooks et al., 2015). Through this analytical process, the second author acted as a 'critical friend' (Smith & McGannon, 2018) to encourage reflexivity and (critically) challenge the first author's analytic interpretations of parents' perceptions. The resulting four themes are outlined below:

General Perceptions of the Workshop. Parents consistently described the 5Cs as 'insightful', 'thought-provoking', and 'highly relevant' to their child's tennis development. Many reported that the framework helped them re-evaluate their role, understand their child's psychological needs, and identify new ways to support them. Noting its utility value and holistic intentions, one parent wrote: "There are lots of things to reflect on and to implement, and it is really useful to refocus the tennis process as whole person development".

Workshop Content, Activities and Examples. Parents valued the practical activities and examples provided in the workshop but repeatedly asked for further actionable guidance beyond an introduction to the concept and strategic discussions and ideas in the time available. Parents proposed the development of tennis-specific scripts, scenarios, and case studies that would help them understand more exactly what to say in a specific situation. One parent noted: "I'd really enjoy a face-to-face session with case studies and role plays," while another said: "It would be great to have printable resources and more take-home materials".

Online Workshop Delivery. Parents generally liked the online Zoom format, with many being both happy and 'pleasantly surprised' by its effectiveness in the context of a COVID/post-COVID era. However, parents suggested the value of even more interaction, greater time for questions, and a better balance between the first and second halves of the session. One parent shared: "I would have preferred to unmute to ask questions rather than typing", while another stated: "A little more time at the end for Q&A would have been good." Some parents stated that the first half, which was devoted more to concepts, felt 'heavy' or 'long' and recommended shortening this section to allow for more questions or more interactive polling and sharing of experiences.

Future Educational Needs and Wants. Many parents expressed a desire for children to receive the same education, either through player-only workshops or, more preferably, joint parent–child sessions. It is important to note that some parents involved their children informally in the workshop and found it beneficial. However, they felt that the shared language and understanding would strengthen the impact of the 5Cs. Several parents posited that their children needed to learn about the 5Cs from an "external source" to take it seriously, with one parent stating: "There needs to be a child-friendly version... my child wouldn't 100% believe this concept if introduced by me."

Similarly, and aligned with the quantitative findings, parents also emphasised the role of the coach in the development of and attention to the 5Cs in players, noting how "coaches should provide psychological training too, not only the technical skills training". Parents sought alignment between home, coaching, and competition settings when it came to the 5Cs, affirming the importance of reinforcing the same messages to help embed the framework into on-court training. Regarding the education of the 5Cs to coaches, one parent noted: "It would be really useful if my child's coach could be involved", while another asserted: "I would really want tennis coaches to do all the parent workshops", ensuring consistency of integration across the tennis environment.

3.2.4. Strategic Evolutions Through Stakeholder Engagement

The ongoing, evaluative feedback from parents about the workshop and the observations regarding the wider involvement of players and coaches prompted several progressive initiatives. Such initiatives represented not only direct evolutions of the workshop and its resources, but also the wider LTA strategy in the area of parent, coach, and player development.

5C Analogies and Behaviours Quiz. Drawing specifically on parents' feedback requesting further practical ways of communicating the 5Cs and example scenarios, we integrated a passenger aeroplane image and analogy into the slide deck. The analogy referred to how tennis psychologically challenges players in terms of their motivation, attention, emotion, and interpersonal responses, and that players need their four [psychosocial] jet engines (i.e., commitment, concentration, control, and communication) working together to fly smoothly with 'confidence' as the nose cone! This allowed parents to also talk about pre-flight checks and the need for all engines to be ready and fuelled with clear goals and a direction of travel. Further, in response to parents' requests for scenarios but mindful of the limited time available, we decided that an interactive knowledge-check activity at the end would serve as an informative and valuable reminder of content. To that end, we created a slide where parents were presented with five short scenarios that depicted a parent demonstrating behaviour that would shape a particular 'C' in the player (e.g., confidence; the parent praises their child for continuing to make brave decisions when the score was close at the end of a match). Parents were asked to select which 'C-in-Action' they were showing as part of their 5Cs parenting climate before the presenter would reveal and discuss the answers.

