

Athlete health protection: why qualitative research matters

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Abstract

Qualitative research is increasingly recognised as a relevant and useful approach to uncovering and understanding new and differentiated insights that move both research and practice forward. The field of athlete health protection – that is, injury and illness prevention and management – is reliant on high-quality knowledge of athlete and other key stakeholders’ perspectives, understanding of the complex relations within the athlete health protection system, the socio-ecological context in which athletes are provided with prevention and care, and how best to influence those involved in athlete health protection for better and more effective outcomes. Yet, deep interrogation of these aspects are often overlooked in favour of quantitatively-driven research questions. As athlete health protection research and practice matures, we argue that there is a need for research that complements traditional approaches and connects researchers from different disciplines - but which also distinctly holds space for the unique insights that qualitative approaches can add. The purpose of this editorial is to highlight the importance, value, and relevance of qualitative research to the field of athlete health protection – in other words, *why* qualitative research matters.

Key words: Qualitative, Athlete Health Protection, Injury Prevention, Sport, Research Methods

The past 30 years of athlete health protection – namely, injury and illness prevention and management - has largely been successful in answering the research and practice questions that our field has, up until now, sought to investigate. Interventions have proven efficacious in a wide range of areas and populations, and the field has moved to optimise effectiveness in recent years. Despite this success, it is widely acknowledged that athlete health protection still has a number of challenges to address.

These challenges include bridging the gap between research and practice in a number of key ways, for example: the inclusion of the athlete voice, pain management, and better understanding of training loads. In response to these challenges, recognition of the complexity of athlete health protection has recently emerged^{1,2} and qualitative research methods have been advocated as one important approach that can provide new understandings and lead to better practical outcomes.³ This is because qualitative research provides insight into athlete perspectives, can improve clinical understanding and outcomes, and may help us consider the athlete experience in our health protection work. There is, in this way, a real need for research that complements existing approaches and connects researchers from different disciplines, but which also distinctly holds space for the unique insights that qualitative approaches can add to current knowledge. In this way, qualitative research can explore and incorporate dimensions that are not currently represented in the literature, for better and more influential outcomes.

In September 2019, we founded the Qualitative Research in Sports Medicine (QRSMed) special interest group. Our aim is to identify and champion strategies required to facilitate, support, and incentivise qualitative research in athlete health protection. To do this, we aim to provide impetus to answer the research-to-practice questions that can only be explored through qualitative research, and in the process advance deeper understandings about athlete health protection. The purpose of this editorial, as a first step, is to highlight *why* qualitative research matters.

Qualitative research in athlete health protection: key examples

Encouragingly, high-quality and clinically/methodologically-relevant examples of qualitative research are emerging in our field. These have revealed new, innovative, and helpful findings related to athlete

health protection. Whilst we recognise the importance of quantitative approaches as being fundamental to some research and practice questions, we also advocate that other decisions are more usefully informed by qualitative approaches. To show this, we highlight exemplars from the work of QRSMed members, including around athlete voice, the circumstances under which elite athletes may hide their pain, and injuries. Finally, we reflect on what the implications might be for the research-to-practice gap.

Athlete voice

If we truly believe that the *athlete* is in fact the main focus of athlete health protection, it stands to reason that their experiences and perceptions should shape and inform the way we develop our athlete health protection strategies. Information about their beliefs, perceptions, behaviour, preferences, and experiences can, and do, shape and improve healthcare decisions.⁴ For example, Badenhorst and colleagues^{5,6} reported on the experiences of South African rugby players who sustained spinal cord injuries on the field. The players in this study described the symptoms they experienced and how they tried to make sense of what was happening and importantly, how they verbalised what they were feeling to fellow team-mates or coaches. For example, several players experienced proprioceptive disturbances, but did not understand what was happening to their bodies. Many players had never considered a spinal cord injury to be a possibility while playing rugby, nor what they would experience if it happened. Players described the factors they considered to contribute to their injury, including descriptions of foul play, which included illegal tackles (both by themselves and others) and unsanctioned aggression with the intention to harm. For some participants, the pressure to perform meant winning against all odds, leading to increased risk-taking behaviour. This research showed that it is important for fellow team-mates, coaches and referees to be aware of the signs and symptoms of spinal cord injury, as - especially in amateur games and communities that have less resources and medical support (which is often the case in South Africa) - they are often the first to respond to an injured player.

