



# 'Another world of pain' – athlete and sport physiotherapist perspectives on the unique experience of pain in sport

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**To cite:** Purcell C, Fullen B, Barry Walsh C, *et al.* 'Another world of pain'—athlete and sport physiotherapist perspectives on the unique experience of pain in sport. *BMJ Open Sport & Exercise Medicine* 2024;**10**:e002020. doi:10.1136/bmjsem-2024-002020

► Additional supplemental material is published online only. To view, please visit the journal online (<https://doi.org/10.1136/bmjsem-2024-002020>).

Accepted 10 August 2024



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## ABSTRACT

Our objective *was* to explore athlete's and sports physiotherapists' experiences of sports-related pain in the upper and lower limb. Using a constructivist and pragmatic perspective, we carried out focus groups comprising a deliberate criterion sample of athletes and sports physiotherapists. We used a topic guide that moved from open exploratory questions to questions focusing on the phenomena of sports-related pain in athletes. We coded, developed candidate themes and refined finalised themes using reflexive thematic analysis. A member of our research team acted as a critical friend adding additional perspectives. We followed the Consolidated Criteria for Reporting Qualitative Research (COREQ). We completed five focus groups comprising 12 athletes (n=5 female, n=7 male) and four sports physiotherapists (n=4 male) including one initial pilot (two athletes). We developed four final themes (1–4) and nine subthemes (1.1–4.3): (1) Athlete Pain Lens (1.1—pain is part of being an athlete and 1.2—pain shapes the life of an athlete), (2) Exploring And Navigating Pain (2.1—the sports-related pain spectrum and 2.2—making sense of pain), (3) The Emotional Toll of Pain (3.1—challenging emotions and 3.2—the impact of time) and (4) Coping, Community and Communication (4.1—coping with pain, 4.2—influence of community and support network and 4.3—communication, the broken key). We highlighted the distinct and challenging phenomenon of sports-related pain experienced by athletes and physiotherapists. Through effective communication, members of the athlete's community may recognise, and adjust to these challenges.

## INTRODUCTION

With the rise in the commodification of athletes in elite sports and the focus on objective over subjective markers to quantify performance and health, it is more important now than ever before to listen to the voice of athletes when they share their pain experiences, before it is lost.<sup>1</sup> Despite the focus on *sports-related injury* and availability to compete, a spotlight on *athlete pain* has emerged.<sup>2–3</sup> Through an international consensus statement on athlete pain and related works, the International Olympic

## WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Pain is a complex biopsychosocial experience that is prevalent in athlete's influencing performance and quality of life.

## WHAT THIS STUDY ADDS

⇒ Athlete pain is unique to each athlete forming part of their identity.  
⇒ Athlete pain poses challenges for athletes and physiotherapists to interpret, diagnose and manage and is influenced by a range of emotions and contextual factors that can be addressed in a comprehensive biopsychosocial model of pain assessment and management.

## HOW THIS STUDY MIGHT AFFECT RESEARCH PRACTICE OR POLICY

⇒ Clinicians and athlete support staff can consider the range of internal (emotional and cognitive) and external (socioenvironmental and support networks) contextual factors influencing the experience of pain in athletes and appreciate the challenges this and the influence effective communication can have. There is scope for future research to explore the unique nature of the athlete pain assessment.

Committee (IOC) recommend a multidimensional, biopsychosocial approach to athlete pain that goes beyond traditional structure-based understanding to include aspects of pain perception and experience across five key domains: neurophysiological, biomechanical, affective, cognitive and socioenvironmental.<sup>4–5</sup> In relation to *sports-related injury*, psychosocial aspects such as history of stress and coping responses have been linked with injury rates.<sup>6</sup> Furthermore, sports-specific sociocultural aspects such as attitudes and culture encouraging athletes to be 'tough' and 'stay in the game' have been linked to injury risk, injury rates and timely access to healthcare and treatment. When it comes to athlete pain, the context of the pain experience has been highlighted as a key component of contemporary pain science, where the same pain experience may be

interpreted as stressful or alarming in one context and as a helpful indicator to manage resources in another.<sup>7</sup> A recent scoping review<sup>8</sup> has highlighted a gap in the use of contextual (affective, cognitive and socioenvironmental) pain assessment tools with athletes experiencing upper or lower limb pain in both research and practice settings, which may be problematic when it comes to fully understanding *athlete pain*.

Clinicians can feel underequipped when it comes to effectively understanding and assessing athlete pain.<sup>9</sup> Qualitative research can harness the athlete's voice and explore the context of their experience and offer insights into how clinicians may best support athletes experiencing pain.<sup>10 11</sup> Improved understanding and assessment may facilitate better awareness and education which may ultimately lead to enhanced management strategies as has occurred in sports-related injury.<sup>12</sup> Traditionally, qualitative research has focused on the separate experiences of athletes and clinicians when it comes to pain, much of which has focused on low back pain.<sup>13 14</sup> To truly understand the *athlete pain* phenomenon while preserving the voice of the athlete, there is a need to gather both athletes' and physiotherapists' shared definitions and experiences.

We aimed to explore athlete and sports physiotherapists shared experiences and perspectives of upper and lower limb pain in a sporting context through mixed focus groups. We chose upper and lower limb pain (peripheral pain) for two reasons. First, the majority of the existent qualitative literature completed with athletes focuses on central pain, specifically low back pain. Conducting research with athletes experiencing upper or lower limb pain will allow for comparisons to see if the same concepts and experiences are shared or whether different perspectives exist. Second focusing on upper and lower limb pain facilitates insights into pain related to a number of specific presentations commonly encountered by sports physiotherapists. These include ligament sprains (eg, ankle, knee and acromioclavicular joint), muscle strains (eg, hamstring, calf and rotator cuff) and tendon pain (eg, achilles, patellar rotator cuff). We use the term athlete pain in this study to describe all occasions an athlete experiences pain, both in the presence and absence of specific sports related injury or tissue pathology.

