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Published online: 28 May 2025.

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Elite swimmers' and coaches' understanding and psychological experience of taper: A multi-phase qualitative investigation

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ABSTRACT

Taper is an important component of race preparation in swimming but often misunderstood by athletes and coaches. Thus, through a multi-phase qualitative investigation, we aimed to examine swimmers' and coaches' understanding and psychological experience (i.e., thoughts, feelings, and behaviors) associated with taper. An interpretive descriptive methodology was used in both phases, with data collected via semi-structured interviews and analyzed in line with interpretive description recommendations. Findings from Phase 1 and 2 suggested swimmers and coaches understood taper as an idiosyncratic, multidimensional, and unpredictable training phase, and their thoughts, feelings, and behaviors centered around ensuring taper had positive psychological and performance related effects. Findings from both phases were also examined to identify similarities in key psychological features associated with taper. This revealed the psychology of taper is complex, imperfect, and multilevel in nature. Overall, our research provides the first detailed insight into the psychology of taper in elite athletes and highlights the need for further research and applied considerations in this area.

Lay Summary: We explored the psychology of pre-competition taper, revealing insights beyond conventional understanding. We demonstrated taper is a nuanced process, inducing both positive and negative psychological states. Crucially, its effectiveness hinges on interactions among athletes, coaches, peers, and the training environment. This groundbreaking research advances our comprehension of a pivotal phase for elite and international athletes.

IMPLICATIONS FOR PRACTICE

- Consideration of all organizational levels (athletes, coaches, management) is crucial for effective psychological support during taper.
- Education on taper should address its perceived fallibility to allow coaches and athletes to foster realistic expectations.
- Building strong coach-athlete relationships through effective communication strategies, is vital during taper for successful collaboration between athlete and coach.

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- Confidence emerges as a key psychological variable during taper suggesting strategies that enhance it can create a confidence-boosting taper environment.

Training in elite sport is characterized by progressive training loads aimed at challenging sport-specific physiological and psychological systems (e.g., VO2 max, confidence) resulting in fatigue (Seiler, 2010). This is most often followed by periods of recovery that facilitate adaption (Robineau et al., 2016) and maximize the chances for athletes to exceed their previous performance potential (Skorski et al., 2019). While the simplest recovery strategy is training cessation, this quickly leads to detraining (loss of training adaptations underpinning performance) and is impractical for athletes preparing for competition (Zheng et al., 2022). Consequently, training load must be reduced to facilitate recovery, while simultaneously maintaining training adaptations. To achieve this, many athletes undergo a training *taper* prior to competition.

Taper refers to a progressive reduction in training load prior to competition, which aims to reduce physiological and psychological fatigue and enhance athletic performance (Mujika & Padilla, 2003). Performance enhancing effects of taper can range from 0 to 6%, with most athletes experiencing a 2 to 3% increase in performance (Murach & Bagley, 2015). In elite competitions these increases can be the difference between first and last position. Therefore, the way taper is implemented and experienced is critical for athletic success. However, our own anecdotal experiences (e.g., practicing performance psychologists) and grey literature indicate that athletes experience *taper crazies* (i.e., self-doubt; Fisher, 2021) and *taper blues* (i.e., feelings of lethargy; Overcoming the Taper Blues, 2011) during taper. Given the potential for negative emotional reactions during taper, understanding the overall psychological experience and key psychological demands (e.g., performance anxiety) is critical so coaches' and athletes' needs are supported and performance optimized.

In a recent scoping review, Stone et al. (2023) found taper is a training period characterized by positive psychological changes (e.g., improvements in mood, reductions in subjective fatigue), and influenced by contextual (e.g., importance of the competition) and individual differences (e.g., gender, trait anxiety). For example, while total mood disturbance was generally found to improve during taper, tension (a mood factor) could remain elevated (possibly reflecting performance anxiety). Overall, the review concluded that taper was paradoxically both a unique stressor and a psychological preparation tool for some athletes and coaches.

Within the same review (Stone et al., 2023), it was also identified that while researchers have offered insight into the psychology of taper, the literature has three substantial limitations. First, while the quantitative emphasis of existing research has allowed for trends to be identified, this reductionistic approach ignores the context of taper and athletes' and coaches' subjective experience. Indeed, how athletes and coaches perceive, understand, and experience taper is largely unknown, yet could be instrumental in taper success. Second, researchers have tended to use athlete samples competing at national level or below, where performance standards and expectations are lower. Consequently, little is known about the psychology of taper when employed by elite athletes or coaches, making it difficult to advise practitioners working at this level. Third, although taper has been studied for 30 years, few psychological constructs have been examined directly. Rather, they are usually measured to supplement physiologically focused research and to answer relatively simple questions (e.g., pre vs post taper changes in

mood). This has resulted in a superficial understanding of what psychological factors are important during taper.

