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Multi-disciplinary Teams in High Performance Sport, The What and The How: A Utopian View or a Darker Reality

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Abstract

High performance sport practitioners work as part of a cross-functional team of experts to deliver effective service to coaches and athletes. While practitioners' technical skills are highly coveted, their ability to work within a team of experts from different disciplines is poorly understood and researched in sporting contexts. Success or failure of practitioners is often the by-product of their ability to integrate into the team and maintain relationships under high pressure and in challenging environments. The objective of this study was to explore how practitioners work as part of multi-disciplinary teams (MDT) in high performance sport. Twenty-eight practitioners from different professional disciplines and sporting organizations attended five separate, virtually hosted focus groups where the researcher and participants shared their views, beliefs, and perspectives about how they approach, and what they think about when working, in MDTs. Responses were analyzed using a qualitative reflexive thematic approach, and a thematic map and four themes were identified to depict what MDTs do and how they operate. The four domain topics (the "what") were (1) Decision Making & Problem Solving; (2) Collaboration & Knowledge Sharing; (3) Interpersonal Skills & Development and (4), Leadership & Team Dynamics. The four themes for how practitioners operate (the lubricants of successful MDT working) were (1) Cognitive diversity is important but not if it slows us down, (2) Staying in your lane is encouraged however sharing and collaboration is important (3), We need psychological safety, however poor behavior keeps getting in the way, and (4) High confidence in a world of nuance and uncertainty; adaptability and context is key. The thematic map presents an idealized perspective of how practitioners' function within MDTs in high-performance sport. This utopian view contrasts with the reality that practitioners face. Their frustrations, challenges, and reflections stemming from failures paint a darker picture of their experiences, highlighting the complexities inherent in their work and flagging considerations for both practitioners and leaders.

Keywords

practitioner, leader, collaboration, sharing, psychological safety, problem-solving, decision-making

Introduction

Practitioners from different specialist professional domains work together and with coaches to form cross-functional Multi-disciplinary Teams (MDT) (Reid et al., 2004). These MDTs provide service and cross-functional problem-solving capability to support athletes and teams to achieve optimized outcomes in the pursuit of excellence. While MDTs are now commonplace in sport (Burns & Collins, 2023), there is still limited research investigating how MDT practitioners operate in practice across professional domains (Alfano & Collins, 2023) which creates a gap in our understanding of what effective teams look like (Salcinovic et al., 2022). There is, however, a strong research base exploring the effectiveness of different types of cross-functional teams (Salas et al., 2008) across both different professions; for example, healthcare (Rosen et al., 2018) and across different contexts. Indeed, Zajac et al. (2021) highlights the potential benefits of MDTs in healthcare professions yet notes working with team members from different backgrounds can be challenging, and practical barriers to teams reaching their potential do exist. The creation of research that seeks to bridge the gap between MDT approaches in different professions with that of elite sport could further enhance how teams from different professional backgrounds blend their expertise and skills to deliver integrated and aligned service in high-performance contexts.

Burns and Collins (2023) in a recent scoping review of 22 articles identify four key themes from performance support teams literature. These were theoretical frameworks, facilitative leadership and culture, logistical structures and processes, and personal and interpersonal qualities. Recently, King et al. (2024) assessed the strength of perceptions of practitioners on how they approach their work. Findings showed that practitioners face different types of problems, approach solving them in different ways, and utilize different decision-making styles. The study opened opportunities to further investigate MDT practitioners with specific focus on how they operate as part of MDTs and what they attend to. This seems pertinent given the complex nature of practitioner's work and the demands and expectations placed on them by coaches, athletes and sporting organizations (Wagstaff et al., 2015). Some literature explores various aspects of MDT work, as highlighted in Burns and Collins (2023) scoping review. However, a gap remains in understanding what practitioners *actually do* and how they *conceptualize* working within an MDT, particularly when it comes to problem-solving. Assuming that practitioners inherently know how to collaborate effectively within such teams, and treating this knowledge as "taken for granted," risks undermining both individual and team capabilities. Drawing upon those findings and the broader literature, we have created four statements/assumptions about how MDT practitioners operate in applied contexts acknowledging that elite sporting contexts are highly unique.

Statement 1: Practitioners work in teams with colleagues from different professional backgrounds.

Multi-disciplinary practice is a well-established approach in professional domains such as the medical (Seckler et al., 2020) and healthcare (Leeftink et al., 2020) industries where a significant body of research has been developed (Momsen et al., 2012; Walkenhorst et al., 2015). In professional sport, multidisciplinary teams (MDTs) are considered a standard operating practice (Reid et al., 2004), yet confusion and disagreement persist regarding the terminology used by both MDTs and sport leaders. Terminology such as mono-disciplinary, interdisciplinary, transdisciplinary (Vaughan et al., 2019) and, more recently, department of methodologies (Otte et al., 2020; Rothwell et al., 2020) are used across industry and research with similar issues cited in the healthcare literature (Martin et al., 2022). There is a desire to adopt language that reflects the nature of a cross-functional team's approach, accurately describing the type of work they do, and yet, in sport, we have not been able to articulate how MDT practitioners effectively work together (King et al., 2024).

Practitioners typically hold undergraduate and post-graduate qualifications, have professional qualifications, and are registered with a professional awarding body (Alfano & Collins, 2023). Throughout the years of education and training that a practitioner receives, limited time or attention is given to how their professional skills and expertise (Collins et al., 2015) work in combination with colleagues from other disciplines (Bartlett & Drust, 2021). In the main, practitioners are trained to deliver hard technical skills and evidence-based approaches and methods within their scope of practice (Collins et al., 2015). This poses the risk of creating a workforce of highly qualified practitioners whose knowledge remains inaccessible, whose deep expertise does not translate effectively into practice, and who are compelled to work strictly within their professional boundaries and in isolation. Consider a physiotherapist and doctor discussing clinical treatments for a complex shoulder or knee injury and seeking (or not) the views of the Strength and Conditioning (S&C) coach on relevant testing and monitoring diagnostics across a graded Return to Play (RTP). Each profession has its own domain knowledge, language and skills (Burns & Collins, 2023) that might not translate across disciplines, making it less accessible than we might think at first.

Statement 2: Practitioners who work in MDTs work together to solve complex problems and make difficult decisions.

Practitioners work with colleagues from different backgrounds and departments to solve performance problems and help bridge performance gaps (Bartlett & Drust, 2021; Woods et al., 2021). This requires a blend of cognitive and applied skills to understand the nature of the problems and then apply solutions that solve them. Problems faced by MDTs in sport are volatile, uncertain, complex and ambiguous (VUCA) (Wilson et al., 2024), chaotic (Vaughan et al., 2019), or wicked (Greenberg & Clubb, 2021; Rittel & Webber, 1973). When more people are involved with the problem, a greater number of departments or divisions and a greater number of interacting "seen and unseen" variables come into play, the more complex the problem becomes and the harder it is to find clear, simple, and testable solutions (King et al., 2024). It is likely that the very nature of MDT practitioners working together increases system complexity (Hong & Page, 2004) that in turn makes it harder to solve performance problems, yet cognitively diverse teams have been shown to create better solutions (West & Dellana, 2009) to complex problems than individual ability alone in other professional domains (Page, 2007, 2019).

As well as making decisions, practitioners are expected to provide advice to athletes, coaches, and colleagues to aid in their decision-making. Much of the work that practitioners deliver is through intuitive expertise (Kahneman & Klein, 2009; Klein, 2004; Salas et al., 2010), procedures and protocols (King et al., 2024) where they follow recipe-like checklists to deliver within their service domain. This type of process-orientated, fast decision making (Kahneman, 2011) and skilled doing (King et al., 2024) does not require rationalized, logical, and considered decision making associated with complex problems where solutions are hard to find and difficult to solve (Kahneman, 2011; Kahneman & Klein, 2009). Where there are several departments providing service to athletes and coaches (consider for example, Return to Play (RTP) immediately following injury or total training load monitoring to support a taper and peaking strategy), each department may hold insight that in isolation will only contribute to part of a picture. Analysis, discussion, and debate within the MDT, where some form of consensus of decision-making is required, is at times the only way to continue to keep moving forwards (Tee et al., 2020).

Statement 3: Practitioner teams possess diverse skills and expertise that create better solutions than could be established in isolation.

Providing "mono- or multi-disciplinary" (Otte et al., 2022) process-orientated services in isolation can deliver results to a point. Consider

a physiotherapist managing an injury back to health, a Strength & Conditioning Coach (S&C) developing a physical quality relevant to performance, a nutritionist assessing body composition and providing a detailed nutrition plan, or a performance bio-mechanist producing a race/game model or real time feedback on race execution. Practitioners can deliver in isolation, yet this would seem disjointed and a missed opportunity. At times, combinations of skills can deliver far better outcomes (Alfano & Collins, 2023; Page, 2014). Practitioners leveraging broader perspectives through other team members can help generate insight that otherwise would not be visible (Burns & Collins, 2023; Stewart et al., 2024). For example, the nutritionist's and S&C coach's isolated goals might not be mutually agreeable and could lead to conflicting training aims. Yet, a conversation most likely facilitated by the leader of the team or a coach between the practitioners could enhance the ability of the athlete to achieve the physical goal while influencing body composition. Both practitioners could then engage the analyst to help them identify why the physical quality and a certain fat-free mass composition could determine a performance outcome. Finally, the S&C coach could help the physiotherapist objectify some baseline Return to Play (RTP) measures by sharing relevant objective data that may help inform graded RTP processes.