5Cs Parental Insights Project. Continuing the collaborative nature of the strategy and based on parents' feedback emerging through the first year of the workshops, a small-scale research insights project was conducted that invited parents' own perceptions of tennis-specific 5Cs behaviours that they considered salient and relevant to nurture and reinforce. Through this exercise, we sought to respond to parents' requests to develop more contextual resources where the solution was co-created by parents as informed consumers of the game. Following ethical approval from the Loughborough University Research Ethics Sub-Committee (ID: 2021-1581-4137), the LTA Competitions Manager acted as the conduit for the recruitment of participants by contacting parents who had attended a prior 5Cs workshop. These parents were notified about the opportunity to contribute in greater

depth to a follow-up initiative and provided with links to relevant participant information and informed consent forms. Informed consent for participation was obtained from all parents who subsequently participated in this final phase. An online survey captured basic demographic details before providing parents with a brief reminder and definition of each 'C'. Using open-ended response options, parents were then asked to consider up to five examples of situational behaviours or actions representative of each individual 'C' in turn that they perceived as important for a young person to develop and exhibit consistently. Parents were encouraged to consider behaviours that could occur across contexts—within coaching and training sessions, as well as before, during, and after matches or tournaments.

The LTA invited those parents who had completed the workshop during its first year and up to the end of 2021 (a pool of approximately 120 parents). In total, 20 parents (n = 15 mothers; five fathers; M_{age}: 43 years) responded to the request from the LTA with the survey closing after 7 months due to the sufficient amount of insights that this sample had offered. As in the prior evaluation, data from the Parent Insights Project were analysed using template analysis by the first author (Brooks et al., 2015). Across the 20 parents, between 72 and 95 salient behaviours were proposed for each of the 5Cs. After reading each behaviour to promote familiarity, preliminary coding was conducted on a subset of the data pertaining to each individual 'C'. Initial themes were then organised by each C and within contextually located clusters (e.g., related to home, training, pre-competition, during competition, and post-competition) in each C category. These clusters were then defined (e.g., commitment: 'being prepared through having packed all equipment necessary') and formed the coding template, which was used to analyse the remaining data and was modified (e.g., by inserting new themes and merging contextual themes). The finalized template was subsequently applied to analyse the full dataset (see Table 4). Each of the 5Cs, represented by these behavioural clusters, subsequently formed a new PDF resource booklet for parents and children to be shared as part of the ongoing LTA strategy. As above, the second author also acted as a 'critical friend' during this analytical process.

A Joint Parent–Child Workshop. As a direct result of Phase 3 feedback, the LTA supported the development of an online workshop that enabled parents and children to collaborate together. Entitled 'Working together for a mental advantage', this one-hour online webinar integrated some of the key elements and messages of the prior parent-focused workshops, allowing players to listen and engage alongside their parents. From 2022, we delivered this workshop twice yearly to over 150 families until LTA-wide strategic planning in 2024 paused education activities for two years. All online workshops are now recommencing at the time of writing with a renewed parent support campaign.

5Cs Coach Development Initiatives. Alongside the parent–child workshop, further reach and implementation outcomes emerged in terms of coach education. Through Phase 3 feedback and ongoing discussion between the LTA Competitions and LTA Coach Development departments, responsive initiatives integrated the principles of the 5Cs into the national governing body's coach education programme. As a result of this work, the 5Cs concepts were introduced into the LTA Level 1 national coaching award. Subsequently, in 2024, the first author and the LTA Head of Coach Development collaborated to develop a 3 h on-court 5Cs mental skills workshop for coaches as part of a nationwide LTA roadshow across the 43 counties of the United Kingdom. This initiative reached 1300 coaches who registered and attended the workshop in their county (LTA Head of Coach Development, personal communication, May).

Table 4. Behavioural clusters generated from parental insights for 5Cs.