Uncovering these complex layers of behaviour is key when considering preventative strategies.⁷ Optimal management of injuries may be influenced by various factors present at the time of injury and these factors need to be understood in their respective contexts.⁸ ‘Context’ in this sense, often played a

determining role in the way the injury management process would unfold. This is mirrored in work from Fagher and colleagues,⁹ who showed through qualitative research that the perception of injuries and possibilities to prevent them may vary between athlete populations. In this research, Paralympic athletes' perceptions of injuries and possibilities to prevent them differed significantly from able bodied athletes - due to the already existing impairment. Consequently, these qualitative findings assisted researchers in specifically tailoring injury prevention programmes that are underpinned by the athletes' own perception and possibilities.⁹ Similarly, the experiences of players reported in the spinal cord injury study discussed above have been utilised by BokSmart,¹⁰ South Africa's national rugby safety programme, in their mandatory biennial courses to educate coaches and referees in the early recognition of these injuries. In this way, qualitative research in athlete health protection is already proving impactful in athlete health protection policy and practice.

Athletes hiding their pain, and the nexus with training loads and care

A second example of where qualitative research can lead to differentiated insights is in exploring the circumstances under which elite athletes may hide their pain and injuries, and what the implications might be for practice. Qualitative research in this area shows that elite athletes tend to take breaks too late when encountering physical complaints, and return to training and competition too early after recovery.¹¹ Concealing pain in order to participate in competitions has been shown to be very common in elite sports,¹²⁻¹⁴ and one of the main reasons for this risky behavior is the so-called 'culture of risk' in elite sports.¹⁵ To analyse the culture of risk by applying qualitative approaches thus seems particularly appropriate. The typical elite sports culture is characterized by a collective tacit understanding that training and competing in pain is an essential part of elite sports.¹³ At the same time, athletes perceive the willingness to return to competitions after injuries and illnesses as early as possible as a precondition for success.¹¹ Accordingly, it can be assumed that athletes are not necessarily aware of the harmful nature of this behavior, which in turn requires a highly sensitive and investigative approach to data collection. In this way, qualitative analyses can also identify the dynamics of being socialized into the culture of risk.¹⁶

¹⁷ Further, qualitative approaches help to capture details about sensitive topics, hidden emotions, and confusing bodily experiences during such biopsychosocial transitions.¹⁸

Qualitative research techniques thus make it possible to reveal harmful interaction patterns between athletes on the one hand, and trainers, clinicians and the broader context on the other.¹⁹ For example, athletes are expected to cope with stressors without mentioning any complaints. As the performance level increases, the more athletes are expected to show invulnerability and ‘steeliness’. Ignoring and trivializing pain becomes a standard behavior, athletes learn a maximal inhibition of pain-perception.²⁰ This inhibition works because young athletes often pass the control of their individual well-being onto the coach.²⁰ Athletes accept that the coach decides whether training loads or pain are too much for competition or training. Since the coaches perceive themselves as to be guided by objective ‘load standards’, and assume that they know the athletes and their complaints, they tend to underestimate the athletes’ willingness to ignore and conceal pain and injuries.¹⁸ Consequently, training load and the actual resilience of the young athletes do not necessarily coincide. Similar patterns are observable regarding the medical care provided in elite sports. Medical care itself does not necessarily compensate for the acceptance of the health-related, highly-risky willingness to ‘compete hurt’ [cf.²¹]. In the case of pain and injury, athletes expect their medical staff to prioritise fitness for training or the next competition. Actions of medical staff are therefore often characterized by the logic of “repairing“ instead of healing. In this sense, ethical dilemmas and power struggles characterize interactions in the context of the treatment of injuries and pain.^{22,23} However, ethical dilemmas and power struggles are not easily quantified. Rather, what is needed is qualitative research that makes it possible to ‘drill below the surface’ to a more nuanced understanding of these complex interactions.