Moving beyond multi-disciplinary methods to an inter-disciplinary approach (Fiore et al., 2008), requires a blending or combination of skills to provide service. Indeed, in healthcare the benefits of MDT and IDT working on better patient outcomes (Scott, 2021), patient mortality (Taberna et al., 2020), and innovation (Mitchell et al., 2017) are well researched across different facets of medical provision. Yet there is confusion in the terminology associated with these teams which has also led to confusion in this field of research (Martin et al., 2022). In sport, if we were to adopt an inter-disciplinary team approach, problem solving would need to be a shared endeavour. Practitioners would likely develop an understanding of other services and the ability to align with them through applied practice. This is of benefit either to inform their own offering or to integrate insight and expertise that helps solve complex performance problems. The complexities of human performance in sport requires teams of cognitively diverse problem solvers to continue to innovate, evolve new techniques and approaches that push the boundaries of what is possible to create competitive edge (Vaughan et al., 2019). Much can be learned from clinical healthcare teams where there are some parallels with elite sporting contexts. Research has found that coordinated team based approaches between medical and psycho-social aspects of patient care can prevent delays, streamline communication and enhance quality of care (Taberna et al., 2020). Mitchell (2012) outlines fundamental principles of effective team-based healthcare emphasising shared goals, mutual trust, clear roles and effective communication as key elements of successful team work, findings somewhat supported by (Stewart et al., 2024) who explored performance support team effectiveness in elite sport.

Statement 4: Practitioners who work in MDTs effectively share expertise, collaborate, and work together to deliver effective solutions.

Any individual's expertise is only accessible if the members of the team are open to sharing (Wilson et al., 2024). Common language, shared mental models, shared ways of working and collaboration (Burns & Collins, 2023; Stewart et al., 2024) can only emerge if communication is effective (Alfano & Collins, 2023; Hall & Weaver, 2001; Ulrich & Breitbach, 2022). Ego, power dynamics,, vulnerability (Hägglund et al., 2024) and imposter syndrome can cause conflict within teams that can supress open communications and engagement (Burns & Collins, 2023; De Dreu & Weingart, 2003; Salcinovic et al., 2022). The antidote to the dysfunctions of fractured teams, groupthink and echo chambers is perhaps constructive conflict, psychological safety, the building of trust, and healthy debate in a contextually nuanced way (Taylor et al., 2022). Psychological safety, has been recently popularised by Edmondson (2012). Psychologically safe environments are ones where individuals can speak openly and honestly sharing views and opinions without fear of recrimination. In safe environments, individuals are more likely to own up and acknowledge their mistakes enabling

learning cultures in which individuals, teams and organizations can develop and flourish (Edmondson et al., 2004). In sport, where jobs can be tenuous and can change depending on investment, popularity of the practitioner, power gradients, and who within the team are considered to have the "boss's ear," may all serve to supress collaboration and psychological safety.

Practitioners also require purpose to collaborate. If team members' work is delivered in silo, process orientated, and through checklists and protocols as per their professional training, it may be harder to foster collaborative ways of working and problem-solving approaches. Certainly, in clinical professions, practitioners are bound by medical confidentiality, a constraint not typically imposed on performance practitioners. This limitation restricts their ability to fully disclose pertinent and essential information. Effective leadership and role clarity, themes identified through both Burns and Collins (2023) and (Stewart et al., 2024) are critical to effective MDT working (Walinga, 2017). Leaders often empower practitioners, facilitate effective communication and set the tone for collaboration across the MDT. The leader creates the environment that the team operates within (Bartlett & Drust, 2021; Salcinovic et al., 2022), the expectations on how the team will behave, they provide MDT role clarity and purpose (DeWeese et al., 2023) and they are often the one who identifies the projects and plans of the team through which they integrate their expertise.

The way in which the MDTs is organized within the organizational structure can also have a bearing on the effectiveness of collaboration and sharing of expertise (Fiore et al., 2017). Where a team is "vertically integrated" for example, a Head of Discipline overseeing and managing a professional department (such as the Physiotherapy or Biomechanics department) this can amplify issues of practitioners staying in their lanes (i.e. within their department or specialism) and not being accessible to the other departments. Alongside this, due to different and conflicting perspectives across the disciplines (between the heads of and practitioners), departments become fixed in their views and positions, constantly attempt to undermine their colleagues, and seek to win points at the cost of creating better solutions.

Multi-factorial Approach to Effective Work by the MDT

The assumptions and their associated rationales supported by the literature provide insight into the collaborative dynamics among MDT practitioners in the delivery of their work. It becomes apparent that alignment of various factors is vital to the successful performance of Multi-Disciplinary Teams. These factors include the training modalities (King et al., 2024), the promotion of knowledge integration among practitioners (Bartlett & Drust, 2021; Rothwell et al., 2020), their problem-solving methodologies and decision-making approaches (King et al., 2024), the team environment and climate in which they operate (Salcinovic et al., 2022), as well as the organizational structure and departmental arrangements (Wagstaff & Quartiroli, 2023). Additionally, the pivotal role of leadership in delineating roles and ensuring team coherence significantly influences the team's ability to collaborate effectively (DeWeese et al., 2023).

The purpose of the current study is to explore how MDT practitioners approach their work in high performance sport with a specific focus on collaboration and problem-solving. The goal is to gain insight and sense of clarity of how and what practitioners need to be effective in their role by investigating practitioners' views, beliefs and perceptions. Through this study we hope to confirm or challenge the assumptions posited above and as a result suggest a thematic framework and identify core themes that could assist practitioners, leaders, and organizations to maximize the effect of multi-disciplinary teamwork in high performance and elite sport.

Methodology

Philosophical Approach

Reflexive thematic analysis (RTA) (Braun & Clarke, 2019) is a flexible qualitative approach that provides a series of choices and offers diversity in the way RTA is utilized (Braun & Clarke, 2023). The diversity of RTA allows for a distinction between what (Kidder & Fine, 1987) refer to as "small q" (post-positivist) or "big q" (non-positivist, reflexive) qualitative approaches,

allowing the methodology to be aligned with researcher philosophies (Finlay, 2021). There has been confusion over the use of RTA as a method rather than a methodology (Braun & Clarke, 2019) with the authors suggesting that researchers should state their ontological and epistemological perspectives as part of the methodology (Braun & Clarke, 2021, 2023).

The approach used in the present paper aligns more closely with "big q" research which acknowledges the researcher's active role in the production of situated knowledge with an inductive, data-driven approach. We view researcher subjectivity as a valuable addition which should be embraced rather than a seen as a threat (Braun & Clarke, 2023). Through a relativist ontological lens (Braun & Clarke, 2021), people's views, beliefs and experiences shape their perspectives which are their individual and therefore perceptual truths. In adopting this constructionist philosophical stance (Braun & Clarke, 2021), an interpretivist epistemological (Braun & Clarke, 2019) approach to answering the research question was a qualitative research design. This approach facilitated deductive exploration of the views, perspectives, and experiences of MDT practitioners working in high performance sport through focus groups where experts shared opinions, experiences, and beliefs through storytelling and sense making, through which, individual and socially constructed meaning could emerge.

Due to the lack of published research in this area a methodology was constructed that was inductive enabling the extraction of meaning from a sample of contextually immersed high-performance practitioners. Our intention is to generate practically derived insights that will drive a broader research agenda in this space.

Ethical Considerations

Ethical clearance was approved by the host university panel (BAHSS2 0385). Practitioners were recruited through (1) the researcher's network, (2) emails to high-performance sporting organizations that employ MDT practitioners, and (3) social media campaigns. All respondents read a participation information sheet and provided informed consent prior to taking part. In the briefing at the start of each focus group, practitioners were reminded of ethical considerations and obligations including their right to withdraw, anonymity, and confidentiality.

Protocol

The focus group instrument consisted of six open questions (Table 1). Questions were shaped to illicit interpretation by the individual and kept brief and open to avoid supposition that would have constrained responses and funnelled discussions toward contextual or operation "doing" rather than how the individuals think about certain things (Roberts, 2020). Although there was structure and a design to the focus groups, the flexibility of RTA enabled each focus group to share, explore, and meander through the questions while the researcher could react reflexively to the conversations probing further when required or something was of interest.

Participants

Twenty-eight MDT practitioners (male $n = 20$; female $n = 8$) from various high performance sporting organizations were selected. With a diverse range of expertise and experience, they provided rich discussion across 5 different focus groups (Table 2). Inclusion criteria required participants to be working in or have previous experience working as part of an MDT in elite or high-performance sport. Working in elite or high-performance sport was defined (Swann et al., 2015) as "a practitioner providing services as part of an MDT in a paid "part" or "full" time capacity within a professional institute or sporting organization supporting funded athletes who compete on world class programs, professional sport, or are on a funded development pathway." Eighteen ($n = 18$) individuals were not selected for participation because they did not meet the criteria.

Table 1. Questions used in the focus groups to stimulate discussion.

Number	Question
1	Would you describe working as part of a MDT a help or a hinderance to your effectiveness?
2	Is collaboration important when working as part of an MDT? Why?
3	Is "sharing" an important requirement of your work?
4	Is decision making an important requirement of practitioners working in MDTs?
5	"Problem solving" is a term often used in high performance sport. Do you have to solve problems?
6	What are the skills and expertise required to be effective within an MDT? Where do you feel you learned these skills?