## METHODS

We conducted a qualitative study with mixed focus groups combining athletes and sports physiotherapists and followed the Consolidated Criteria for Reporting Qualitative Research (COREQ).<sup>15</sup> Ethical permission was granted for our study by the UCD Human Research Ethics Committee (LS-22-40-Purcell-Caulfield). Focus groups were chosen as a method to facilitate shared and interactive discussions and dialogue between athletes and physiotherapists which cannot be achieved through interviews alone.<sup>16</sup> We used reflexive thematic analysis<sup>17 18</sup> as a

research method congruent with our theoretical position which is described below.

## Positionality statement

As a sports physiotherapist and clinician, my (CP) move to research was one inspired by pragmatism and constructivism drawing on the relevant knowledge from elements of empirico-analytical, interpretive and critical research paradigms.<sup>19 20</sup> In other words, I believe that knowledge and information is generated through experiences and therefore the knowledge gained through our research is a product of all of those involved including participants and researchers. There is no universal truth or singular correct answer when it comes to *athlete pain* rather a collection of experiences that we can derive meaning from. Equally, it is important to appreciate the various power dynamics that exist within society (critical research) which we aimed to address in our research. My motivation stems from investigating solutions to real-world problems and clinic queries where the best method is often the one that works (ie, a pragmatic approach). I recognise the need for hearing the patient's (athlete's) voice. My doubts, assumptions and beliefs drive my position of a value-driven axiology.<sup>21</sup> I recognise that being a sports physiotherapist and PhD researcher influences discussions and interactions in my role as lead interviewer.<sup>19</sup> I embrace my position to understand athletes' and clinicians' upper and lower limb pain experiences through taking a reflexive approach.<sup>18</sup> Alongside 8 years of clinical experience assessing and treating athletes, I (CP) have gained qualitative research experience through an MSc in Sports Physiotherapy. GvO (moderator) is a PhD candidate and sports physiotherapist with 17 years of experience. BC (neutral observer) is a professor in physiotherapy with 20 years of research experience. CBW (critical friend) is a physiotherapist and PhD researcher in the field of chronic conditions with experience in the conduct of focus groups.

## Participants

We recruited a deliberate criterion sample. We sought athletes spread across multiple sports of varying ages, genders and competition levels. Eligibility criteria for athletes included currently competing in sport, with experience of an upper or lower limb pain episode requiring sports physiotherapist assessment within the last year. We recruited sports physiotherapists with three or more years of experience currently working with athletes weekly from a range of clinical and sports settings. These eligibility criteria were chosen to ensure a depth of experience of working with athletes experiencing pain in order to contribute effectively to the focus groups. The notion of data saturation has been contested given that data and themes are generated through interpretation and there can be no objective point at which no new themes 'emerge' in an active constructivist approach.<sup>22</sup> Therefore, we ceased sampling when sufficient depth of information on *athlete pain* experience was gathered.

We recruited athletes through university sports clubs and local sports clubs' email and communication channels. 43 University club captains were contacted via the University head of sport and all club members were sent an email with the study information. A number of local sports clubs based close to the University including team and individual sports were also contacted. All athletes meeting the eligibility criteria and who were available to participate in the focus groups were included. We contacted sports physiotherapists registered with the Irish Society of Chartered Physiotherapists Sports and Exercise Medicine (CPSEM) Group working across a variety of sports and settings. Study information was shared with all CPSEM members via email channels. Additionally, the research team contacted national sports bodies via email and shared the study information in a national network of >300 sports physiotherapists. We offered participants their preference of either a fully face-to-face or fully online (Zoom Video Communications, San Jose, USA) focus group. All eligible sports physiotherapists available to attend a focus group were included.

### Protocol

We sent participants a preparticipation questionnaire to capture background demographics, sporting context and pain history (online supplemental appendix A). We collected information from physiotherapists relating to their experience working in and participating in sports and any additional sports physiotherapy-related qualifications. We used a step-by-step approach which included brainstorming, ordering, timing and phrasing of questions, obtaining feedback from peers, revising and piloting to develop the topic guide for the focus groups.<sup>23</sup> The topic guide moved from broad introductions and context to more focused questions concerning athlete pain definitions, understandings and experiences (online supplemental appendix B). Two hours were allocated to cover all questions which were open, and encouraged interaction between participants. We altered the sequencing of questions between focus groups in line with an iterative and reflexive approach.<sup>24</sup> We commenced each focus with ground rules focusing on confidentiality, equity and respect for diverse views and opinions, and we requested that athletes share their opinions before physiotherapists to moderate the power imbalance (online supplemental appendix C). We endeavoured to separate athletes and physiotherapists who previously worked together. Face-to-face focus groups took place in a spacious and private room in the University. Participants were offered water and snacks prior to commencing the focus groups and given 10 min to mingle. Chairs were arranged in a circle with the audio device for recording placed in the centre. A MacBook Pro laptop (Apple, California, USA) using the Voice Memo application, connected to a Logitech conference mic (Logitech International SA, Lausanne, Switzerland) for enhanced sound quality. Online focus groups were conducted via Zoom (Zoom Video Communications, San

Jose, USA) which facilitated audio recording within the software. Ninety minutes were allocated to each focus group to allow for sufficient time to fully explore the topic.