Given the significant impact of taper on performance, understanding the most pertinent psychological factors during this training phase is important to maximize any performance benefits. For example, the influence of key pre-competitive psychological factors, such as anxiety and confidence during taper are unknown. This represents a significant gap in knowledge given their empirically confirmed relationship with athletic performance (Lochbaum et al., 2022). Overall, the current reductionistic understanding of the psychology of taper, with limited samples of taper-invested stakeholders, make supporting athletes during taper difficult. Exploratory research that considers the subjective experience of elite athletes and coaches during taper will allow a more holistic awareness of the psychology of taper (Stone et al., 2023).

A useful place to start when considering the subjective experience of taper in athletes and coaches is their understanding of the process. Within cognitive science, understanding has been defined as the acquisition, organization, and use of knowledge toward a goal for a specific purpose (Hough & Gluck, 2019). Understanding is therefore an idiosyncratic *process* which varies across individuals due to the extent of their knowledge and their ability to organize and implement it in given contexts (Blaha et al., 2022). Indeed, evidence and theory suggest an individual understanding of a phenomena is key for informing decision making, critical thinking, problem solving, and overall task performance (Langley et al., 2009). Athletes and coaches understanding of taper (i.e., their ability to organize and apply knowledge regarding taper to successfully prepare for competition) will therefore be important in determining their subjective experience of the phenomena. For example, athletes and coaches who have a poor understanding of taper (i.e., lack knowledge or are unable to effectively organize and apply it in context) may perceive taper as a stressor and therefore experience maladaptive thoughts, feelings, and behaviors. Conversely, athletes and coaches who understand taper may perceive it a challenge, and therefore experience adaptive thoughts, feelings and emotions (Meijen et al., 2020). Exploring coaches and swimmers understanding of taper is therefore a key first step in developing knowledge in how taper is experienced.

While understanding provides foundational awareness of how athletes and coaches organize and implement their knowledge of taper, it does not give detailed information about their specific experience. To address this, their thoughts, feelings, and behaviors should be explored. Grounded in the cognitive model (Beck, 2016), how an individual appraises a given situation (i.e., their cognitions) determines their subsequent emotions and behaviors. These fundamental psychological principles are well applied in sport psychology, underpinning theories of motivation, confidence, and anxiety (Bandura, 1997; Lazarus & Folkman, 1987; Ryan & Deci, 2020). Applied to the current study, if an athlete appraises their training performance during taper to be poor, they may experience anxiety and withdraw from interacting with peers or their coaches. Similarly, if a coach appraises taper as going well (e.g., athletes are recovering and performing effectively), they may experience happiness and engage in positive coach-athlete behaviors (e.g., joking). Consequently, identifying salient thoughts, feelings, and behaviors associated with taper provides a detailed awareness of athletes and coaches' psychological experience regarding tapering.

Overall, exploring understanding and thoughts, feelings, and behaviors simultaneously provides a rich and interconnected awareness of athletes' and coaches' psychological

experience of tapering. Athletes and coaches understanding of taper will influence their overall perception and expectations regarding taper, which in turn will provide the basis for their specific thoughts, feelings, and behaviors. Examining these constructs in tandem therefore allows for greater synthesis of information, consequently providing a more complete awareness of the psychology of taper. Such research will provide a stronger contribution to knowledge as well as allowing for the development of more detailed practical recommendations and future research directions. Thus, Phase 1 of the current study aimed to examine swimmers' and coaches' understanding, perceptions, and expectations of taper as a training phase. This phase was guided by the following research questions: What do swimmers and coaches think the purpose of taper is? How do swimmers and coaches think taper works? What impact do swimmers and coaches expect taper has? Following this, Phase 2 aimed to identify swimmers' and coaches' psychological experiences of taper. This phase was guided by the following research questions: What are swimmers' and coaches' thoughts, feelings, and behaviors related to taper? How do thoughts, feelings, and behaviors interact throughout the taper phase? What are the catalysts for the development of specific thoughts, feelings, and behaviors throughout the taper phase?

Method

Researcher positionality

This investigation was prompted by issues reported within a high-performance sports organization, where athletes and coaches experienced mental challenges during tapering, adversely affecting performance at major competitions. Members of the research team were already providing psychological support within the organization and identified tapering as a negative experience. The study, conducted in collaboration with the sport (swimming), aimed to develop best practices for supporting athletes and coaches. Our method, grounded in applied psychology tradition, was shaped by this context. We employed our disciplinary expertise to collect, analyze, interpret, and report findings relevant to applied practice. The lead author, embedded within the organization for the study's duration, had no prior experience with the organization or high-performance swimming. The research team comprised four practicing sport psychologists who also conducted research at UK institutions, two practicing sport psychologists/scientists at performance sport institutions, and the lead author, a sport psychology researcher at a UK institution. Collectively, the team possessed extensive applied and academic experience in high-performance sports contexts.