Table 2. **Participants by focus group.**

CODE	Gender	Focus Group	Sector	Discipline	Sport
P1	F	1	Elite Development Pathways	Physiotherapist	Hockey
P2	M	1	World Class Development	S&C Coach	Home Country Sports Institute
P3	M	1	World Class Development	S&C Coach	Home Country Sports Institute
P4	M	1	World Class Programs	Physiotherapist	Home Country Sports Institute
P5	F	1	World Class Development	Physiotherapist	Home Country Sports Institute
P6	M	1	World Class Programs	S&C Coach	Home Country Sports Institute
P7	F	1	Professional Team Sports	Physiotherapist	Cricket
P8	F	2	World Class Programs	Doctor	Home Country Sports Institute
P9	M	2	World Class Development	Physiotherapist	Home Country Sports Institute
P10	M	2	Professional Team Sports	S&C Coach	Cricket
P11	M	2	Professional Team Sports	Sports Scientist	Football
P12	M	2	Professional Team Sports	Athletic Trainer/Head of Performance	Football
P13	F	3	World Class Development; Professional Team Sports	S&C Coach; Sports Science	Squash; Football
P14	M	3	World Class Programs	Head of Performance	Snowsports
P15	M	3	World Class Programs	Head of Physical Performance	Home Country Sports Institute
P16	M	3	Professional Team Sports	Head of Performance	Cycling
P17	M	3	World Class Programs	S&C Coach	Home Country Sports Institute
P18	M	3	Professional Team Sports	S&C Coach	Baseball
P19	F	4	Professional Team Sports	Psychology	Football
P20	M	4	Professional Team Sports	Sports Science	Football
P21	M	4	World Class Development	S&C Coach	Home Country Sports Institute
P22	F	4	World Class Programs	Head of Performance	Hockey
P23	M	4	Professional Team Sports	Head of Academy Sports Science	Football
P24	M	5	World Class Programs	S&C Coach	HCSI
P25	M	5	World Class Programs	S&C Coach	Rugby
P26	M	5	World Class Development	S&C Coach	HCSI
P27	F	5	Professional Team Sports	Physiotherapist	Adventure Sports
P28	M	5	World Class Programs	S&C Coach	Rugby; International Country Sports Institute

Note. Twenty-eight practitioners took part in five (n = 5) focus groups. Practitioners were from a variety of sectors/backgrounds: World Class Development (n = 7); World Class Programs (n = 10); Professional Team Sports (n = 10); Elite Development Pathways (n = 1). Sports represented by participants included Home Country Sports Institute (n = 12); football (n = 6); cricket (n = 2); hockey (n = 2); rugby (n = 2); and snow sports, adventure sports, cycling, and baseball (n = 1, each).

Data Collection

The RTA was conducted following a six-staged process (Braun & Clarke, 2006). Each focus group was conducted through Microsoft Teams® where it was video recorded, transcribed, encrypted and stored electronically and securely on the university network before being analyzed.

Data Analysis

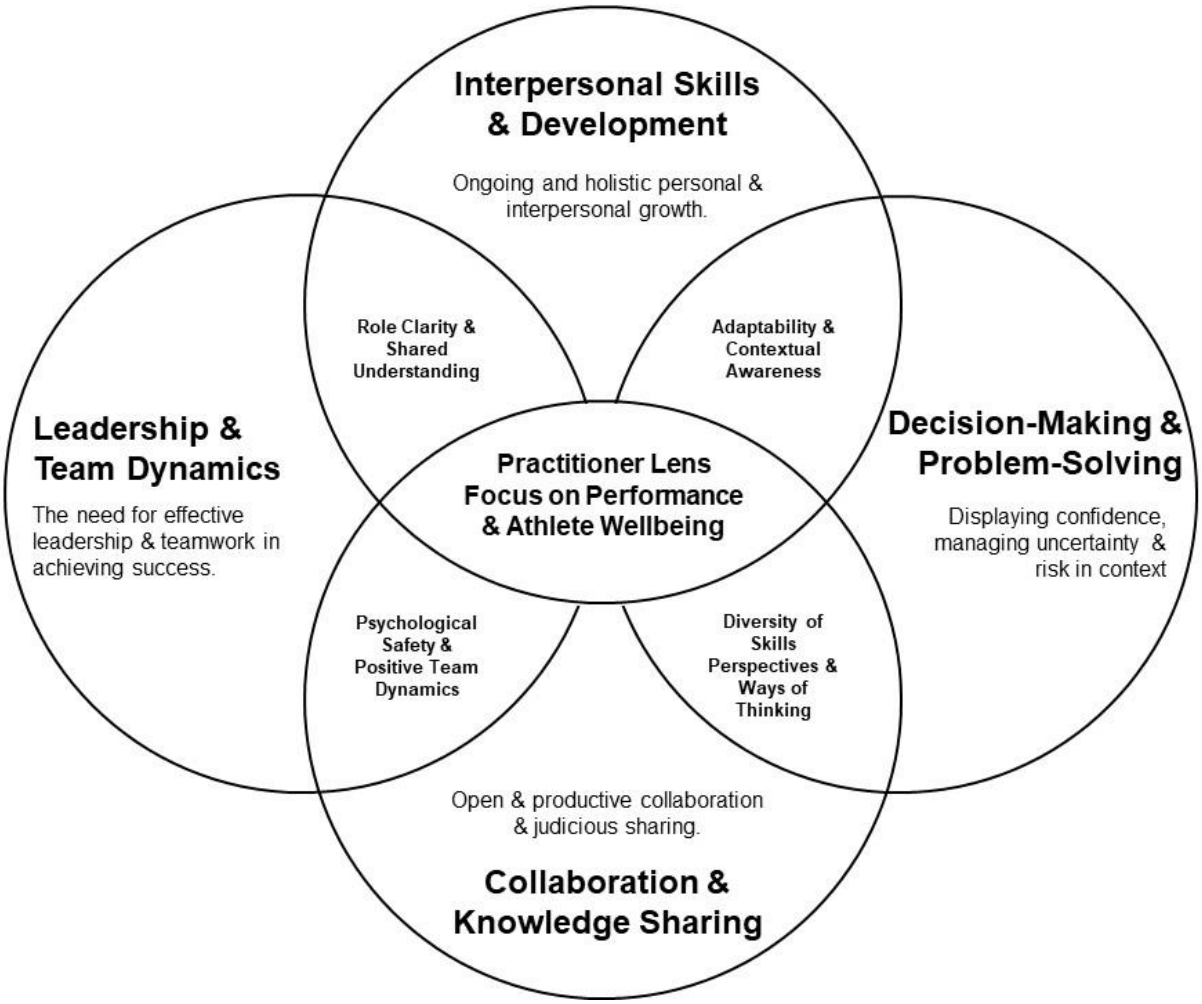
Each of the recordings and transcriptions were reviewed to become intimately familiar with the data. The data were coded, and the coding refined as the researcher analyzed and reanalyzed the transcripts creating several sub themes across each of the six questions (Table 2). This process was repeated for all focus groups and a summary of the findings was produced for each. Once all focus groups were completed, the researcher considered all the sub themes within each question and further collapsed them to create key sub themes aligned to each question.

Results

Questions and domain topics were identified by the researcher (RK) and further collapsed to create four clear domain themes that encapsulate the "what"; these were (1) Decision Making & Problem Solving; (2) Collaboration & Knowledge Sharing; (3) Interpersonal Skills & Development and (4), Leadership & Team Dynamics. Each domain topic was created through the questions presented in Table 1 and then defined through the domain themes identified in the analysis. The domain themes were further analyzed to create four overlapping themes (the "how") that appeared to permeate across the domains and lubricated effective MDT working (see Table 3 and Figure 1).

Table 3. The "lubricants" of effective MDT working.

	Theme	Benefits	Challenges
1	Cognitive diversity is important, but not if it slows us down: *Diversity of skills, perspectives & ways of thinking*	• Enhanced decision-making • Improved problem-solving • Collective strength • Comprehensive perspectives • Thorough discussions • Potential for broader outcomes	• Slow decision-making and progress • Balancing efficiency and diversity • Managing personalities and egos • Lack of clarity and alignment • Overemphasis on discussion vs. action
2	Staying in your lane is encouraged; however, sharing and collaboration is important: *Role clarity and shared understanding*	• Increased clarity • Enhanced collaboration • Alignment towards goals • Deeper connections • Shared mental models • Role clarity • Reduction of toxic culture • Better decision-making	• Unclear role clarity and understanding of responsibilities • Inconsistent information sharing • Confidentiality and trust issues • Role clarity and understanding responsibilities • Misalignment in goals and direction
3	We need psychological safety; however, poor behavior keeps getting in the way: *Psychological safety and positive team dynamics*	• Enhanced collaboration • Alignment of goals • Open communication • Growth and learning • Emotional intelligence development • Increased innovation • Stronger team dynamics • Vulnerability and humility	• Ego and power dynamics • Fear of being challenged • Poor team dynamics and negative atmosphere • Lack of genuine collaboration and avoidance of conflict • Fear of making mistakes
4	High confidence in a world of nuance and uncertainty; adaptability and context is key. *Adaptability and contextual awareness*	• Enhanced decision-making skills • Intuitive decision-making • Coping with uncertainty • Flexibility in decision-making • Collaboration and team dynamics • Self-monitoring and context awareness	• Ambiguity in roles and decision-making responsibility: • Navigating uncertainty and risk • Over-reliance on intuitive decision-making • Low confidence and self-doubt • Evolving nature of problems and solutions • Challenges in terminology and framing



Note. Figure 1 depicts the inter-related MDT practitioner's lens on how and what they do to operate in high performance sport. Practitioners' focus is on athlete performance and well-being which is central to their work. To be successful there are four overlapping domains (the "what") that appear to be requirements of practitioner delivery. Finally, there are four lubricants (the "how") to successful MDT working that, when present, enable practitioners and teams to deliver (the "what") with impact.

Narrative by Themes

Theme 1: Cognitive diversity is important, but not if it slows us down.

Diversity of Skills, Perspectives, and Ways of Thinking

Why diversity is important. Practitioners in each focus group reference the importance of diversity in MDTs. It appears that diversity creates better decisions, solutions and outcomes. This is acknowledged by practitioner [P11; FG3] who states, "I don't think anyone would disagree that collaboration is important… ultimately working together, a group of people with different skill sets and expertise coming together to create an outcome." Alongside the skills and expertise creating better outcomes, practitioner [P28; FC 5] states:

> "Solving any performance problem strength in numbers is key and having a collective group of minds pulling in the same direction really does make the problem simpler, and I guess it's just a reflection of diversity. The more diversity you have in an environment, the potentially the better the number of perspectives that you're going to

> see a problem from that helps you solve it a little bit better."

Utilizing different perspectives to solve problems, practitioner [P6; FG 1] highlights that different skills are required, suggesting the following: "To solve the problem you require different skill sets, and I think the benefit of having multiple practitioners, it just allows different skills to contribute towards a solution, which I think is important."