### Data analysis

We transcribed the focus groups verbatim and published the uncoded and anonymised data set in an online repository (10.17632/t47tw94mzd). We adopted the six-step reflexive thematic analysis approach outlined and refined by Braun and Clarke.<sup>17 25 26</sup> In keeping with the development of reflexive thematic analysis over time, we embraced our subjectivity and role in the generation and development of themes.<sup>18 27</sup> We began our data analysis following the initial pilot focus group informing sampling, data collection and analysis for subsequent focus groups in an iterative manner. I (CP) read the transcripts in their entirety, added initial observations and notes and subsequently carried out initial coding of the entire transcripts (both semantic and latent). One-third of the transcripts were given to CBW to code independently. We discussed, compared and refined initial codes using a critical friend approach to incorporate breadth and variation in perspectives.<sup>28</sup> CP then reread transcripts and updated coding where necessary before codes were compared, with similar codes being highlighted and grouped to form rough clusters of candidate themes. The team reviewed candidate themes in the context of the research and considered the data available to support each theme. We merged some themes and adjusted others at this refinement stage. We applied titles and developed a final thematic map. In keeping with reflexive thematic analysis methodology, the final phase of our data analysis was the generation of the written report.

### Patient & public involvement

A convenience group of five athletes (female: n=3, male: n=2) from a range of competition levels and sports formed a patient and public involvement panel for this research project. They reviewed and commented on the research questions, topic guide and information provided to participants before the focus groups ensuring adequate athlete representation and appropriate participant burden. Their feedback was incorporated into the design and delivery of the final focus groups (the prefocus group information was updated to include definitions of terms and the topic guide was updated to include additional prompts) and their input was sought in the presentation of the final results and the inclusion of the final results in an initial Delphi survey which will inform the development of a set of athlete pain assessment recommendations.

### Equality, diversity & inclusion

Participants across gender, age, competition level and sport were sought for this study, our purposive sampling included local clubs both within and outside of the University setting facilitating diversity of the sample from

an age and socioeconomic demographic perspective. We offered face-to-face as well as Zoom focus group options to increase accessibility. Our research team comprises clinical and research physiotherapists with a variety of experience and backgrounds and one computer scientist. There were four males and two female members of the research team. It is important to consider that the interviews were conducted by male members of the research team and although the female members played a significant role in the data analysis and write up, future research should consider a female member of the interview team. Athletes were recruited primarily within the geographical proximity of the University and so participants were predominantly from middle and upper socioeconomic regions and were all from a white Irish ethnic background. Sexual orientation was not recorded. Future research targeting participants from lower socioeconomic regions of different ethnic backgrounds and sexual orientations would be of value. While recruitment sought both male and female sports physiotherapists and 11 female sports physiotherapists indicated interest to participate, none were available to participate in the focus groups due to work commitments. Future research should prioritise the inclusion of female sports physiotherapists and consideration of one-to-one interviews may be helpful in overcoming group scheduling challenges.

## RESULTS & DISCUSSION

### Focus groups and participant demographics

There were five focus groups in total including one initial focus group with two athletes (one of whom was a practising physiotherapist but not primarily in the area of sports physiotherapy). Between three and five participants took part in each of the focus groups (apart from the pilot) There was a mixture of athletes and physiotherapists in the focus groups to facilitate sharing of perspectives of athletes and physiotherapists. Three of the focus groups were conducted face to face and two online via Zoom.

Table 1 presents a summary of participant demographics. A breakdown of each participant's specific background and demographic details is available in online supplemental appendix D. We assigned athletes and physiotherapists alphanumeric participant IDs beginning with the letter 'A' or 'P', respectively. Athletes and physiotherapists discussed and explored shared experiences and concepts and so we merged the data for coding and analysis purposes. We identified codes in (1) athletes only, (2) physiotherapists only and (3) both athletes and physiotherapists. Figure 1 displays the final themes and the corresponding codes assigned to each theme. Figure 2 is a thematic map of the themes and subthemes relevant to athlete pain.

### Theme 1. The Athlete Pain Lens

Theme 1 includes two subthemes: 1.1—pain is part of being an athlete and 1.2—pain impacts and shapes the life of an athlete.