Methodology and philosophical approach

The study was conducted using an Interpretive Description (ID; Thorne, 2016) methodology. ID is an eclectic methodology allowing authors to utilize various components from different methodologies to develop an explanatory interpretive analysis of phenomena within applied settings. Although typically described as a methodology, ID is better thought of as an "organising logic" (Thorne, 2016, p. 39) in which applied qualitative researchers commit to developing contextually sensitive and practically useful

results. We chose ID to address limitations with the current literature base (e.g., lack of depth, breadth, and contextual awareness) and to develop practically beneficial findings for coaches and sport psychologists supporting athletes during taper. Thorne (2016) encourages researchers to own their philosophical underpinnings when conducting ID. Consequently, in this study we approached the process from the perspective of ontological relativism and epistemological social constructionism, as this was most effective for achieving our aims and aligned with our personal opinions that the outcome would be subjective, contextually bound, and the result of interactions between the researcher and the data.

Participants

Intensity sampling (Patton, 2014) was used to identify participants. To ensure experiential knowledge of taper, participants were eligible if they had: (a) undergone or implemented a taper; (b) been involved in swimming or coaching for a minimum of five years; and (c) trained or coached in an elite or high-performance swimming context. All participants were sampled from the same high performance sport organization.

Phase 1

Twelve swimmers and eight coaches participated: Six female swimmers (M age $= 22.83$, $SD = 3.54$; M years swimming $= 15.67$, $SD = 2.24$), four male swimmers (M age $= 23.50$, $SD = 3.00$; M years swimming $= 16.25$, $SD = 3.50$), and eight male swim coaches (M age $= 42.25$, $SD = 15.83$; M years coaching $= 25.13$, $SD = 14.01$). Three swimmers had competed at Olympic Games, five at Commonwealth Games, and two at national level. Six coaches had coached swimmers who competed at an Olympic and/or Paralympic Games, and two had coached swimmers to national level. Swimmers were classified as competitive elite ($M = 5.71$, $SD = 1.36$) in accordance with the elite classification formulated by Swann et al. (2015).

Phase 2

Nine swimmers and six coaches participated: Five female swimmers (M age $= 22.40$, $SD = 3.78$; M years swimming $= 15.40$, $SD = 1.71$), four male swimmers (M age $= 24.00$, $SD = 2.58$; M years swimming $= 15.75$, $SD = 3.86$), and six male coaches (M age $= 44.33$, $SD = 13.65$; M years coaching $= 39.50$, $SD = 7.78$). All participants who took part in Phase 2 also took part in Phase 1. Two swimmers had competed at an Olympic Games, five at a Commonwealth Games, and one at national level. Five coaches had coached swimmers to an Olympic or Paralympic level, while the remaining coach had coached swimmers to a national level.

Procedure

Following Institutional Ethics Board approval, participants who met the inclusion criteria were identified through discussions with the Performance Director of the collaborating national swimming organization. Potential participants were then contacted by the

lead researcher who provided them with a participant information sheet and consent form, which all participants subsequently completed. Interviews were then arranged for Phase 1. Following completion of Phase 1 data collection and analysis, the original participants were requested to complete a second interview for Phase 2, with 15 of the original 18 agreeing.

Data collection

Semi-structured interviews were conducted by the lead author for both phases. For phase one, previous knowledge on taper was used to develop interview questions focused on the aims of taper, taper strategies, effects of taper, and what taper meant to participants. An example question was, "From your perspective, what do you think the aim of taper is?". For Phase 2, we utilized a cognitive-behavioral approach focused on thoughts, feelings, and behaviors (Beck, 2016). An example question for athletes from the interview guide was, "What are your main thoughts when you're tapering?," while for coaches it was "What are your main thoughts during taper?." For both phases, interview guides were scrutinized by the research team and piloted on a national coach and swimmer prior to the main data collection phase. Following reflections on the pilots, further questions and non-directional probes (e.g., "what would an example of that be?") were added to elicit more information (guides available on request).

All interviews were conducted in line with responsive interviewing recommendations (Rubin & Rubin, 2012). At the start of the interview participants were asked non-research-related questions (e.g., sporting background, sporting accomplishments) to allow them to become comfortable with the questioning format. Questions from the interview guide followed, with participants guiding conversations as they desired. Most interviews were conducted face-to-face, but some were conducted online via Microsoft Teams due to logistical constraints. In line with recent recommendations, participants were recruited and data collected until we felt there was sufficient richness and complexity present in relation to the research question (i.e., principles of *information power* used to determine qualitative research sample size), as well as pragmatic reasons (i.e., access to eligible participants) and time constraints (Braun & Clarke, 2021). Phase 1 interviews ranged in duration from 38 to 97 minutes ($M = 64.09$, $SD = 16.45$), with Phase 2 interviews ranging from 38 to 83 minutes ($M = 61.58$, $SD = 13.22$).