What is diversity and when is it useful? Practitioners recognize the importance of working in a team of individuals from diverse backgrounds. In several of the focus groups, practitioners described what a diverse MDT looks like and when it is useful. An example here from Practitioner [P1; FG 1] outlines what diversity is in an MDT and when it is useful:

> "It depends on the context. It depends on the personalities, and I think an MDT is really important in the fact that you got people with different experiences, different both in terms of areas they've worked in, in terms of length of time they've worked in an area and different skill sets… You've got different people with different personality skills and all of that can add to having a much more thorough discussion, but equally you get more chance of different egos and attitudes towards things. So it could be that again, someone else's experience might be completely different to yours, and therefore their view is completely different to yours. So, it very much depends on the context and the relationships that you've got within the MDT."

Alongside context playing a part in accessing diversity, practitioner [P18; FG 3] also observes:

> "The more you have key stakeholders providing an input and providing different perspectives from different lenses on how to develop a program or a player is always helpful. But it tends to come back to a couple things in terms of clarity of outcome and also understanding your constraints and then the flexibility within the team."

When diversity gets in the way. Despite the strong inclination from practitioners to work as part of diverse MDTs, there appears to be a cost benefit trade-off that was highlighted across the groups. Practitioner [P21; FG 4] states:

> "I know some people might say you can move faster as a smaller team or individually, but you can move further as a bigger team. So I do think there's certainly value in this diversity of perspective sometimes not even just in terms of the different disciplines, but also just the different personalities and preferences that people bring to the team. And I think another unrelated thing would be just it depends on the individuals in terms of how well they work together. I think the people in the team, their experiences, their values, their ability to work with people essentially and sort of manage their own egos as well."

Alongside the concept of faster-further, practitioners also noted that MDT working has the potential to slow down progress, practitioner [P3; FG 1] remarked, "The negative for me is you know sometimes the boat can go a bit slow because everybody's having a chat about who's going to be doing what when. So it ends up being a bit slow." This observation was supported by practitioner [P12; FG 2] who said, "Oftentimes you are just waiting on somebody or another department to respond to emails or produce a document or get some answers to be able to move forward so at times I think it slows down the process a bit." As well as slowing

progress, a larger number of voices can present another challenge. Practitioner [P14; FG 3] suggests the following:

> "You have to make the decision at the end of the day. It's really easy when you're working the team for everyone [to] have their voices and be going around the circle for days and days, but ultimately you gotta do some kind of action."

Theme 2: Staying in your lane is encouraged however sharing and collaboration is important.

Role Clarity and Shared Understanding

Sharing information. Practitioners' default consideration when discussing collaboration and sharing tended toward the information they personally held or that they required to do their job. Across the focus groups, the conversations consistently orientated toward information as a source of collaborative MDT working. As practitioner [P26; FC 5] stated, "If we're sharing information, it should be with the intention of creating further clarity." Practitioner [P17; FG 3] observed, "What are the areas that the key stakeholders need to be genuinely working together to create collaborative change that's gonna create an actual desired outcome."

This consideration is supported by practitioner [P19; FG 4] who offered, "So sharing [referring to information the practitioner holds and can share across the team] is important. If it's in the best interest of that athlete at that time and it's the best way we can get them on a good path, but sometimes I think we're guilty of maybe oversharing that information." Practitioners raised both over and under sharing as considerations. For example, practitioner [P21; FG 4] said "I'd be guilty probably of under sharing in terms of like it might not be relevant to that practitioner, but I think sharing was important not just to inform their decision making but actually just to keep them connected to the team's purpose and the outcomes." This suggests the use of personal judgement and a personal perception of what is or is not relevant at the individual discipline level.

Concerns were discussed across the focus groups and questions raised over what should and could be shared with the rest of the team. It seems a practitioner's judgement over whether information was important enough to share or indeed could be shared due to confidentiality practices is an important consideration. Practitioner [P22; FG 4] pointed out "It's hard to navigate… we need some of that information so that we can help performance from our approach to the athlete." That practitioner continues, "I just find that such a fascinating piece of the MDT because it is a requirement, but there's that confidentiality piece as well; [having referenced mental health] same with doctors, same with medical as well, it's navigating how we can do that." [P9; FG 2] highlighted the challenge and cost of this stating, "What I've seen is really toxic in a team is a culture where there's a sense of stuff's not shared, and it almost immediately breeds division, and it immediately breeds suspicion and fragments your team straight away."

Sharing to create alignment. The exchange and sharing of information should be determined by the MDT's purpose, project or goal. Practitioner [P22; FG 4] states, "What is the direction you're trying to go or the project that you're working on. It can't just be done in silos and think you're going in the same direction." Practitioner [P25; FG 5] states:

> "Sharing is an important requirement of work if it is of not a distraction to what we're trying to achieve, it has to obviously align. Even if I believe something aligns to the purpose or the direction we're going in, I've got to be really careful about sharing anything that is not mine and context obviously drives that."

Several practitioners acknowledge the importance of sharing on a deeper level to drive effective MDT outcomes. Practitioner [P11; FG 2] observes, "In terms of shared values, shared

mental model, shared intelligence, etcetera, I think that's important that those are the guiding light of everyone knows where we wanna go, what the strategy is." This is similar to the comment made by practitioner [P26; FG 5]: "I think for me a shared mental model, shared worldview is probably key for effective collaboration to happen. I think we all need to be communicating from the same place and understanding each other and clear on what we're going after and why." Here is another consideration raised by practitioner [P12; FG 2]:

> "I think there's sharing a common way of working; we all share that we all understand how we're working and what we're working towards, but also sharing your experience and sharing your expertise and sharing your thoughts on the process and the system and perhaps the values whether they're aligned or not."

Role clarity and understanding your contribution. Alongside the practitioner's personal judgement about what they should share, there is a need for practitioners to understand their and other's role and can judge when collaboration and sharing is required. As practitioner [P22; FG 4] suggests. "The issues or problems that we've had to solve is because there's been a lack of understanding of what the roles and responsibilities and who does what and understanding how we all fit." When there is this clarity, practitioner [P2; FG 1] observes the following:

> "I think it's intelligent that if there's an S&C coach and they're really good at the core bit of their role, and they know that the physio is really good at the core bit of their role, then we might have these little interactions and discussions to help things kind of run smoother."

This thought is reinforced by practitioner [P11; FG 3] who acknowledges *"It's not to say that you shouldn't look to work together, there needs to be a clear idea of where that's actually going to be helpful, where's the areas that just getting out of each other's way is actually very impactful."* A point reinforced by practitioner [P16; FG 3]:

> "I think the point is that definition of collaboration is important. It doesn't necessarily have to mean you're working together with others; you just may see the signals to recognize that you need to step away and create space for that individual to be effective."

Sharing and the role of leadership. Practitioner [P20; FG 4] identifies the critical role that leadership plays in creating role clarity while also bringing into vision this concept of staying in your lane, they state *"Clarity from leadership is critical to impacting that effectiveness because if you have role clarity it's easier for everyone to stay in their bounds and be more effective within those bounds."* Leadership appears to be critical to both creating role clarity and setting the tone by which sharing occurs as observed by practitioner [P28; FG 5]:

> "If you're practitioner working in the environment and someone says stay in your lane, that's pretty triggering aggressive and most people see that as unacceptable and insulting. I think there's a leadership component, I would say I've experienced both sides, being very clear on what I was expected to do and how I was going to be judged but at the same time, being told, mate, this is not your field push on."

Organizational structure was also raised as a consideration in facilitating effective collaboration and sharing with practitioner [P24; FG 5] who observed this: "[I]n the golden world you know more shared decisions, better shared knowledge, and then it's a better opportunity for a better outcome." They go on to suggest, "It's

the group dynamics, do you have the right people in the group and does everyone understand their roles of what they've got to share... I think that it all comes back down to the group dynamics and whether you are horizontally or vertically integrating."

Theme 3: We need psychological safety; however poor behavior keeps getting in the way.

Psychological Safety and Positive Team Dynamics

Characters and ego. Through the first two themes, we have illustrated the importance of both diversity, collaboration and sharing in creating optimal solutions and outcomes. Practitioners that work in MDTs therefor have to be able to work with others effectively in a psychologically safe environment. Practitioner [P10; FG 2] states the following:

> "[I]t's just down to the characters of the personnel that you're working with, whether they want to or feel comfortable collaborating or whether they prefer to work in in silos. I've had those experiences where I have felt it [the MDT] has become a hindrance, but that's not because of the MDT itself, that's just the characters within it."

Alongside the characters within the MDT, consideration should be given to the environment: "[T]he character traits need to fit the MDT or the MDT needs to create that safe psychological space for people to operate in an effective manner" [P25; FG 5]. Practitioner [P16; FG 3] recognizes that expert practitioners have to be able to operate with others: "I guess it's that sometimes, although you have a particular level of expertise, so you're the inch wide mile deep, you know in true integrated approaches, you often gotta operate horizontally as well." Multiple practitioners report experiencing poor behavior that acts as a blocker to effective MDT working including between professional domains. Practitioner [P8; FG 2] shares their experience:

> "I've had similar experiences, and my take on it is sometimes it's egos, people saying this is my domain, how dare you step into it. In our world [in sports] the boundaries overlap and working in a really high functioning MDT is where everyone is comfortable that the boundaries overlap, and you work together and that it's absolutely fine to be checked and challenged."

Practitioners frequently reference ego as getting in the way of effective team working. Practitioner [P13; FG 3] highlights their frustration stating, "I've also been unlucky enough to work with people who aren't willing to listen to other people's opinions and potentially let their ego get in the way of decision making." Practitioner [P9; FC 2] acknowledges that ego needs to be managed:

> "I think the power of the MDT comes when [P8; FC2], I think you mentioned ego and when you take that out of it and nobody's too rooted on success being down to their contribution… but the leadership and the management of the egos and the group is the key part in how you get to that point."