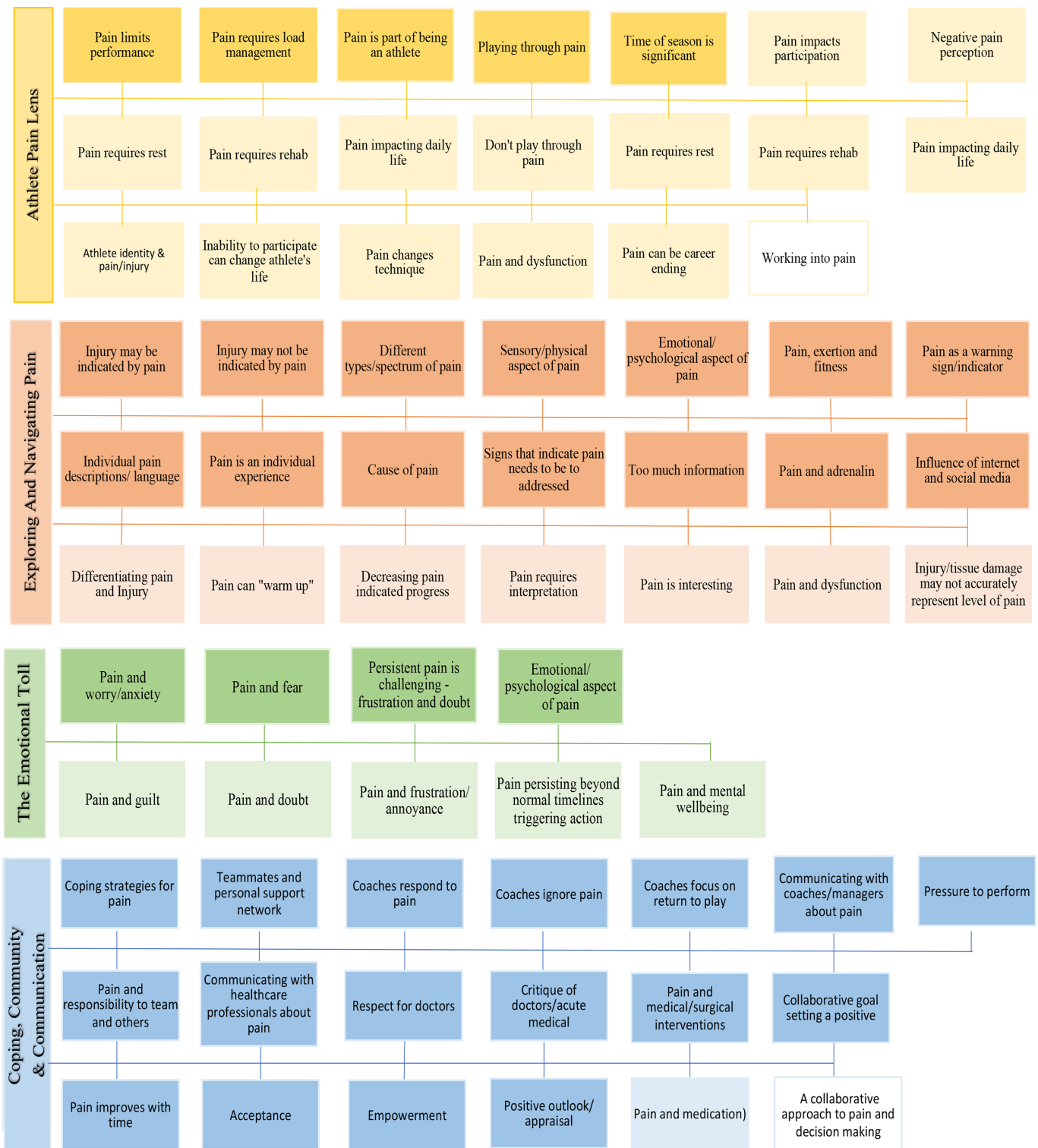
#### 1.1 Pain is part of being an athlete

Participants shared how pain is an inherent aspect of being an athlete, shaping their identity. Participants found that the interaction between pain, exertion and fitness is an enmeshed aspect of *athlete pain* experience with athletes acknowledging that pain or muscle soreness can be a sign of effort towards the attainment of fitness. In line with contemporary research, playing through pain whether it be exertion-related or otherwise was commonplace behaviour reported by both sports physiotherapists and athletes although with potentially negative consequences.<sup>29</sup> The main concern athletes had was the impact pain has on their performance, particularly during competitive parts of the season. Physiotherapists also acknowledged the impact the time of the season has on pain behaviours.

I find that you live with pain. It's not that you wait for the day for pain to come or go. (A01)

**Table 1** Participant demographics

Participants	N	Female	Male	Sport (n)	Competition level (n)	Physiotherapy background (n)	Athlete background (n)	Age range/years experience
Athletes	12	5	7	Athletics (5), Tag Ruby (1), Field Hockey (1), Soccer (2), Cycling (1), Mixed Martial Arts (1), Gaelic Football and Basketball (1)	Professional/International/Elite (6), Semi-Professional (1), Intersports/Interprovincial (2), Amateur/Club (4)	Yes (5) No (7)	NA	18–21 (2) 22–39 (9) ≥40 (1)
Physiotherapists	4	–	4	Athletics (1), Rugby (1), Gaelic Football and Hurling (2), Mixed Sports in Private Practice (3)	Professional/International (2), Mixed Competition Level in Private Practice (3)	NA	Current Athletes (2) Retired Athletes (2)	9,10,12,15
NA, not applicable.								



**Figure 1** Athlete Pain themes and codes.

You've put in a good effort in a training session. at the start of the season you're sore but you know it's a good thing. (A06)

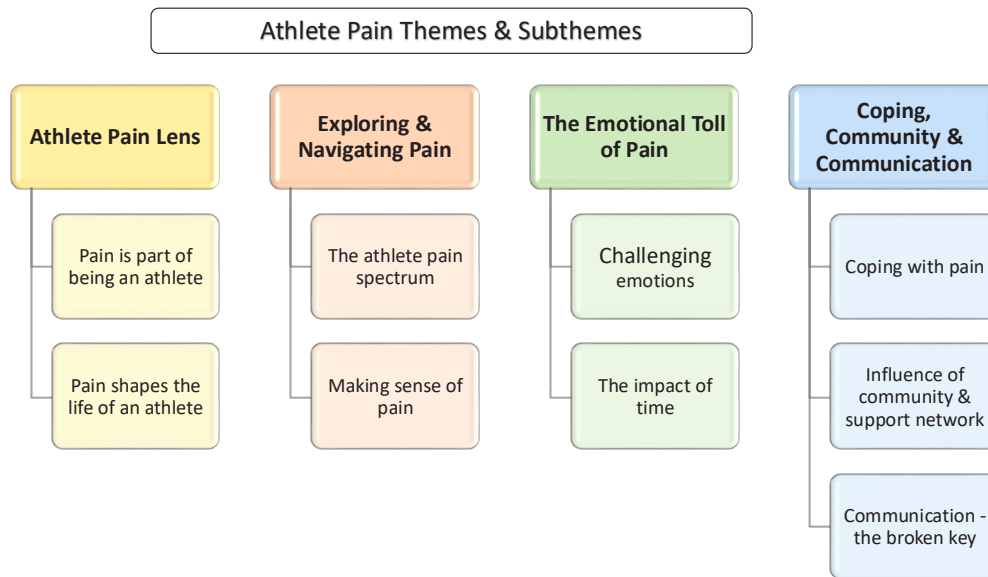
I'm happy to run through pain all summer and just my only worry is that it impacts performance. (A08)