Data analysis

Data were analyzed following Thorne's (2016) guidelines for ID. Data analysis within ID can draw from different methodological traditions and is focused on sharing practically beneficial insight. In line with ID recommendations, the aim of our data analysis was to create a conceptual description (Thorne, 2016) that facilitated sport psychologists' and other relevant practitioners' understanding of the psychology of taper. To achieve this, we analyzed data using the following steps: (a) transcription; (b) coding; (c) synthesizing; and (d) theorizing. While these steps are presented linearly, data analysis was a dynamic and iterative process, particularly during the latter stages. Consequently, our higher order themes (i.e., developed via synthesizing and theorizing) are interpretive in nature, while codes are descriptive. Both swimmer and coach data were analyzed together. Collective

analysis was conducted to provide more holistic insight into the psychology of taper, allowing for the identification of similarities and convergence in perceptions.

Interviews were transcribed verbatim and read to allow for data familiarization. Transcripts were then independently coded for research-related meaningful ideas (i.e., content relevant to the research questions) through both deductive and inductive methods (cf. Thorne, 2016). Following coding, comparative analysis was used to compare codes to each other and ensure distinctiveness and relevance to the research question (Thorne, 2016). Where appropriate, codes were removed, conceptually expanded, reduced, or combined with other codes. The lead author returned to their reflective log throughout the coding process, adding new ideas and challenging old ones with additional reflections or questions. Once completed, the lead author began synthesizing codes from all transcripts (athletes and coaches) concurrently to construct sub-themes, subsequently grouped into higher order themes. This process involved identifying patterns in the data and sorting these using conceptual labels. Like initial coding, the lead author sorted through the conceptual labels, continually examining the codes that composed them and comparing the labels to one another to ensure distinctiveness. Following this, the research team theorized as to the relationship between the conceptual labels. This process was facilitated using data networks, in which links were drawn between potential relationships (a data analysis aid in ID; Thorne, 2016). Using this, more interpretive conceptual labels were developed to account for and explain relationships between the data.

Methodological rigor

We enhanced methodological rigor across both research phases in accordance with ID recommendations. Specifically, we considered epistemological integrity, representative creditability, interpretive authority, moral defensibility, and disciplinary relevance (Thorne, 2026). Consistent with epistemological integrity our data collection and analysis methods were in-line with our research questions and aims of understanding participant's subjective experiences of taper. To address representative credibility, we purposefully sampled participants who had rich experiential knowledge of taper. Similarly, we recognized truth claims developed from this research are interpretive in nature and have presented them as such. To ensure interpretive authority we utilized critical friends to scrutinize interpretations, thus, helping ensure they were rigorous. Finally, moral defensibility was achieved through the applied nature of the research (i.e., collaboration with industry) and the motivation to develop insights useful to enhance taper practice. Our research has disciplinary relevance as it addresses a gap in knowledge regarding athletes and coaches understanding and psychological experience of taper and could have impact across the international swimming community.

Phase 1: Results

Three higher order themes were identified relating to participants' understanding of taper: (a) the idiosyncratic nature of taper; (b) the ideal performance state; and (c) the unpredictability of taper. A hierarchical representation of these themes can be found in Figure 1. Higher order themes represent swimmers' and coaches' understanding of

taper, however, some sub-themes are more related to coaches or swimmers (this is articulated within the text).

The idiosyncratic nature of taper

The taper process was understood as idiosyncratic, with the integration of these unique aspects deemed crucial for its successful implementation. Two sub-themes emerged: (a) experiential taper strategy; and (b) swimmer individual differences.