It seems that difference of views and opinions can be seen as challenging, and this might be related to ego or difference of opinion and/or bias. Practitioner [P5; FG 1] observes, "When you come against people who are so entrenched in their own beliefs and the barriers are so high that they're almost scared to allow it just to come down slightly [their strongly held belief] to even begin to contemplate something else…the more that you tell somebody that's not quite right, the more that they're going to come back at you with the reason why it is correct."

Team dynamics. Practitioners recognize the limiting nature of poor team dynamics on MDT

working: "[I]t can lead to some very negative outcomes and lead to a very negative atmosphere within the team; it's more likely a very negative foundation for going forward" [P15; FG 3]. Practitioner [P28; FG 5] notes the effects of poor team dynamics: "Ego, power struggle, ulterior motives, all those components…are not helpful because we've actually lost track of the fact that we're trying to address a performance problem or an issue with a player, whatever it might be." Practitioner [P27; FG 5] echoes this point:

> "If there's ego, power dynamics involved, if it's collaboration with the intention for self as opposed to the intention of moving towards an aligned and shared goal, then I would argue that's not genuine collaboration, and then it's someone using a group for their own purposes as opposed to collaboration for collaboration's sake."

In contrast to the issue of self-serving interest, there is also a fear of or aversion to challenge as observed by practitioner [P6; FC 1]:

> "You go to an MDT meeting but then what ends up happening is a lot of people just end up agreeing with one another…. [L]ess often…do we have a meaningful MDT meeting where people are able to actually really put contrasting views on the table.
>
> "You discuss, debate, check, and challenge and I think the key bit is when you go to a place where you're actually uncomfortable, but then you're able to go and have a beer afterwards. I think that's the sort of position where real collaboration occurs and that requires a degree of skills to be able to do that."

The ability of the team to operate horizontally, integrate their expertise, and debate and disagree well stems from practitioners' ability and skill to operate with one another and consideration should be given to how this is agreed. Practitioner [P17; FG 3] summarizes as follows:

> "The shared knowledge and understanding of how to operate in a non-technical way with each other... What are the identified communication strategies? How are we effectively listening to each other to be able to support and understand? What kind of questioning approach can we take to be able to support each other, to share the information that we need? And how can we kind of interrogate each other in a comfortable way?

Psychologically safe environments and making mistakes. For practitioners to contribute freely, without fear of being wrong, making mistakes, or experiencing imposter syndrome, environments must foster a sense of psychological safety, which practitioners emphasize as essential.:

> "And I suppose you need to have emotional intelligence. And I think that's kind of what people have touched on in terms of having an environment of psychological safety so that people do actually feel they can voice their opinions and knowing when to speak up and when not to" [P27; FG 5].

There appears to be an individual and an environmental aspect to psychological safety which practitioner [P7; FG 1] encapsulates: "Although people don't want to admit that they're wrong, that things have gone wrong…when it's a good environment that it feels like you can make mistakes, I think that's a really crucial time to really grow as a practitioner." The ability to acknowledge mistakes also suggests that a sense of psychological safety is required, as observed by practitioner [P22; FG 4]: "I think there's a bit of a culture… being able to be humble and

vulnerable, [acknowledging] where are our weak spots within our practice, and if you can have…a psychologically safe environment, [you can] have those humble conversations."

Emotional intelligence was referenced as a key requirement of MDT practitioners. "When you talk about skills and expertise, we can think about self-awareness, self-leadership, self-regulation. Self-regulation only works with those around you so your co-regulation's really important" [P16; FG 3]. Practitioner [P21; FG 4] acknowledges, "I guess it comes into that emotional intelligence, doesn't it, in terms of not just being able to manage yourself but also recognize that in others." The ability to acknowledge the importance of emotional intelligence appears to be acquired experientially: "I learned these often through experience—quite brutal feedback sessions if I'm really honest—making quite poor decisions in my career at times which were catalysts for change" [P16; FG 3].

Theme 4: High confidence in a world of nuance and uncertainty; adaptability and context is key.

Adaptability and Contextually Aware

Decision-making. While practitioners share information, collaborate, and operate through an MDT, it appears practitioners have a range of views regarding "what" they do. Despite frequently referencing the decisions they make as practitioners, it was clear that there was some ambiguity among practitioners around awareness of both who made decisions and how they were made. [P17; FG 3] said this: "I don't know if decision-making skills are a necessary part of the whole team or just a handful of individuals within the team." This sentiment was echoed by [P13; FG 3]: "There's certain practitioners in roles that are gonna have more decisions to make than other practitioners, but also practitioners who will have more important decisions to make as well or decisions that might have bigger implications on the outcome." Alternatively, some practitioners had a degree of confidence that decision-making was an important element of their role:

> "It's probably one of the most fundamental parts of being a good practitioner, you've gotta be good technically, but it's your ability to make good and sound decisions based on the contextual information that you have but there's also different layers. There's decision making from a practical in the moment perspective. There's decision making from a wider team project perspective and there's decision making around sort of a general system or cultural change perspective… I think it's the thing that separates the ones that are very good at their jobs and the ones that maybe aren't as good is their ability to make good decisions consistently and regularly" [P18; FG 3]

Regarding how decisions are made a number of practitioners reference intuitive decision-making, "*My sense is that a lot of decision making, even quite technical decision making is quite intuitive*" [P9, FG 2]. Another example was suggested by [P21; FG 4], "*So I think that's another part of this intuitive decision making is that you're making intuitive decisions all the time… you might see a pattern, but then you're like, OK, I'm going to make a decision*." Consideration should also be given to practitioners' confidence in their decisions and how they resolve this, practitioner [P6; FG 1] states, "*If you've got a medium and definitely low degree of confidence, you certainly are gonna consult the people around you to help you make that decision*."

Coping with uncertainty. MDT practitioners must deal with uncertainty and risk. Practitioner [P5; FG 1] asks this:

> "What's the jeopardy here? Who is gonna actually be responsible for the decision or the decision making? Who's actually gonna get the finger wagged at them if it goes wrong? …But it's also about cutting a deal. What's the end

> result? What is the decision we have to make here"?

There seems to be some level of self-monitoring around the context in which decisions are made and their associated level of risk. Practitioner [P13; FG 3] states, "A big element of uncertainty around decision making is deciding what level of risk you're happy with and also just looking at the context and who's at the center of having that impact of your decision." Practitioners report uncertainty around how they make decisions as evidenced by the following passage from [P4; FG 1]:

> "I think our world is very rarely made of clear-cut dichotomised decisions which are right or wrong they're mostly grey and I think one of the biggest issues I see with practitioners is they stall the car at the T junction and because neither answer is correct, they stall… When there isn't a perfect answer, the expectation is I'll just get some more data, more data will help me make the decision when actually it's just drive the car down the bloody road."

Adaptability is key. Decision-making with levels of uncertainty and low confidence while solving ambiguous ever-changing problems emphasizes the need for practitioners to be adaptable. [P16; FG 3] suggests, "Our job as practitioners is to navigate that uncertainty as quickly as possible within your team." [P1; FG 1] expresses a similar sentiment: "As a general theme, I work in an environment where there is a lot of uncertainty. So I think it's important. It depends on the level of risk." [P3; FG 1] outlines his view on dynamic, "adaptable" decision-making, even when a decision has been made:

> "It's only the decision until it's not, and then we change, and we do something else. It's just a changing decision rather than an end decision, it's still flexible. I remind myself that I can change decisions, change route, and go a different way."

Decision-making or problem solving? Across all the focus groups, practitioners frequently referenced problem solving; therefore, it would be reasonable to assume that problem solving is a critical requirement of MDT practitioners. When practitioners were asked whether they solve problems, a range of responses was given; for example, "Is decision making the driver of problem solving? To solve a problem, you have to make a decision " [P11; FG 2]. When differentiating between problem solving and decision-making [P12; FG 2] states the following:

> "As [P10; FG 2] said, a problem implies that something is not fitting or there's something wrong or there is there's something that needs to be addressed in a way. You know, not all decision making is problem solving, but is all problem solving decision making? I would say so."

There also seems to be low confidence that problems are ever solved hinting at the nature of the problems faced by MDT practitioners:

> "I'm not sure if I have ever solved one problem and it's come to a complete end. Normally I feel like I'm playing whack-a-mole most of the time. I might solve one thing, and then there's two other things pop up, and I'm like OK let's do that." [P14; FG 3]

This sentiment was echoed by [P26; FG 5]:

> "I think the overall problem is always performance at the end of the day whatever our sport is, so that's a problem that isn't going to be solved. There's no final endpoint of that problem, it's just one that we can hopefully add value to and move in the right direction."

Terminology. Despite practitioner frequently using certain terminology, there was a sense that practitioners did not like the term "problem solving." [P28; FG 5] observed, "I don't think the language sits particularly well with other members of staff or support staff or certainly athletes in terms of talking about problems." Alongside this, [P17; FG 3] said, "I don't think it sits right with me that it feels that it's a chase to solve the problems; it's perhaps more of a frame of 'discover opportunities.'" A similar view was expressed by [P22; FG 4]: "So I think that mind set of [being] solution orientated is really important, and I think it does also depend on the context of, you know, solving problems or finding solutions."

Practitioners frequently described their work as both decision making and problem solving, yet many had a preference towards terminology associated with achieving outcomes and delivering solutions when directly asked about what they do.

Discussion

The current study aimed to explore practitioners' perceptions of how they operate as members of MDTs in high performance sport environments. By exploring their views, beliefs and perceptions as shaped through their experiences, four unique themes of how they operate were identified with implications for organizations, leaders and practitioners. These were (1), Cognitive diversity is important but not if it slows us down, (2) Staying in your lane is encouraged however sharing and collaboration is important (3), We need psychological safety, however poor behavior gets in the way, and (4), High confidence in a world of nuance and uncertainty; adaptability and context is key. Interpretation suggests there is overlap and inter-dependency between the themes across the domain topics (Figure 1). The domains appear to be critical requirements of an MDT, and the themes are lubricants to effective MDT working. The following discussion builds on these themes highlighting the potential challenges that face practitioners and the implications for practice.