Because depending on time of season, what's coming up, changes someone's, maybe not how they

experience pain but certainly how far they're willing to take it. (P04)

### 1.2 Pain impacts and shapes the life of an athlete

Athletes and physiotherapists alike defined pain as something that influences an athlete's ability to participate and perform in their sport. Athletes described how pain also



**Figure 2** Athlete pain themes and subthemes.

impacts their daily life outside of sport with the combination of the physical and emotional experience having the potential to influence their identity. Athletes highlighted how pain interfered with activities of daily living which is something they often judged to indicate increased severity. Additionally, they shared how persistent and severe pain can change how they live their life through inability to take part in their sport. Previous research has documented how the impact of pain on daily life and mental wellness can force athletes to contemplate their future in sport, something one athlete in this study resonated with.<sup>30</sup>

If it's in the back of your mind that you can't ... you know you are thinking of something that may be impacting your performance. (P03)

I suppose physical pain can often translate into being an emotional pain, not being able to participate can change the life of an athlete. (A04)

When I get more concerned it is, say power on stairs, or power on a kerb while walking or something like that. So it's when it impacts on my outside running life. (A01)

When I'm sitting down it would just knot up and get really sore, I'd have to straighten my leg, I wouldn't be able to sit down for long periods of time, driving would be really difficult. (A11)

It happens me all day, every day, there's times that I limp because of it and I can't walk. I've had to adjust my lifestyle. I can't wear certain shoes, I can't just run for a bus I need a good long warm up and I am meant to be an athlete. (A08)

I'm able to run through it but it causes me so much pain that I contemplate retiring. (A08)

The altered identify or sense of self and negative affective aspects discussed earlier speak to the experience of

suffering associated with pain<sup>31</sup> beyond the sensory experience of pain alone, and will be discussed in further detail in theme 3.

## Theme 2. Exploring And Navigating Pain

Theme 2 includes two subthemes: 2.1—the athlete pain spectrum and 2.2—making sense of pain. Athletes experience a variety of unique pain encounters. The International Association for the Study of Pain (IASP) describes how the concept of pain is learnt through life experiences.<sup>32</sup> Athletes interpret and learn about their pain to determine whether each pain episode is part of the normal pain experience, or if it is associated with potential injury and subsequently warrants action.<sup>29</sup> Pain is neither predictable nor repeatable. The abundance of available information through the internet and various sources is often more of a hindrance than a help. Athletes appear to have more competition for their attention than previous generations, as discussed by coaches of Generation Z athletes.<sup>33</sup> All of these aspects contribute to a complex phenomenon that is not easily understood and warrants greater attention, appreciation and representation. This theme presents the experiences and perspectives of athletes and physiotherapists when it comes to understanding and managing pain.

### 2.1 The athlete pain spectrum

In line with contemporary research which outlines a continuum from pain to injury,<sup>3 34</sup> pain experience existed along a spectrum for athletes and physiotherapists alike who described a variety of pain presentations from routine training-related muscle soreness, to 'niggles', to pain that is more sinister and may be a cause for concern. The IASP definition of pain highlights how pain perception has both sensory and emotional aspects.<sup>32</sup> In our study, participants

described how these sensory and emotional aspects are influenced by a multitude of sports-related activities from a routine warm-up to the rush of adrenalin and intense focus experienced when competing. Athlete's shared how this situational and contextual pain perception served the purpose of deferring the pain experience and facilitating their performance during competition.

I've seen lots of different injuries and lads and girls experiencing different levels of pain from injuries as well. I've had injuries myself. (P04)

It kind of has physical implications and psychological as well yeah. (A11)

For the majority of anything from a niggle to an injury, if you warm up you can still run on it. (A01)

The adrenaline of it all takes over I'm able to finish the rep or finish the race but as soon as I stepped off the track, I said to my coach on both occasions like ah somethings gone wrong. (A08)

## 2.2 Making sense of pain

Differentiating between pain and injury is a challenge athletes and physiotherapists often grapple with. In many cases, injuries may be indicated by pain, while in others it is not. The amount and intensity of pain an athlete perceives are influenced by factors beyond tissue damage,<sup>2-4</sup> something which athletes and physiotherapists in our study found frustrating to reconcile.

That is something I definitely struggle with from an athlete perspective is when does pain become something that stops you from competing ... as opposed to finding that place where you know it's safe to continue. (A12)

I don't think it relates to pain, I don't think pain relates to level of injury, I think it's a very loose connection to make, especially an acute injury. (P04)

Exploring the meaning of pain, athletes and physiotherapists acknowledged the individual nature of pain enlisting individual pain descriptions and language to describe their experiences. Accurately representing pain required consideration and time for reflection with successful communication hinging on the physiotherapist understanding and valuing the athlete's unique lexicon.

I think everyone kind of expresses themselves differently. (A11)

I suppose as long as your physio understands your language, that's the key thing and that's where the relationship with your physio is actually kind of important. (P03)

Contributing to feelings of frustration, athletes are also faced with an abundance of information from different sources. Previous research suggests that availability of large swathes of information makes

it difficult to identify the most important elements when it comes to managing pain and operating in a contemporary world adds additional complexity.<sup>33</sup> Athletes and physiotherapists in our study discussed how the internet, social media and data derived from wearable technologies might provide a source of helpful information but often exacerbates the dilemma of deciphering pain due to the nature of comparison on social media and the abundance of non-evidence based information, particularly for athletes who have poorer levels of digital health literacy.