Commitment	Communication	Concentration	Control	Confidence
1. Actively seeking out learning opportunities with a clear sense of looking forward to practices and matches 2. Being prepared through having packed all equipment necessary (e.g., rackets strung; extra gear, drinks) 3. Warming up, stretching and cooling down consistently for health, performance and injury prevention 4. Showing persistence, determination and engagement in training and matches with respect and competitiveness 5. Being open to learning, listening to and applying feedback to improve your game 6. Practicing reflection and spending time to learn from the experience in order to set goals and take opportunities	1. Acknowledging good shots and efforts from teammate(s) or opponent 2. Interacting with opponents, officials, coaches, and others in a calm and sociable manner around tournaments 3. Being able to articulate feelings to others and/or ask questions in a polite and curious manner in practice and competition 4. A constant and clear willingness to speak openly to coaches and listen within training and after matches 5. Maintaining a positive attitude in interactions with others after a tough match or a difficult loss 6. Being empathetic, and supportive of teammates—acknowledging and understanding others' feelings	1. Understanding and paying attention to what is directly relevant to help your performance at the time (i.e., the ball, footwork, opponent, your towel, tactics) 2. Listening with care and respect to the coach, maintaining eye contact, and then applying the information as next steps 3. Developing clear and consistent routines before, during and after matches that help your mental structure. 4. Mentally or physically rehearsing specific shots or situations to sharpen attention in game situations 5. Recognising quickly when you are dwelling on previous mistakes, time traveling to a future or past score, or drifting off-match and being able to reset to the present moment	1. Being aware of your emotions, naming them, discussing them and understanding them as part of self-awareness for match situations 2. Taking responsibility for your emotions and why they are present in order to actively cope with them in practice and matches 3. Creating an awareness of your self-talk and what positive, helpful ***versus*** negative, un-helpful self-talk occurs within training and matches 4. Practicing breathing techniques on-court and off-court to reset or create a state of greater composure and calmness 5. Using physical actions and props as part of your routine (strings, towel, ball logo) to narrow focus and disperse emotions and reset 6. Recognizing the emotions of others to help partners or use opponent's emotions to your advantage.	1. Always having a willingness to try new things and embrace a new on-court situation with a show of initiative 2. Focusing on your strengths to work through and persist in challenging or difficult training and match situations 3. Maintaining a positive physical presence on court and using encouraging self-talk or coaching to drive your performance 4. Making courageous or brave decisions when the match situation demands it, and moving beyond fearful shot selections 5. Showing how losing acts as a learning experience from which, you can grow, and taking responsibility to learn from a loss as much as you can 6. Initiating conversation with other players and taking a leadership role in a group/team when it is needed

4. General Discussion

This article sought to offer a detailed illustration of the development, implementation, and initial evaluation of a national governing body's sport parent education workshop based on the 5Cs framework (Harwood, 2008; Harwood & Porter, 2026) delivered within British junior tennis. Through the benefit of ongoing stakeholder engagement, it also demonstrated the evolution of the workshop, the educational resource offered to parents, and the impact of feedback on the development of complementary initiatives with players and coaches.

The principles of educational design research (McKenney & Reeves, 2019) have seldom been applied within the field of sport psychology. Yet participant (i.e., parent) evaluations and subsequent outcomes of this four-year process demonstrate the value of scientist–practitioners designing and refining sport-specific psychosocial education through responsive collaboration with the 'end users'.

Informed by McKenney and Reeves' (2019) three core phases of EDR, the process demanded attention to the specific and interactive ways that psychosocial and PYD concepts (i.e., through the 5Cs) could be communicated through an initial two-hour workshop. The

pilot workshop feedback enabled salient refinements and additions (see Figure 2; Table 2), offering readers a blueprint for the content of education sessions focused on enhancing sport parent role-knowledge and confidence. Delivered nationally over 2.5 years, post-workshop evaluations reinforced the relevance and utility value of the framework, with perceptions of workshop content and delivery associated with positive parental intentions to engage with knowledge and strategies around the 5Cs with their child. Furthermore, qualitative feedback offered important insights into actionable improvements around interactive content and the balance of theory and practical suggestions, as well as recommendations for parent–child sessions and extending the workshop content to coaches. Consistent with previous interventions (e.g., Thrower et al., 2017), which have integrated parent recommendations to improve outcomes, this phase led directly to specific workshop adaptations, further practical resource development driven by parent perceptions, a new parent–child collaborative session, and integration of the 5Cs framework into coach development initiatives. The impetus created by this sequence of parent-centred activities post-COVID-19 facilitated a recent intervention by Harwood and Porter (2026) at an LTA Regional Performance Development Centre, where a sport psychologist integrated the 5Cs framework across a 30-week programme with coaches, players, and parents together. Congruent findings were generated from parent, coach, and player interviews about how the educational utility of the framework had enabled tailored and individualised support, improving psychosocial behaviours through a collaborative support environment. Harwood and Porter's (2026) findings reinforce how psychosocial development in tennis is best achieved by integrating parents, players, and coaches 'on the same page', a finding that echoes Kramers et al.' (2023) observations of parents in youth football.