Practitioners within this study recognised the need for cognitive diversity within the team acknowledging that it makes for better problem-solving capability, a view supported in the literature (Hong & Page, 2004; West & Dellana, 2009). Literature also suggests that diversity enriches team decision-making and fosters innovation, allowing the team to potentially achieve greater outcomes than smaller, less diverse teams (Aggarwal & Woolley, 2019; Horwitz & Horwitz, 2007). Practitioners noted that, discussions and deliberations within the team can sometimes lead to a slower decision-making process. Additionally, dependencies on external parties or departments can further impede progress, as waiting for responses or documents can prolong timelines, which in the fast-paced world of sport often mean that things have kept moving on before the MDT has had time to act. There is potential for confusion and misalignment within MDTs when team members revert to familiar patterns of mono-disciplinary working instead of engaging in collaborative problem-solving. For an MDT to effectively problem-solve, the team must move forward in an integrated manner, sharing expertise across disciplines. More research is needed to explore the different types of work and approaches that practitioners adopt, which would help clarify when and if integrated problem-solving is necessary and when diverse perspectives should be leveraged.

Furthermore, it was highlighted that the presence of numerous voices within the team can lead to difficulties in reaching consensus or making decisions efficiently (Mohammed & Ringseis, 2001). The need to accommodate multiple viewpoints may prolong discussions and hinder decisive action. When cross-functional teams face difficult problems, they can generate more and better solutions (Hong & Page, 2004; Page, 2019). It is clear there is ambiguity about whether practitioners are decision makers, problem solvers or skilled "procedural" doers (King et al., 2024) with a range of views being suggested. If practitioners work in a process orientation to deliver clear outcomes or solutions then it is unlikely that diverse teams will add any additional value and

could in fact slow down individual progress (Hong & Page, 2004; Page, 2014), increase perceived bureaucracy and scuttle decision-making capability due to the number of voices and difference of views and opinions (Mohammed & Ringseis, 2001). The integration of departments and/or divisions to deliver MDT working models creates inter-dependencies which drives system complexity (Rijpma, 2019) and wicked/VUCA problems (Greenberg & Clubb, 2021; Sediri et al., 2020). This creates a conflict between the need for task focused (De Dreu & Weingart, 2003) versus problem-solving approaches, and between individual disciplinary expertise and a multi- or interdisciplinary approach. Consideration should be given to what is required by the team and more importantly, clarity on what they are expected to deliver.

Practitioners perceived "sharing" as information they either hold within their discipline or that they require from others to deliver the best possible outcomes. They used personal judgement on whether they should share information and tended to under share. It was clear that information wasn't shared at times due to information being privileged creating both a block to delivering performance solutions and providing a source of inter-personal conflict within teams. Information is a commodity (Otte et al., 2022; Rothwell et al., 2020) that practitioners can use to their benefit. The transactional nature of information sharing and the individual choice to share (or not) may drive some of the challenges (frustration/trust/poor decision-making) experienced by practitioner teams (Mesmer-Magnus & DeChurch, 2009). Further research is needed to investigate perceived power dynamics between practitioners across different domains (e.g., clinical and performance) and their influence on problem-solving capacity within MDTs. Understanding the distinction between true collaborative problem-solving, where the team actively integrates diverse expertise and cooperative information sharing driven by outcome or goal orientation is critical. These contrasting approaches have fundamentally different implications for how teams should structure their interactions and deliver solutions effectively.

The transactional nature of information sharing within the context of elite sport might breed power dynamics, hierarchical relationships and politicking across a team (Cowley et al., 2023; Mesmer-Magnus & DeChurch, 2009). It is apparent that organizational structure, team/discipline alignment (horizontally or vertically integrated) and the critical role of leadership are all factors contributing to effectiveness of sharing in and across MDTs (Axelsson & Axelsson, 2009; Burns & Collins, 2023). When we delved a little deeper into the concept of sharing it was clear that (re) positioning sharing as an ongoing exchange (between disciplines) i.e., skills, expertise, mental models, perspectives, values can create shared purpose, shared goals or a shared world view that can drive alignment between disciplines (Rothwell et al., 2020). Better outcomes for multidisciplinary teams (MDTs) in sports may result from role clarity, shared understanding, and a unified purpose or alignment of goals and objectives (Alfano & Collins, 2021), emphasising once more the significance of effective leadership (Burns & Collins, 2023; Walinga, 2017). Importantly, it transcends the perception of sharing "information" and reduces the risk of the commoditisation of information by disciplines. While unifying goals and shared objectives provide practitioners with a common purpose, they do not automatically foster true collaboration or collaborative problem-solving. Instead, teams often default to familiar patterns of cooperation and information exchange, which fall short of integrated problem-solving. To address this, greater focus is needed on how objectives and goals are crafted and framed to actively promote deep collaboration and problem-solving within MDTs.

From the current study findings, it appears that MDT practitioners in high performance sporting environments experience inter-personal challenges that act as a barrier to psychological safety that might stifle collaboration. Ego, lack of desire to collaborate and inability to listen to others' views and opinions (Hägglund et al.,

2024) were frequently referenced by practitioners. As well as challenging characters and poor behavior being present in teams, there is a perception that practitioners identify with, and are protective of their specific professional domains. Practitioners operating in their silo's and being reticent about collaborating and sharing will reduce the ability of the team to problem solve and align their practices around common purposes and outcomes (Edmondson & Bransby, 2023). Cross pollination of professional expertise with a respect for boundaries appears to be an aspiration. When people do not feel safe to contribute, they are less likely to participate (Mitchell et al., 2009). Participants in the current study recognise that negative atmospheres create toxic environments that stifle the productivity and effectiveness of the team. This further enhances the case for both leaders and organizations to consider how positive team dynamics are developed and psychologically safe cultures are fostered, this is no doubt a significant challenge for sporting organizations where results are the key measure of success.

Practitioners in this study expressed a desire and recognised the need for psychological safety. It is notable that this is aspirational as opposed to the reality of working in MDTs with several practitioners sharing their frustrations and challenges that team working creates. Underpinning this observation is the reflective (Knowles et al., 2023) nature of practitioners and their desire for interpersonal and professional growth. It seems that practitioners learn through their failures, mistakes and challenges and through this create a utopic view of what MDT working should look like. Also interesting is the observation that practitioner's feel they need to have emotional intelligence, be self-aware and can self-regulate to thrive in MDT contexts. This emphasises the importance of reflective (Knowles et al., 2023) and inter-personal skills. Notable is that in most cases these "non-technical" inter-personal skills appear to be learned through experience and/or life which supports the idea that mistakes, failure and challenge trigger reflective practices that help us to adjust, adapt and regulate our behavior (Huntley et al., 2023). Consequently, a greater emphasis should be placed on the development of skills that enhance the ability of cross-functional teams to effectively work together. Prioritising these skills and embedding them across educational, vocational and applied contexts (Cassidy & Rossi, 2006) would develop better practitioners and teams that are more effective (Alfano & Collins, 2023). Much could be learned from the health and social care sectors where inter-professional collaboration has garnered significant attention. The Inter-professional Education Collaborative (IPEC) in 2011 produced its first core competencies resource which has subsequently been updated in 2016 and again in 2023 (Interprofessional-Education-Collaborative, 2023). Inter-professional collaboration according to IPEC, consists of competencies of teams and teamwork, values and ethics, roles and responsibilities and communication. In sport, we assume that there is a need for collaboration and that practitioners possess the competencies or capabilities to practice that way without first considering the need. Figure 1 and the themes that created it suggest there are synergies between MDTs that operate in health and social care and high-performance sport. Our figure can act as a bridge through which we could accelerate our learnings of how to maximise the benefits of MDT working and galvanise better support and research for inter-professional working.

Current study findings suggest that practitioners exhibit varying levels of awareness regarding decision-making processes within MDTs (Wilson et al., 2024). While some emphasise the importance of decision-making skills, others express uncertainty about who makes decisions and how they are made. Intuitive decision-making (Kahneman & Klein, 2009; Klein, 2004; Salas et al., 2010) is referenced as a common approach, with practitioners relying on contextual information and seeking consultation when confidence is low. MDT practitioners confront uncertainty and risk (Wilson et al., 2024) in their decision-making processes. They consider factors such as the level of risk they are comfortable with and

the potential impact of decisions on various stakeholders. There is recognition that decisions often involve navigating through ambiguity and making choices in uncertain circumstances (Wilson et al., 2024). Given the inherent uncertainty and complexity of their work, practitioners stress the importance of adaptability. They emphasise the need to respond quickly to changing circumstances and remain flexible in their decision-making. Decisions are seen as dynamic (Hotaling et al., 2015) and subject to revision based on evolving situations. There is conflict here for practitioners as they must be adaptable to the current context, have confidence in their delivery strategies and provide decisive answers to questions that arise.

While practitioners frequently mention problem-solving as a critical aspect of their work, there is ambiguity regarding the relationship between problem-solving and decision-making. Some argue that decision-making is integral to problem-solving, while others express doubts about the possibility of ever fully resolving problems, likening it to a continuous process of addressing challenges. Despite using terms like "problem-solving" in their discourse, practitioners' express discomfort with the term. They prefer language that focuses on discovering opportunities and delivering solutions rather than framing their work solely as problem-solving. Whether practitioners work through a pre-prepared process to deliver predictable outcomes or unpack readymade solutions to recognisable problems, they will likely make intuitive "fast" decisions both as individuals and within a group (King et al., 2024). Operating in these ways reduces the need for an integrated approach more likely relying on a silo-based orientation. Despite the aversion to the term problem solving, it was frequently used across the focus groups by practitioners. Depending on the nature of the problems, a clear delineated process is required to solve them in which the MDT should be involved (Schraw et al., 1995). This highlights the need for coordination and clarity from leadership and a separation between procedural "business as usual" delivery and innovating around novel difficult problems. This has previously been identified by King et al. (2024) who proposed a framework for differentiating between problem types, problem-solving approaches and decision-making styles. This requires the leader, the team or the practitioner to make conscious, reasoned decisions about why and what they are doing and importantly how.