Like Instagram and people influencing you and you know like I was changing exercises every single day trying to solve my pains ... the stress and the thought process. (A07)

I think people get really confused about the whole situation, they've read stuff, they've probably been to other practitioners before, they've gone around the mill so they can be a little bit of a challenge in terms of figuring out where they are from both a pain point of view, function point of view. (P03)

Despite the challenges, athletes valued the protective role pain plays and were intrigued to learn more both about, and from, their pain. Pain acted as a warning sign or indicator that athletes and physiotherapists used when deciding which pain and load management strategies to apply.

But for me, it's kind of a feedback mechanism for the injuries to kind of guide me on what I can and can't do. If the body signals to kind of back off on things and try to kind of use it as a guide or to teach you how far to push things with injuries and stuff. (A09)

## Theme 3. The Emotional Toll of Pain

Theme 3 includes two subthemes: 3.1—challenging emotions and 3.2—the impact of time on the emotional aspects of pain. A number of qualitative studies investigating experiences and perception of athletes with low back pain have identified how athletes experience negative emotions such as guilt, worry, fear, frustration and doubt.<sup>13 35 36</sup> This range of emotions is often linked with the uncertainty surrounding pain, the potential influence it can have on availability to participate in sport and the responsibility an athlete feels to self-manage their pain, leading to concealment, playing through pain and under-reporting episodes of pain. These challenges underscore the psychological toll of navigating pain. These emotions were also observed in *athlete pain* in this study and were related to an athlete's inability to participate and perform in their given sport and indeed daily life activities. These emotions tended to progress insidiously, with time highlighting and heightening the psychological aspects of pain.

### 3.1 Challenging emotions

Athletes reported that they often feel worried and anxious owing to the lack of certainty of the potential causes, consequences and outlook of pain, which physiotherapists concurred with. Pain persisting beyond expected timeframes encroached on everyday life and heightened concerns. Pain and feelings of doubt negatively impacted athletes' capacity to make sense of and manage their pain effectively. Fear, doubt and frustration were often synonymous with athletes' experiences of pain in this study and emotions have previously been found to impact an athlete's ability to maintain activity levels when injured.<sup>37</sup> Athletes in this study spoke about how they fear pain intensifying and are acutely aware of the impending impact it may pose on their ability to participate in sport. At times, the inertia accompanied by this cocktail of emotions left athletes feeling guilty for not being more proactive and blaming themselves for their situation.

The fear that it's going to get worse or feeling like it's going to stop me from playing. (A02)

Exactly they (athletes) are afraid it's going to get worse. (P04)

When you go through the pain for that long you want it to not be there you start to not trust your own perception. (A03)

But then I do kind of feel bad because if it's something that happened before, then I know I should have been doing my rehab so it's kind of my fault. (A01)

### 3.2 The impact of time on the emotional aspects of pain

The trial-and-error nature of pain assessment and management was often at odds with the protracted timelines athletes have to make decisions and be ready for their next competition, leading to frustration. Participants described how repeated pressurised decisions contribute to the cumulative emotional toll which negatively impacts an athlete's physical and mental well-being, reflecting previous research findings.<sup>30</sup> Athletes discussed the negative impact of pain on their ability to participate in their sport and how the psychological toll of not being able to train or compete impacted sleep, contributing to fatigue and further fuelling a negative pain and quality of life cycle.

Obviously when pain would reach a point that it takes you out of the field of play it can really affect you mentally and it's difficult to deal with and it can affect all walks of life just away from the sport. (A05)

Yes it was really frustrating because it was like a circle of not being able to sleep and that kind of causing disruption to feel just tired and generally fatigued throughout the day and then fairly anxious and depressed that you can't train. (A10)

You know the chronic stuff, especially when its more chronic the more cloudy that person becomes in terms of their own thoughts on it, what's sore,

what's not sore be it a persistent thing in their life. (P03)

## Theme 4. Coping, Community and Communication

Theme 4 includes three subthemes: 4.1—coping with pain, 4.2—influence of community and support networks and 4.3—communication, the broken key.

### 4.1 Coping with pain

Applying transferable skills acquired in their sports, athletes in this study discussed using a variety of coping strategies including managing their attention and maintaining their fitness with non pain-provoking cross-training modalities. When pain is associated with injury requiring time out from sport, or when pain management requires a period of rest, athletes shared how they can use the additional time to reflect and foster other interests and hobbies away from their sport which may help manage stress, an important aspect of pain management that has been discussed in previous research.<sup>6</sup> In this study, athletes acknowledged the often-unrelenting nature of the pursuit of excellence within sport and the opportunities afforded during a period of rest required to manage pain or injury.

Sometimes you just want to ignore pain and just get through it or whatever. (A05)

Just kind of did my own thing, kind of eased off worked around it because I do kind of a broad range of stuff like and almost always work around injuries. (A09)

You have other parts of your life that you can focus on like you're able to focus on different types of training and like for example I really enjoy gardening so like whenever I'm injured, I tend to go and garden more because well I can't train but also it's a really nice outlet for me to relieve some of that stress. (A08)

### 4.2 Influence of community and support networks

Understanding and managing pain can be a solitary pursuit; however, athletes in our study identified that they are part of a wider community. Prior research has found that relationships with friends, family, partners, teammates, colleagues, coaches and healthcare practitioners play a pivotal role in athletes understanding, managing and coping with pain.<sup>38–41</sup> Emotional support for athletes in this study came from personal relationships and teammates who were often the most appropriately positioned to offer context-specific empathy and advice. Conversely, athletes involved in individual sports were acutely aware of the void of comradery.