Experiential taper strategy

Coaches understanding of taper was grounded in their successful and unsuccessful experiences of implementing and manging it Three experiential processes underpinned coaches' taper strategy. First, coaches identified types of taper that worked with certain swimmers in certain scenarios. For instance, "There's general principles to follow [regarding tapering] but there's a little bit of trial and error for what works with one person, and even when you find that out, that doesn't necessarily stay the same for that
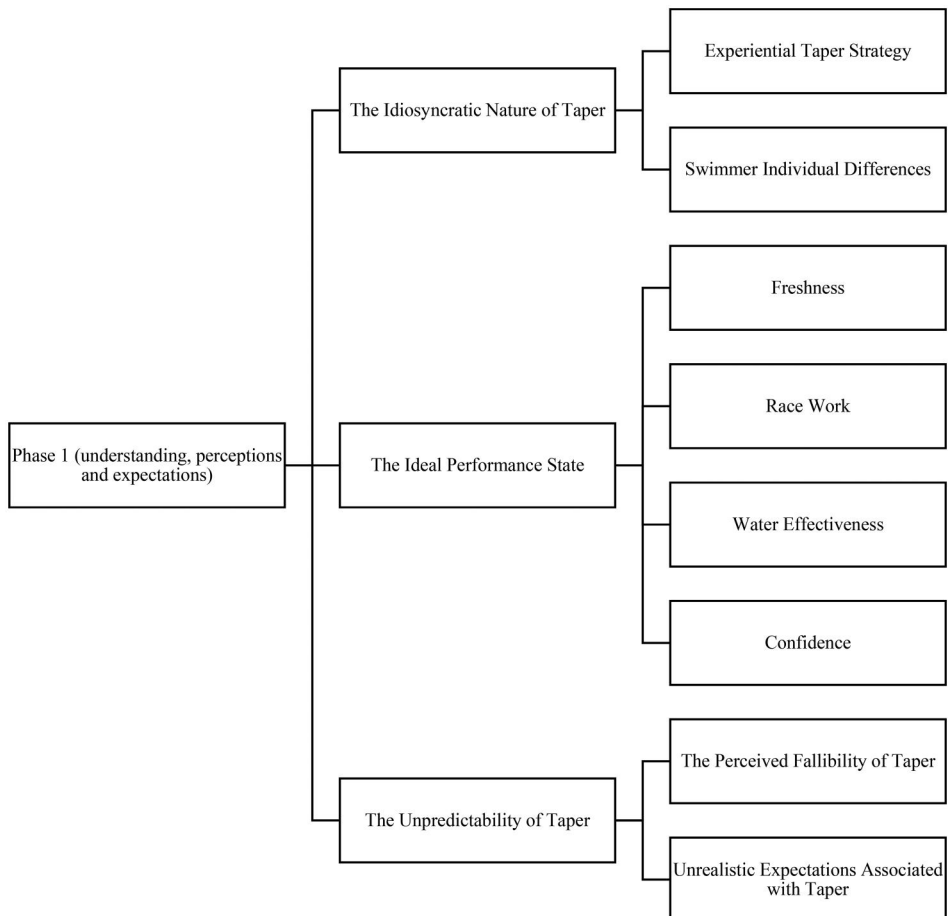
Figure 1. Hierarchical representation of the higher order themes and sub-themes across Phase 1.

person" (Coach 8). Second, coaches incorporated successful taper strategies from other coaches into their tapers. This approach was described as "Safety in numbers, if you like" (Coach 7). Third, coaches experimented with taper designs at less important competitions. For example, " … he'll [swimmer] want similar [taper], but I'm thinking, 'do we try and do something else this year' because it's not that important that he swims that quick at [competition]" (Coach 2).

Swimmer individual differences

Individual differences were understood to interact with taper to determine its structure. Physiological factors were perceived to be influential, including anthropomorphic makeup, age, and sex. Swimmers who had more muscle mass, were older, and males were perceived to need longer tapers or tapers with larger reductions in training volume. This was because participants thought these individuals recovered more slowly compared to others, "Now there's always been a theory, I think, that the more heavily muscled you are the longer it will take for that muscle to recover" (Coach 6).

Long-distance swimmers were perceived to require shorter tapers, or ones with smaller reductions in volume, compared to sprinters. This was to encourage the maintenance of aerobic fitness (i.e., avoid detraining). Comparatively, sprinters were perceived to need less aerobic fitness and, as Swimmer 2 explained, coaches were more comfortable giving them larger training load reductions or longer duration tapers:

> But say now a 50-meter freestyler, I'd say they need more rest … I don't know what makes me think this, but I feel as if they need to build their muscles back up a bit more, because sprinters generally have bigger muscles than distance [swimmers].

Injury and illness were also thought to influence taper. For instance, if a swimmer experienced an injury or illness affecting the amount of training completed, then a shorter taper was needed. For example, "Other individual needs like … if they've had an injury through the season, will have an impact on the nature and type of taper we adopt" (Coach 1).

The ideal performance state

Swimmers and coaches understood taper as a multidimensional tool to achieve an optimal performance state, frequently referencing the physiological, technical, proprioceptive, and psychological components of taper:

> The ideal performance state is so they are able to stand on the blocks and swim the best they've ever swum and that is … rest, recovery, re-fuel. It might be stroke mechanics, it might be anxiety … just getting them in a really positive head space and a really positive physical space. (Coach 3)

The optimal performance state consisted of four performance components being maximized: (a) freshness; (b) race work; (c) water effectiveness; and (d) confidence.