Implementation of health protection strategies and guidelines

A final example of where qualitative research may provide important additional information is the implementation stage of health protection strategies and guidelines, and in particular the question “are contemporary findings and clinical recommendations reaching the target audience, the athletes themselves?”. In a recent work on sports-related concussion (SRC), despite an evolving body of literature

and scientific consensus on the topic, ski racers' understanding of SRC and its management revealed to be strongly limited.²⁴ Major shortfalls, were related to: 1) athletes' grasp of the precise definition of SRC, 2) athletes' awareness of the connection between SRC and affective symptoms, and 3) athletes' understanding of the reasoning behind graduated return-to-play protocols; three gaps potentially undermining the reporting of symptoms and constituting a greater occurrence of premature return-to-play following SRC. This has clear implications for the implementation of athlete health protection measures.

These examples show that, by applying qualitative methods, we can gain an in-depth understanding of different athlete beliefs, contexts, and learn from insights that may shape future interventions.⁸ In this way, qualitative research can assist all stakeholders (including athletes, governing bodies, coaches, and clinicians), to be more responsive to the needs of athletes themselves. Thereby, putting sports in a better position to provide optimal care.⁵ Qualitative methods may, therefore, help shift our focus away from a one-size fits all approach for athlete health protection.

A call to action: more and better qualitative research

With the turn towards the importance of centering the athlete as key stakeholder - and their inclusion in research and practice decisions – qualitative research has never been more relevant and timely. Qualitative research has the inbuilt mandate to place the stakeholder (often the athlete, in our field) front and centre in both formulating the research question as well as the analysis. Truly athlete-centered approaches, as we have shown in our exemplars, will require that we embrace and incorporate the 'multiple truths' and 'social facts' of our research and practice.²⁵ This includes recognising and integrating the perspectives of athletes, members of their multidisciplinary coaching and clinical care teams, and others involved in athlete health and protection.⁸ In this way, athlete health protection is now confronted with different kinds of questions that require methodological pluralism and pluralist perspectives – with a specific focus on qualitative research - for better and more relevant outcomes.³

As Greenhalgh and colleague^{26 [pi563]} write: “Qualitative studies help us understand why promising clinical interventions do not always work in the real world, how patients experience care and the surrounding world, and how practitioners think.” Further, qualitative research can help us better understand the complex relations within athlete health protection as a complex system, including the socio-ecological context in which athletes are provided care, and how best to influence those involved in athlete health protection for better and more effective outcomes. By ensuring a seat at the table for qualitative research, we hold space for more clinically-relevant knowledge building, the advancement of excellence in our field, and, ultimately, ensuring that we truly are working in service of athlete-centered research and practice. In this way, qualitative research is highly important to, valuable for, and relevant to, the big picture of athlete health protection. The time for high quality qualitative work has come, and as the *Qualitative Methods in Sports Medicine* special interest group, we are eager to lead the way.

References:

1. Bekker S, Clark AM. Bringing complexity to sports injury prevention research: from simplification to explanation. *Br J Sports Med*, 2016;50(24):1489-1490.
2. Bittencourt NFN, Meeuwisse WH, Mendonça LD, Nettel-Aguirre A, Ocarino JM, Fonseca ST. Complex systems approach for sports injuries: moving from risk factor identification to injury pattern recognition—narrative review and new concept. *Br J Sports Med*, 2016;50(21):1309-1314.
3. Bekker S. Shuffle methodological deck chairs or abandon theoretical ship? The complexity turn in injury prevention. *Inj Prev*, 2019;25(2):80-82.
4. Slade SC, Patel S, Underwood M, Keating JL. Rigorous qualitative research in sports, exercise and musculoskeletal medicine journals is important and relevant. *Br J Sports Med*, 2018;52(22):1409-1410.