My current partner she was just like go back and get some sleep and take care of yourself for a few weeks. (A10)

The players we all live together they are the ones who would probably check in on you more in that aspect asking you from the perspective of how you are feeling about it. (A05)



I think it's better that if you're in a team sport, you could talk to some of your teammates like A02 could. Like it's sometimes hard on your own. (A01)

Athletes described how they spend a significant amount of time with coaches with relationships developing over years in many cases. The support an athlete feels from their coach and the trust and honesty encompassed within their relationship is inextricably linked to the athlete's attitude and response to pain.<sup>42</sup> Participants discussed how some coaches tend to ignore pain, focusing on return to play, while others respond to pain acknowledging the impact it has on the athlete and the strategies needed to best manage it. Physiotherapists acknowledged the integral role coaching staff play in managing athlete pain, investing time in explaining the complexities behind return-to-play timelines and the variable nature of pain that is unique to each athlete.

The coaches very rarely ever asked about how are you getting on, how are you dealing with it, it was always just when are you back. So, they don't tend to look at you as much as a person and ask you about how you are getting on with it and how are you feeling about it. (A05)

Because in different scenarios management play a huge role in it like is there somebody that is going to look and say you know, we'll sit you out this game or you don't have to train Wednesday but you're still playing Saturday or trying to get a balance. (A07)

I find I spend a lot of time actually educating managers on injuries and the likely timeframes and how that might change depending on how they're doing. (P02)

#### 4.3 Communication—the broken key

Central to successful and supportive relationships is effective communication regarding the experience of pain. Previous research has highlighted how the quality of communication between members of the athlete's support team is linked with availability to train and compete as well as risk of injury.<sup>39</sup> A concept mapping study of a group of 33 athletes, coaches and clinicians identified coach–clinician relationships and interdisciplinary team communication as key factors associated with recovery for athletes experiencing low back pain.<sup>41</sup> Additionally, a set of 11 guiding principles has been provided for sports rehabilitations clinicians outlining how we can all contribute towards improved communication.<sup>40</sup> These include actively listening to and empathising with the athlete, respecting and exploring an athlete's beliefs around pain and injury, being transparent specific and concrete in communication to all members of the team and working in a cooperative and collaborative manner. Physiotherapists and athletes in this study spoke about how they work together and with other members of the interdisciplinary team at various stages throughout the pain journey. Adequately reporting and describing pain to clinicians was often challenging for athletes owing to

the time constraints of clinical and sports-based assessments.

Because I, actually, before I go into a physio, I do write down what I'm going to say, because more often than not I'd leave forgetting to mention things and you're like, oh god, well it's gone now and I'm never going to say anything. (A11)

Athletes and physiotherapists discussed how physicians often sit at the top of the decision-making tree when it comes to managing athlete pain medically. As a result, some athletes find the decisive nature of these clinical decision-making interactions refreshing, providing clarity. In stark contrast, athletes can also find interactions with physicians limiting and reductionist, with physiotherapists also echoing this frustration.

Whenever I feel pain, I go to the Doctor and they confirm what my pain was and I'm reassured that what I felt was real and then I follow the rehab protocol. (A08)

That's very hard yes this pain like that thing in my foot I'm like I've had this years how do you get a sports doc to see that beyond just the MRI and what it shows you? (A08)

With the doctor instead of constantly saying to everyone we'll just MRI your back maybe they start to get a bit better too at knowing who they should be referring for medical imaging because we're picking up the bloody pieces after it. (P02)

Athletes shared how in sport, the pressure to perform and rapidly return to play, a deep sense of responsibility to teammates and playing through pain culture can be at odds with the time and space needed to effectively communicate the pain experience within their support network. Physiotherapists also noted the effect the team dynamic of sport has on an athlete negotiating their pain.

The team environment and how competitive it was at the time, you couldn't really say to the management unless it got to a point where like there's fairly you know something sinister or something. (A07)

There is a little bit of a sense of community, teammates and stuff that's going on as well where 'who am I letting down?' so you know. (P03)

When communication and the ensuing support are hampered, athletes found that their resources for coping are reduced and the likelihood of seeking medical and surgical interventions can increase. Conversely, when communication is effective, collaborative decision-making can occur with comprehensive pain management plans being devised. This was often accompanied by a more positive outlook with athletes reporting feelings of acceptance and empowerment as key markers of moving forward and coping with pain. Similarly, physiotherapists acknowledged the importance of cumulative short-term goals for athletes to focus on as a strategy to address the complexity of coping with and working through pain.

They discussed how the process is dynamic, requiring the physiotherapist to be in tune with the changing nature of an athlete's pain experience.

Until you kind of accept it and then you sort of say to yourself okay right, what's my path to recovery? I think you're at nothing with most injuries to be honest like you have to have that level of acceptance. (A09)

Like okay what do you want to do here to make or to help you reach your goal and look it has to be a fluid and agile situation as well when to pull, when to push, what things that work and what things are not working. (P03)

Athletes resourcefully employ a range of strategies to improve their understanding and manage their pain. An athlete's personal, sporting and medical community forms an ecosystem which offers additional strategies beyond those available on an individual level. Accessing these strategies often hinges on effective communication between the athlete and their support network.<sup>38 39 41</sup>

### Clinical & research implications

Sports-related pain is a complex experience unique to each athlete that requires interpretation and can be challenging to understand, cope with and manage. All members of the wider athlete support network (including coaching, sports science and sports medicine staff) must appreciate the significant impact of pain on (1) performance within sport, (2) daily life outside sport, (3) the athlete's identity and (4) coping strategies athletes use to manage their pain. Open and clear communication with athletes can help them to recognise the difference between 'normal' pain that is part of the process in sport, and pain that may be associated with injury and require further attention. Considering their current pain episode in the context of previous pain experiences and contextual factors such as stress, negative emotions and pressure to perform can help athletes identify steps they can take to manage their pain more effectively. Clear, plain and easy to understand language should always be used when it comes to discussing pain. With the permission of the