Freshness

This theme referred to a reduction in perceived physiological fatigue and sensations of muscle soreness and an increase in perceived energy. For instance, "I think it's

[perceived physiological changes] both fatigue leaving the body [laughter], but also having that energy coming back as well. I guess there's a bit of both, really" (Swimmer 10). Coaches were conscious of factors outside of swimming that influenced swimmers' freshness, such as traveling to training or exams, and adjusted taper to meet these demands:

> Yeah, you might have a swimmer that has, let's say, a full-time job and they're trying to do early morning training, swim at 6am in the morning, trying to train in the evening. They're obviously going to be very tired … so obviously if you drop the morning training, they've got an extra sleep in they're not using as much energy, so they're going to get better value for a freshen up (Coach 4).

Race work

This referred to mastering technical and competition skills during taper. For instance, during taper swimmers simulated the call room procedure and performed "stand-up swims" (wearing their competition swimsuits), allowing them to test themselves and practice key performance skills:

> … maybe a week or so before racing, actual racing, you'll do a simulation. So, you get in [into training venue], we do a proper race warm up like you would do in a competition. You get tested, you suit up, give it a few minutes, sit down … like you're actually in the call room, so give 10–15 minutes where you sit down and do nothing. And then you go through the process that you do just before the race. (Swimmer 3)

Alongside standup swims and call room simulations, swimmers mastered technical skills, such as dives, turns, and their race plan, during taper. Swimmers and coaches called this "fine-tuning". Fine-tuning referred to the refinement of existing skills and technical components of the swim performance. These skills were perceived to be easier to focus on and master during taper because of reduced fatigue. For example, "… you concentrate on the skills a lot [during taper] … making sure that every part of my stroke feels good, the catch of the water feels good, so I can maximise my distance through the water" (Swimmer 6).

Water effectiveness

This referred to the enhanced proprioceptive effects (swimmers called this "feel") taper elicited in swimmers. Before taper, swimmers described themselves as feeling "heavy", or the water feeling like "treacle". Comparatively, after taper, swimmers felt "… lighter, higher in the water, and more fluid when swimming." Taper also made swimming feel easier and more efficient, termed "easy speed." For example, Swimmer 1 stated "It [taper] makes me feel … good in the water. So, in effect, I'm having to put less effort into each stroke, so it's [stroke] more efficient."

Confidence

A key psychological purpose associated with taper was its ability to enhance confidence. For example, Swimmer 2 highlighted:

> I was going into the competition and I'd had the best taper ever. I was so ready to go, and my first race was a [event] and I'd done so well, I'd a 2 second PB and … I mean I felt as

if I were [sic] flying into it and that was because I'd thought to myself "the taper has gone really well."

Swimmers reported gaining confidence from two sources. First, they compared their performance during their current taper to previous experiences, "I'm gonna compare it [to past tapers] aren't I? No matter what I do I'm gonna compare my taper to what I felt like at [competition], and my challenge is not to [laughs]" (Swimmer 3). Second, swimmers expected taper to make them swim faster, therefore increasing their confidence, "I just think that when you're on it [taper] you should feel better and faster through the water and just feel better" (Swimmer 7). Comparatively, when swimmers did not taper, they felt less mentally prepared and found it difficult to perform optimally. For example:

I guess you just get it in your head, "oh I'm tapered so I'm going to swim fast", whereas if you're unrested, you feel like you're in hard training, so you're going to be racing tired. So, it's going to be harder to race fast times. (Swimmer 9)

The unpredictability of taper

Taper was understood by swimmers and coaches as unpredictable (i.e., its outcome was unpredictable) and difficult to control (i.e., there were unknown variables or variables that could not be influenced). For instance, "So, obviously at the start it's [general mood] nice, you're ready for taper, you're ready to ease off, and then it's like a spider web in how it can go" (Swimmer 4). To combat this unpredictability coaches reported using their understanding of swimmers:

You kind of know how they [swimmer] work, you kind of know what pushes their buttons, what calms them down, what frustrates them, how they like to work leading into competition, what makes them really fresh and happy when you make certain decisions … and also they understand how you work as a coach. (Coach 5)

The unpredictable nature of taper was underpinned by two sub-themes: (a) the perceived fallibility of taper; and (b) unrealistic expectations associated with taper.

The perceived fallibility of taper

Taper was perceived as an imperfect training process that, for a variety of reasons, was difficult to optimally implement. For instance, participants thought the science behind taper (i.e., how and why it worked) was lacking and that there were issues with its definition, "I think it's very true [that there is variation in strategies among coaches] because it's [taper] not a hugely scientific thing as well, there's lots of different things that you can involve, and there's lots of different definitions of what taper is and when it starts" (Coach 3). Alongside this, participants indicated that they thought taper research had stagnated, "From a scientific background no, no I wouldn't say it [their understanding of taper] has [changed] I don't think I've received any new valid or exciting research on how to taper athletes. I don't think it's been out there" (Coach 7).