Limitations

Due to the novel nature of the study a focus group approach seemed appropriate. Further exploration of the themes identified with MDTs who work closely together may confirm or challenge the findings. Care was taken to keep the questions purposefully open in order to support individual interpretation; the conversations that transpired were broad. However, a more focused approach may have enabled the researcher to go even deeper and further in one or two of the elements that were explored thus giving greater breadth, depth, and focus to the analysis. Finally, practitioners volunteered and willingly participated, which may have attracted a specific type of practitioner. This could have inadvertently homogenized the group, potentially amplifying certain themes identified in the process. Focused studies of actual MDTs in the field—observing how they operate and what they think about, attend to and/or reflect upon—would offer novel insight into individual and team interaction and their processes.

Conclusion

Through the creation of a thematic map and the construction of four themes, data were used to illustrate "what" practitioners need to do as part of an MDT and how they should operate to work effectively in teams. Findings suggest that practitioners have more to contend with than just delivering technical skills. They operate in a world of uncertainty and risk, with challenging characters from different backgrounds in environments where mistakes are to be avoided and keeping quiet might feel safer. They tend to survive by using their information in

transactions, trading it as a currency as and when required and based on personal judgement. Learning occurs through challenge, failure, and mistakes with practitioners ill-prepared for the realities of the situations and contexts they face. But through this reality, a utopian view emerges that we can aspire to in high-performance sport.

Our findings have implications for sporting organizations, leaders, and MDT practitioners. Creating psychological safety, developing positive team dynamics, and leveraging the cognitive diversity within MDTs will enhance problem solving. Training practitioners in how to deal with risk, uncertainty, and applied critical thinking, while providing them with clarity about roles and purpose, may better equip them with some of the skills they require to thrive. Finally, the "non-technical" individual and interpersonal skills that practitioners learn on the job might be better situated both in academic, vocational, and applied training contexts so that practitioners are set up for success instead of failure.

So what…?

- By exploring practitioners' experiences and views of working in MDTs in high performance sport, we have challenged some of the "taken as known" and "taken for granted" assumptions applied in this context and drawn out some important considerations for how MDTs operate in practice.
- Through this study we have been able to create a valuable model (Figure 1) for practitioners depicting what they should attend to and how they should operate in MDTs. Importantly, this model is developed for high performance practitioners through their own experiences of working in this context.
- Practitioners depict a reality of working in an MDT in high performance sport that is uncertain, challenging, and fraught with conflict. Through this dark reality, a utopic view of what and how MDT practitioners should focus on emerges through which we can develop training and support and drive a broader research agenda to support inter-professional collaboration.

Practical Implications

- MDTs in high performance sport require strong leadership and direction. There is a need for sporting organizations and leaders to create climates where MDTs feel supportive and psychologically safe while ensuring clarity of purpose and alignment across their work.
- Sharing information or withholding it can create conflict and harm team dynamics. The reframing of sharing as a continuous exchange of skills, expertise, perspectives, and values fosters shared goals and a unified purpose, ultimately strengthening collaboration.
- While decision-making and problem-solving are common terms in sports, MDT practitioners often lack clarity on the practical meaning of the terms, and they differ in their opinions of the relevance of the terms. Developing the ability to distinguish between these critical skills is crucial for practitioners and essential for effective MDT collaboration. Recognizing and differentiating them will enable more purposeful use of individual strengths and foster more deliberate, collaborative problem-solving.
- Nuance, uncertainty, and risk appear to be a critical feature of an MDT practitioner's work in high performance sporting environments. Practitioners should be trained and equipped to deal with working in such contexts.
- Practitioners need to be better prepared for the realities of performing as part of a cross functional team understanding that inter-personal skills and adaptability may be a pre-requisite to success as a practitioner.

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Authors' Declarations

The authors declare that there are no personal or financial conflicts of interest regarding the research in this article.

The authors declare that they conducted the research reported in this article in accordance with the Ethical Principles of the *Journal of Expertise*.

The authors declare that the participants of this study did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research supporting data is not available.

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References

Aggarwal, I., & Woolley, A. W. (2019). Team creativity, cognition, and cognitive style diversity. *Management Science*, *65*(4), 1586–1599.

Alfano, H., & Collins, D. (2021). Good practice delivery in sport science and medicine support: Perceptions of experienced sport leaders and practitioners. *Managing Sport and Leisure*, *26*(3), 145-160. https://doi.org/10.1080/23750472.2020.1727768

Alfano, H., & Collins, D. (2023). Good practice in sport science and medicine support: Practitioners' perspectives on quality, pressure and support. *Managing Sport and Leisure*, *28*(4), 396–411. https://doi.org/10.1080/23750472.2021.1918019

Axelsson, S. B., & Axelsson, R. (2009). From territoriality to altruism in interprofessional collaboration and leadership. *Journal of Interprofessional Care*, *23*(4), 320–330.

Bartlett, J. D., & Drust, B. (2021). A framework for effective knowledge translation and performance delivery of sport scientists in professional sport. *European Journal of Sport Science*, *21*(11), 1579–1587.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, *11*(4), 589–597.

Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, *18*(3), 328–352.

Braun, V., & Clarke, V. (2023). Toward good practice in thematic analysis: Avoiding common problems and be (com) ing a knowing researcher. *International Journal of Transgender Health*, *24*(1), 1–6.

Burns, A., & Collins, D. (2023). Interdisciplinary practice in performance sport: A scoping review of evidence of collaboration. *European Journal of Sport Science*, *23*(9), 1877–1891. https://doi.org/10.1080/17461391.2023.2201812

Cassidy, T., & Rossi, T. (2006). Situating learning:(Re) examining the notion of apprenticeship in coach education. *International Journal of Sports Science & Coaching*, *1*(3), 235–246.

Collins, D., Burke, V., Martindale, A., & Cruickshank, A. (2015). The illusion of competency versus the xesirability of sxpertise: Seeking a common ztandard for

support professions in xport. *Sports Medicine*, *45*(1), 1–7. https://doi.org/10.1007/s40279-014-0251-1

Cowley, E., James, J., & Norris, J. (2023). Getting to know your team: Inter-disciplinary working with others. In A. Borrie, C. Chandler, A. Hooton, A. Miles, & P. Watson (Eds.), *The Applied Sport and Exercise Practitioner* (pp. 64–77). Routledge.

De Dreu, C. K., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology*, *88*(4), 741.

DeWeese, B. H., Hamilton, D. K., Huls, S., Peterson, B. J., Rath, T., & Althoff, A. (2023). Clarifying high performance and the role, responsibilities, and requisite attributes of the high-performance director in American professional sport. *Strength & Conditioning Journal*, *45*(4), 429–438.

Edmondson, A. C. (2012). *Teaming: How organizations learn, innovate, and compete in the knowledge economy*. John Wiley & Sons.

Edmondson, A. C., & Bransby, D. P. (2023). Psychological safety comes of age: Observed themes in an established literature. *Annual Review of Organizational Psychology and Organizational Behavior*, *10*(1), 55–78.

Edmondson, A. C., Kramer, R. M., & Cook, K. S. (2004). Psychological safety, trust, and learning in organizations: A group-level lens. *Trust and distrust in organizations: Dilemmas and approaches*, *12*(2004), 239–272.

Finlay, L. (2021). Thematic analysis:: the 'good', the 'bad'and the 'ugly'. *European Journal for Qualitative Research in Psychotherapy*, *11*, 103–116.

Fiore, S. M., Hoffman, R. R., & Salas, E. (2008). Learning and performance across disciplines: An epilogue for moving multidisciplinary research toward an interdisciplinary science of expertise. *Military Psychology*, *20*(sup1), S155–S170. https://doi.org/10.1080/08995600701804939

Fiore, S. M., Rosen, M., Salas, E., Burke, S., & Jentsch, F. (2017). Processes in complex team problem-solving: parsing and defining the theoretical problem space. In *Macrocognition in teams* (pp. 143–163). CRC Press.

Greenberg, W., & Clubb, J. (2021). Why 'best practice'is not always best in sport. In (Vol. 55, pp. 1249–1250): BMJ Publishing Group Ltd and British Association of Sport and Exercise Medicine.

Hägglund, K., Wagstaff, C. R., Kenttä, G., & Thelwell, R. (2024). Starting a conversation about vulnerability in elite sport. *Journal of Sport Psychology in Action*, *15*(1), 19–29.

Hall, P., & Weaver, L. (2001). Interdisciplinary education and teamwork: A long and winding road. *Medical Education*, *35*(9), 867–875.

Hong, L., & Page, S. E. (2004). Groups of diverse problem solvers can outperform groups of high-ability problem solvers. *Proceedings of the National Academy of Sciences*, *101*(46), 16385–16389.

Horwitz, S. K., & Horwitz, I. B. (2007). The effects of team diversity on team outcomes: A meta-analytic review of team demography. *Journal of Management*, *33*(6), 987–1015.

Hotaling, J. M., Fakhari, P., & Busemeyer, J. R. (2015). Dynamic decision making. *International encyclopedia of the social & behavioral sciences*, *8*, 708–713.

Huntley, E., Johnson, L., & Napier, S. (2023). Reflective practice: The core of professional and personal learning. In *The Applied Sport and Exercise Practitioner* (pp. 110–121). Routledge.

Interprofessional-Education-Collaborative. (2023). *IPEC core competencies for interprofessional collaborative practice: Version 3* (Interprofessional Education Collaborative, Issue. I. E. Collaborative.

Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus and Giroux.

Kahneman, D., & Klein, G. (2009). Conditions for intuitive expertise: A failure to disagree. *American Psychologist*, *64*(6), 515–526. https://doi.org/10.1037/a0016755

Kidder, L. H., & Fine, M. (1987). Qualitative and quantitative methods: When stories converge. *New Directions for Program Evaluation*, *1987*(35), 57–75.