**Table 2** Summary of themes and practical implications

Theme	Summary	Practical implications for clinicians and support staff
Athlete Pain Lens	This theme explores pain through the eyes of an athlete. Pain is part of being an athlete and can shape their identity. The impact of pain on sport and daily life are central to the athlete pain experience. Sports-related pain requires planning and action.	It is important to appreciate the experience of pain in a sports context. We should communicate openly with athletes and discuss the influence of pain on; (1) performance within sport, (2) daily life outside sport, (3) the athlete's identity and (4) coping strategies.
Exploring and Navigating Pain	This theme shares the athlete's challenging journey of exploring and understanding pain. It explores the various aspects that influence pain perception and experience, and how athletes interpret their pain and choose what to do about it.	Pain is complex and often difficult to understand. We can help athletes understand pain by encouraging them to explore the context of their current pain experience and reflect on previous pain episodes. Helping athletes to understand what pain is normal and part of the process and what pain requires further attention is key.
The Emotional Toll of Pain	This theme explores the emotional aspects of pain. The challenging and negative emotions of the pain experience and how pain duration/chronicity may heighten or highlight these emotions are explored.	We must be aware of the affective/psychological aspects of the pain experience. It is important to discuss and validate this experience with athletes. Discuss feelings and emotions and explain their influence on pain perception and explore potential management strategies.
Coping, Community and Communication	This theme encompasses athletes communicating with others about pain including; coaches, teammates and medical professionals. Effective communication can help create a community around the athlete which can enhance coping strategies. Clear communication may hold the 'key' to effective decision-making.	We need to ensure we use clear, plain language when discussing pain with athletes and the wider team. With the athlete's permission, we must ensure all members of the athlete's team receives the same message. Setting collaborative goals and making decisions as a team helps to address the complexity of pain.

athlete, clinicians should strive to collaborate with all members of the athlete's support team to set goals and make decisions which will ultimately lead to improved outcomes for athletes in relation to their experience of pain both within and outside of sport. There is scope for future work to explore the sports-related pain assessment experiences and priorities of both athletes and physiotherapists to improve assessment and indeed treatment and management selection. For a summary of the themes presented and a description of the practical implications for clinicians and support staff of each theme, see [table 2](#).

### Limitations

While efforts were made to collect experiences from a diverse range of athletes and physiotherapists and variety was achieved in sport, competition level and practice setting, the experiences gathered from these focus groups may not apply to all athlete pain settings. Notably, participants were all recruited from Ireland and while some of the female athletes also had a physiotherapy background, no female sports physiotherapists were available to participate. The female sports physiotherapist perspective which may include female physiotherapist participants and also a female member of the research team asking the interview questions was not present in this study. Additionally, all participants were of white Irish ethnicity and so caution should be taken when interpreting these results. Although we set ground rules emphasising the importance of the athlete voice, it is a possibility that some athletes may not have felt completely comfortable disclosing prior experiences of pain in the presence of physiotherapists. Participants who took part in the study (both physiotherapists and athletes) likely did so out of an interest in the experience of pain and openness to learn and discuss their pain experiences. Therefore, this research may not represent athletes and clinicians who ascribe to the more traditional biomedical model of injury and pain.

### CONCLUSION

This paper presents four key themes (Athlete Pain Lens; Exploring and Navigating Pain; The Emotional Toll and Coping, Community and Communication). These themes highlight how pain is intertwined in the lives of athletes. Pain shapes athlete's identities and influences their actions on a daily basis. Experiences of the emotional and psychological aspects of pain have been shared, an aspect which has traditionally been undervalued and must be prioritised in order to optimise performance and preserve the health and well-being of athletes. The various factors influencing pain perception and decision-making have been presented including understanding the difference between pain that is part of the process and pain which requires further action. Clear and comprehensive communication between athletes and all members of the support staff and wider community has been presented as a tool to empower athletes and help them understand the complexity of pain, enhance

coping strategies and ultimately lead to more effective pain management, decision-making and improved performance.

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**Acknowledgements** A huge thank you to Alison Keogh and Aisling Lacey for their consultation and expertise in qualitative research methods in sport and exercise.

**Contributors** CP conceived the original idea. CP, BC, BF and TW developed the original idea. CP completed data collection. BC and GvO assisted with data collection. CP completed data analysis assisted by CBW. CP completed analysis which was reviewed by CBW, GvO and BC before being updated. CP composed the initial manuscript draft. CBW, GvO, TW and BF provided comments on and contributed towards the writing and editing of the final draft. CP is the guarantor for this work.

**Funding** This work was supported by funding from Science Foundation Ireland under the grant for the Insight SFI Research Centre for Data Analytics (SFI/12/RC/2289\_P2). Funders had no role in the data collection, analysis or interpretation and will have no role in approving the final manuscript.

**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were involved in the design, or conduct, or reporting or dissemination plans of this research. Refer to the Methods section for further details.

**Patient consent for publication** Not applicable.

**Ethics approval** This study involves human participants. Ethical guidelines were followed as per the Declaration of Helsinki, and permission was granted for this study by the University College Dublin Human Research Ethics Committee (LS-22-40-Purcell-Caulfield). Participants gave informed consent to participate in the study before taking part.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** Data are available in a public, open access repository. All data produced (copy of transcripts from all five focus groups) are available online at: [10.17632/t47tw94mzd.1](https://data.mendeley.com/datasets/t47tw94mzd/2) <https://data.mendeley.com/datasets/t47tw94mzd/2>.<sup>43</sup>

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