Limitations and Future Research Directions

In an era within academia where assessments of Research Impact within the UK Research Excellence Framework (REF, 2024) are directly associated with the awarding of quality-related (QR) research funding in the UK system (e.g., the REF2029 assessment exercise), it is increasingly important for applied researchers in sport psychology to demonstrate how their work carries societal value and positive influence on relevant consumers. The processes engaged in this programme of work offer a methodology for those psychologists working within other youth sports to tailor the 5Cs content to their specific sport contexts in ways that inform parents and coaches about activities to promote healthy psychosocial development. This would facilitate the utility of the framework more widely across youth sport settings and strengthen the role of youth sport psychology in terms of the societal good within national governing body sport policy.

The limitations of this project, however, reveal the necessary and relevant scientific extensions to enable a greater understanding of the influence of parent education on athlete psychosocial development. Firstly, as a piece of design-based research, we did not incorporate quasi-experimental conditions into the fieldwork, including pre–post baseline and follow-up assessments of parental knowledge, confidence, and actual application of psychosocial strategies with their child. Parental self-reported feedback was limited to those parents who volunteered their post-workshop viewpoints as part of a convenient LTA follow-up process, and ceiling effects were evident for a number of items used to evaluate workshop content, process, and delivery. The perceptions of those parents who did not self-select were not gathered or pursued. In addition, while methodological care was taken by engaging the second author as a critical friend during qualitative analysis, the use of an independent researcher would increase the objective distance between the scientist–practitioner and the participants in the evaluation.

Such issues and reflections reinforce the salience of more controlled, longitudinal intervention research on the adoption of 5Cs strategies by parents and the effects of such strategies on child psychosocial behaviour and experiences within training and competition. Extending the research to young athletes' perceptions of their parents' behaviour and changes in their own psychosocial (i.e., 5Cs) behaviours is important and achievable through carefully designed mixed-methods research (see Teixeira et al., 2027). Such research, with ongoing behavioural support techniques (e.g., nudges; reminders) for parents, in conjunction with reward systems for positive 5Cs behaviour demonstration in children, would extend the findings of Harwood and Porter (2026). Deeper education in the form of separate online 5Cs modules for parents and children 'working together' would extend and strengthen the practical knowledge that is afforded to parents and children in single, one-off education sessions. This is a particularly salient consideration given the appetite demonstrated by parents for more practical content and guidance in terms of 'how to be a 5Cs parent' in day-to-day tennis situations. Investigating the integrated role of coaches as part of the parent–athlete–coach triad (Tagliavini et al., 2024) in creating a 5Cs environment would be an additional methodological consideration that would strengthen our understanding. Finally, the degree to which such integrated psychosocial interventions, across parents, coaches, and athletes, influence life skills development and transfer to non-sport settings in young people represents probably a gold-standard investigation at the present time in this area.

Lastly, the current project is located within a single sport, country, and national governing body context. We believe that applied researchers and practitioners should consider the strengths and limitations of the methods and processes executed here and explore how the 5Cs might be adapted to other sport settings and cultures with parents, athletes, and coaches.

In conclusion, we hope that the level of detail, the scientist–practitioner journey, and starting points offered in this long-term project illustrate the utility value of the 5Cs framework for parents. Importantly, we offer this journey as a stimulus for other applied researchers and practitioners to continue and progress the important work on the psychosocial development of athletes through key stakeholders of influence.

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Institutional Review Board Statement: In relation to the Phase 3 parental insights project, this study was conducted in accordance with the Declaration of Helsinki and approved by the Loughborough University Research Ethics Sub-Committee (ID: 2021-1581-4137; 26 May 2021). In terms of the Phase 2 pilot workshop and Phase 3 post-workshop feedback, data was collected from routine organizational service evaluation. The Phase 3 workshop evaluation consisted of pre-existing, anonymous consumer feedback data given voluntarily, collected and shared consensually by the Lawn Tennis Association. As this data and insights from the Phase 2 pilot workshop contained no personally identifiable information (PII) and was analysed strictly at an aggregate group level, it was determined to be exempt from Institutional Review Board (IRB) processes.

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