King, R., McHugh, D., Alexander, J., Kiely, J., Yiannaki, C., & Rhodes, D. (2024).

Multidisciplinary team practitioners working in high performance sport: Skilled intuitive 'doers' or novel problem-solving innovators. *European Journal of Sport Sciences*, *3*(2), 15–26. https://doi.org/10.24018/ejsport.2024.3.2.143

Klein, G. (2004). *The power of intuition: How to use your gut feelings to make better decisions at work*. Crown Currency.

Knowles, Z., Miles, A., Huntley, E., Picknell, G., Mellalieu, S. D., Hanton, S., Ryall, E., Borrie, A., Trelfa, J., & Telfer, H. (2023). The reflective sport and exercise science practitioner. In *Reflective Practice in the Sport and Exercise Sciences* (pp. 27–37). Routledge.

Leeftink, A., Bikker, I., Vliegen, I., & Boucherie, R. (2020). Multi-disciplinary planning in health care: A review. *Health Systems*, *9*(2), 95–118.

Martin, A. K., Green, T. L., McCarthy, A. L., Sowa, P. M., & Laakso, E.-L. (2022). Healthcare teams: Terminology, confusion, and ramifications. *Journal of Multidisciplinary Healthcare*, (15), 765–772. https://doi.org/10.2147/JMDH.S342197

Mesmer-Magnus, J. R., & DeChurch, L. A. (2009). Information sharing and team performance: A meta-analysis. *Journal of Applied Psychology*, *94*(2), 535.

Mitchell, P. (2012). *Core principles & values of effective team-based health care*.

Mitchell, R., Boyle, B., O'Brien, R., Malik, A., Tian, K., Parker, V., Giles, M., Joyce, P., & Chiang, V. (2017). Balancing cognitive diversity and mutual understanding in multidisciplinary teams. *Health Care Management Review*, *42*(1), 42–52.

Mitchell, R., Nicholas, S., & Boyle, B. (2009). The role of openness to cognitive diversity and group processes in knowledge creation. *Small Group Research*, *40*(5), 535–554.

Mohammed, S., & Ringseis, E. (2001). Cognitive diversity and consensus in group decision making: The role of inputs, processes, and outcomes. *Organizational Behavior and Human Decision Processes*, *85*(2), 310–335.

Momsen, A., Rasmussen, J., Nielsen, C., Iversen, M., & Lund, H. (2012). Multidisciplinary team care in rehabilitation: An overview of reviews. *Journal of Rehabilitation Medicine*, *44*(11), 901–912. https://doi.org/10.2340/16501977-1040

Otte, F., Rothwell, M., & Davids, K. (2022). Big picture transdisciplinary practice-extending key ideas of a department of methodology towards a wider ecological view of practitioner-scientist integration. *Sports Coaching Review*, 1–24. https://doi.org/10.1080/21640629.2022.2124001

Otte, F. W., Rothwell, M., Woods, C., & Davids, K. (2020). Specialist coaching integrated into a department of methodology in team sports organisations. *Sports Medicine-Open*, *6*(1). https://doi.org/10.1186/s40798-020-00284-5

Page, S. E. (2007). Making the difference: Applying a logic of diversity. *Academy of Management Perspectives*, *21*(4), 6–20.

Page, S. E. (2014). Where diversity comes from and why it matters? *European Journal of Social Psychology*, *44*(4), 267–279. https://doi.org/10.1002/ejsp.2016

Page, S. E. (2019). *The diversity bonus: How great teams pay off in the knowledge economy*. Princeton University Press.

Reid, C., Stewart, E., & Thorne, G. (2004). Multidisciplinary sport science teams in elite sport: Comprehensive servicing or conflict and confusion? *The Sport Psychologist*, *18*(2), 204–217.

Rijpma, J. A. (2019). Complexity, tight-coupling and reliability: Connecting normal accidents theory and high reliability theory. In *Risk Management* (pp. 149–157). Routledge.

Rittel, H. W., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, *4*(2), 155–169.

Roberts, R. E. (2020). Qualitative interview questions: Guidance for novice researchers. *Qualitative Report*, *25*(9).

Rosen, M. A., Diazgranados, D., Dietz, A. S., Benishek, L. E., Thompson, D., Pronovost, P. J., & Weaver, S. J. (2018). Teamwork in healthcare: Key discoveries enabling safer, high-quality care. *American Psychologist*, *73*(4), 433–450. https://doi.org/10.1037/amp0000298

Rothwell, M., Davids, K., Stone, J., O'Sullivan, M., Vaughan, J., Newcombe, D., & Shuttleworth, R. (2020). A department of

methodology can coordinate transdisciplinary sport science support. *Journal of Expertise*, *3*(1), 55–65.

Salas, E., Cooke, N. J., & Rosen, M. A. (2008). On teams, teamwork, and team performance: Discoveries and developments. *Human Factors*, *50*(3), 540–547.

Salas, E., Rosen, M. A., & DiazGranados, D. (2010). Expertise-based intuition and decision making in organizations. *Journal of Management*, *36*(4), 941–973.

Salcinovic, B., Drew, M., Dijkstra, P., Waddington, G., & Serpell, B. G. (2022). Factors influencing team performance: What can support teams in high-performance sport learn from other industries? A systematic scoping review. *Sports Medicine-Open*, *8*(1). https://doi.org/10.1186/s40798-021-00406-7

Schraw, G., Dunkle, M. E., & Bendixen, L. D. (1995). Cognitive processes in well-defined and ill-defined problem solving. *Applied Cognitive Psychology*, *9*(6), 523–538. https://doi.org/10.1002/acp.2350090605

Scott, B. (2021). Multidisciplinary team approach in cancer care: A review of the latest advancements. *EMJ Oncology*, *9*(9), 2–13.

Seckler, E., Regauer, V., Rotter, T., Bauer, P., & Müller, M. (2020). Barriers to and facilitators of the implementation of multi-disciplinary care pathways in primary care: A systematic review. *BMC Family Practice*, *21*(1). https://doi.org/10.1186/s12875-020-01179-w

Sediri, S., Trommetter, M., Frascaria-Lacoste, N., & Fernandez-Manjarrés, J. (2020). Transformability as a wicked problem: A cautionary tale? *Sustainability*, *12*(15), 5895.

Stewart, P., Fletcher, D., Arnold, R., & McEwan, D. (2024). Exploring perceptions of performance support team effectiveness in elite sport. *Sport Management Review*, *27*(2), 300–321. https://doi.org/10.1080/14413523.2023.2284987

Swann, C., Moran, A., & Piggott, D. (2015). Defining elite athletes: Issues in the study of expert performance in sport psychology. *Psychology of Sport and Exercise*, *16*, 3–14. https://doi.org/10.1016/j.psychsport.2014.07.004

Taberna, M., Gil Moncayo, F., Jané-Salas, E., Antonio, M., Arribas, L., Vilajosana, E., Peralvez Torres, E., & Mesía, R. (2020). The multidisciplinary team (MDT) approach and quality of care. *Frontiers in Oncology*, *10*. https://doi.org/10.3389/fonc.2020.00085

Taylor, J., Collins, D., & Ashford, M. (2022). Psychological safety in high-performance sport: Contextually applicable? *Frontiers in Sports and Active Living*, *4*, 823488.

Tee, J. C., McLaren, S. J., & Jones, B. (2020). Sports injury prevention is complex: We need to invest in better processes, not singular solutions. *Sports Medicine*, *50*(4), 689–702. https://doi.org/10.1007/s40279-019-01232-4

Ulrich, G., & Breitbach, A. (2022). Interprofessional collaboration among sport science and sports medicine professionals: An international cross-sectional survey. *Journal of Interprofessional Care*, *36*(1), 4–14.

Vaughan, J., Mallett, C. J., Davids, K., Potrac, P., & López-Felip, M. A. (2019). Developing creativity to enhance human potential in sport: A wicked transdisciplinary challenge. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.02090

Wagstaff, C. R., & Quartiroli, A. (2023). A systems-led approach to developing psychologically informed environments. *Journal of Sport Psychology in Action*, *14*(4), 227–242.

Wagstaff, C. R. D., Gilmore, S., & Thelwell, R. C. (2015). Sport medicine and sport science practitioners' experiences of organizational change. *Scandinavian Journal of Medicine & Science in Sports*, *25*(5), 685–698. https://doi.org/10.1111/sms.12340

Walinga, J. (2017). From barriers to breakthroughs: Leading others past wicked problems to inclusive practice using integrated focus. In *Breaking the Zero-Sum Game* (pp. 395–417). Emerald Publishing Limited.

Walkenhorst, U., Mahler, C., Aistleithner, R., Hahn, E. G., Kaap-Fröhlich, S., Karstens, S., Reiber, K., Stock-Schröer, B., & Sottas, B. (2015). Position statement GMA Comittee–"Interprofessional Education for the Health Care Professions". *GMS Zeitschrift für medizinische Ausbildung*, *32*(2).

West, D., & Dellana, S. (2009). Diversity of ability and cognitive style for group decision processes. *Information Sciences*, *179*(5), 542–558.

Wilson, P., Roe, G., & Kiely, J. (2024). Decision-making in professional sporting environments: An International survey of experienced performance support staff perspectives. 10.21203/rs.3.rs-3861662/v1.

Woods, C. T., Rudd, J., Araújo, D., Vaughan, J., & Davids, K. (2021). Weaving lines of inquiry: Promoting transdisciplinarity as a distinctive way of undertaking sport science research. *Sports Medicine-Open*, *7*(1), 55.

Zajac, S., Woods, A., Tannenbaum, S., Salas, E., & Holladay, C. L. (2021). Overcoming challenges to teamwork in healthcare: A team effectiveness framework and evidence-based guidance. *Frontiers in Communication*, *6*, 606445.

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