5. Badenhorst M, Verhagen E, Lambert M, van Mechelen W, Brown J. When This Happens, You Want the Best Care: Players' Experiences of Barriers and Facilitators of the Immediate Management of Rugby-Related Acute Spinal Cord Injury. *Qual Health Res*, 2019;29(13):1862-1876.
6. Badenhorst M, Verhagen E, Lambert MI, van Mechelen W, Brown JC. 'In a blink of an eye your life can change': experiences of players sustaining a rugby-related acute spinal cord injury. *Inj Prev* 2019;25(4):313-320.
7. Verhagen EALM, van Stralen MM, van Mechelen W. Behaviour, the Key Factor for Sports Injury Prevention. *Sports Med*, 2010;40(11):899-906.
8. Bolling C, van Mechelen W, Pasman HR, Verhagen E. Context Matters: Revisiting the First Step of the 'Sequence of Prevention' of Sports Injuries. *Sports Med* 2018;48(10):2227-2234.
9. Fagher K, Forsberg A, Jacobsson J, Timpka T, Dahlström Ö, Lexell J. Paralympic athletes' perceptions of their experiences of sports-related injuries, risk factors and preventive possibilities. *Eur J Spors Sci*, 2016;16(8):1240-1249.
10. Boksmart. *The BokSmart rugby safety programme*. 2012.
<http://boksmart.sarugby.co.za/content/>.
11. Mayer J, Giel KE, Malcolm D, Schneider S, Diehl K, Zipfel S, et al. Compete or rest? Willingness to compete hurt among adolescent elite athletes. *Psycho of Sport and Exer*. 2018;35:143-150.
12. Nixon HL. A Social Network Analysys of Influences On Athletes To Play With Pain and Injuries. *J of Sport Soc Iss*, 1992;16(2):127-135.
13. Roderick M, Waddington I, Parker G. Playing Hurt:Managing Injuries in English Professional Football. *Int Rev Sociol Sport*, 2000;35(2):165-180.
14. Tscholl P, Junge A, Dvorak J. The use of medication and nutritional supplements during FIFA World Cups 2002 and 2006. *Br J Sports Med*, 2008;42(9):725-730.
15. Nixon HL. Accepting the Risks of Pain and Injury in Sport: Mediated Cultural Influences on Playing Hurt. *Sociol of Sport J*, 1993;10(2):183-196.
16. Bette K-H, Schimank U, Wahlig D, Weber U. *Biographische dynamiken im leistungssport: Möglichkeiten der dopingprävention im jugendalter*. Sport und Buch Strauß, Köln; 2002.

17. Curry TJ. A Little Pain Never Hurt Anyone: Athletic Career Socialization and the Normalization of Sports Injury. *Symb Int*, 1993;16(3):273-290.
18. Schubring A, Thiel A. Coping With Growth in Adolescent Elite Sport. *Sociol of Sport J*, 2014;31(3):304-326.
19. Ivarsson A, Johnson U, Karlsson J, Börjesson M, Hägglund M, Andersen MB, et al. Elite female footballers' stories of sociocultural factors, emotions, and behaviours prior to anterior cruciate ligament injury. *Int J Sport Ex Psych*, 2019;17(6):630-646.
20. Thiel A, Schubring A, Schneider S, Zipfel S, Mayer J. Health in Elite Sports-a "Bio-Psychosocial" Perspective. *German J of Sports Med/Deutsche Zeitschrift fur Sportmedizin*. 2015;66(9).
21. Malcolm D. Unprofessional Practice? The Status and Power of Sport Physicians. *Sociol of Sport J*, 2006;23(4):376-395.
22. Malcolm D, Safai P. Introduction: *The social science of sports medicine*. *The Social Organization of Sports Medicine*. Routledge; 2012.
23. Waddington I. 11 Ethical problems in the medical management of sports injuries. *Pain and injury in sport: Social and ethical analysis*. Routledge; 2006
24. Maxwell N, Redhead L, Verhagen E, Spörri J. Ski racers' understanding of sports-related concussion and its management: are contemporary findings and clinical recommendations reaching the target audience, the racers themselves? *Br J of Sports Med*, 2020;bjsports-2019-101544.
25. Atkinson ACP. *Qualitative Analysis: Issues of Theory and Method*. London: Sage; 1997.
26. Greenhalgh T, Annandale E, Ashcroft R, Barlow J, Black N, Bleakley A, et al. An open letter to The BMJ editors on qualitative research. *BMJ*, 2016;352:i563.

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