Coaches and swimmers believed the mechanisms underpinning taper were unclear, leading to confusion over how it worked. Specifically, while participants understood taper as a method to increase performance, some thought there was no scientific

consensus as to the best way of achieving this, "I think we're very unclear as to the reasons why it [taper] achieves it [increases performance] … we're still guessing at what is the correct taper" (Coach 6). Finally, coaches and swimmers thought there were methodological and strategic issues associated with taper. Specifically, swimmers thought coaches sometimes guessed at the development, individualization, and implementation of taper. For instance, Swimmer eight reported, "Everything's [sic] a guessing game. Like guessed [sic] ten days to two weeks to one week, three weeks, there isn't, 'oh let's do nine-and-a-half-day taper because that's what you need'. It's just a guess; the coaches are guessing."

Unrealistic expectations associated with taper

Some coaches thought swimmers had unrealistic expectations of taper, viewing it as a "magic wand" that instantaneously improved performance. Comparatively, other coaches, and some swimmers, noted there was no "magic" associated with taper, and changes were gradual and the result of reduced fatigue, "Taper's a weird one, you always think that you're going to just feel great as soon as taper starts but that's definitely not the case, it's like always so gradual" (Swimmer 5). Unrealistic expectations associated with taper had further implications. For instance, some participants thought performance could decrease during taper (particularly at the start). This decrease, accompanied by the unrealistic expectations associated with taper, led to some swimmers being critical of themselves, and negatively impacting their psychological state. Indeed, taper was described as a "bit of a rollercoaster" (Swimmer 1) when exploring the emotions and performance experienced during taper.

Phase 1: Discussion

In Phase 1, we aimed to examine swimmers' and coaches' understanding of taper. Results suggest swimmers and coaches understood taper as an idiosyncratic, multidimensional, and unpredictable training phase. Coaches reported developing taper strategies based on experience, through shared practice, and in response to swimmer individual differences. Participants suggested taper had a multifaceted purpose, leading to enhanced freshness, race work, "feel", and confidence. Optimization of these factors led to the ideal performance state; a swimmer ready to perform effectively in competition. However, taper was also perceived to be unpredictable and associated with unrealistic expectations.

Our findings regarding how coaches develop taper strategies support existing research. Specifically, Ritchie et al. (2018) found Olympic and Paralympic coaches developed taper strategies via their experiences and through interactions with other coaches and athletes. Overall, previous research and our results suggest coaches do not use research findings to inform their taper strategies, instead relying on their experiences of previously successful tapers implemented by themselves and their peers. This indicates coaches do engage in a restricted process of reflective practice prior to taper to inform their decision making (Neil et al., 2013). However, the focus on "what worked last time" suggests the current value of this reflection might be limited. In addition, without reference to knowledge resources (e.g., research) there are real concerns how effectively this

reflective practice alone increases their capacity for decision making during taper itself. There is therefore a strong case for developing systems to increase evidence-based practice alongside this experiential approach.

Participants also highlighted individual swimmer factors as influencing the development of taper strategies. Researchers suggest taper should be individualized to optimally impact performance (Mujika, 2009). Supporting this, through mathematical modeling, researchers have identified considerable individual variability in athletes' response to taper, indicating individual differences are important determinants of optimal taper duration and training volume reduction (Thomas & Busso, 2005). However, to date, little empirical research has determined what individual differences are key during taper. Indeed, only recently has event type been identified as a factor coaches consider when developing taper strategies (Ritchie et al., 2018). Consequently, our findings support the idea taper should be individualized and expand on this by detailing factors (e.g., sport type, anthropomorphic makeup) considered important by coaches and athletes. These factors require further examination to determine their importance.

Our findings concerning the perceived outcome of taper also support previous research, while offering novel insights. Researchers have demonstrated taper has many physiological benefits for athletes that reduce fatigue and increase recovery (Mujika, 2009). Additionally, confidence has been identified as an important outcome of effective tapering (Ritchie et al., 2018). Consequently, coach-swimmer perceptions of taper having physical and psychological benefits is consistent with previous research. The current study is, however, the first to suggest swimmers and coaches understand taper to have technical and proprioceptive benefits for swimmers, indicating potential wider benefits beyond that reported in existing literature.

Taper was understood as unpredictable, fallible, and involving unrealistic expectations. Researchers have noted coaches and athletes report uncertainty regarding how to optimally implement taper and fear a detraining effect due to reduced training load (Mujika & Padilla, 2003). However, until now these suggestions have not been empirically supported. Findings from the current study highlight the misalignment between scientific and practical understanding, suggesting research examining taper lacks the complexity and nuance required to transition usefully into practice.

Overall, the findings from Phase 1 provided detailed information regarding how swimmers and coaches understand taper. However, while this provides a conceptual foundation regarding the psychology of taper, it does not provide detailed insight into athletes and coaches psychological experience. Indeed, findings from Phase 1 allude to important psychological factors, such as confidence, being experienced during taper. Consequently, Phase 2 was conducted to build upon these findings and explore, in depth, athletes and coaches thoughts, feelings, and behaviors associated with taper.

Phase 2: Results

Three themes were constructed from the interview data: (a) ensuring psychological preparation; (b) enhancing the effects of taper; and (c) planning and delivering taper optimally. A hierarchical representation of these themes can be found in Figure 2. Within these themes are subthemes describing swimmers' and coaches' experiences,

respectively. Swimmers' and coaches' responses/experiences were used to create independent sub-themes as their thoughts, feelings, and behaviors were distinct, but motivated by similar overarching factors.

Ensuring psychological preparation

A substantial part of coaches' and swimmers' thoughts, feelings, and behaviors focussed on ensuring taper was a period of effective psychological preparation (i.e., swimmers feeling psychologically ready to compete at their best). One of the main motives was that a poor psychological state was thought to undermine the effectiveness of taper and eventual competition performance. As Coach 3 explained, "Are they [swimmer] ready to go because tapers worked great, everything's worked great up to it, but do they feel that they're ready? That's the key objective. If they feel that they're ready, then they'll swim good." This theme was underpinned by two sub-themes: (a) developing and sustaining confidence; and (b) encouraging and protecting swimmers. The sub-themes represent participating swimmers' and coaches' respective attempts to ensure positive psychological preparation.

Developing and sustaining confidence

Developing and sustaining confidence throughout taper was reported as key for swimmers to ensure they felt psychologically prepared for competition. Confidence was developed and maintained via a three-part process of appraising sources of confidence,
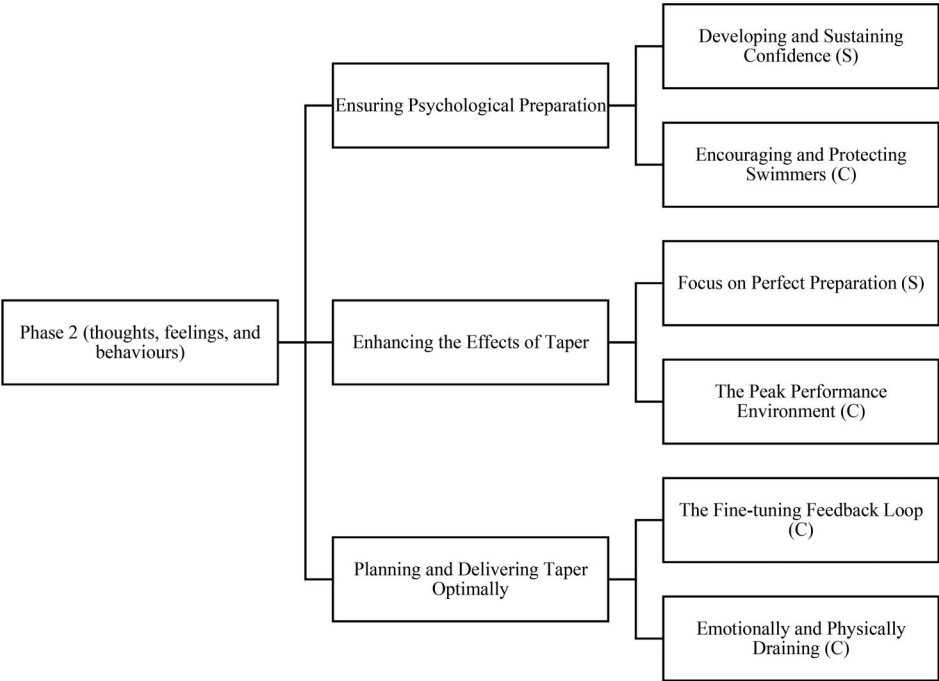

Figure 2. Hierarchical representation of the higher order themes and sub-themes across Phase 2. S and C in parenthesis represent swimmer and coach focused sub-themes, respectively.

experiencing cognitive and emotional changes, and psychological coping. Swimmers initially developed confidence by appraising four sources of information. First, swimmers reflected on the quality and quantity of training completed prior to taper, "So have I missed any training? … What sets I've done? … Just analyzing everything you do, probably in a bid to like to find some good facts that, I don't know, prove that I'm going to swim well" (Swimmer 8). The second and third sources of confidence were "feel" in the water and performance during race pace sets or "standup swims", respectively. Both were deemed important as swimmers perceived them as indicators of competition performance potential. Swimmer two detailed, "You just feel really good in the water, I can feel the water nicely, like everything is sort of effortless… when I get that feeling it just feels good, so you feel really good about yourself." Finally, swimmers gained confidence when they compared their taper strategy and performance during taper to other swimmers. Specifically, if swimmers thought their taper was like other swimmers who were performing well, this was an indicator they were preparing correctly:

> Before these trials we had the [competition]. I wasn't in them but [swimmer] in my squad was in them and she swam fantastic and I knew she had done exactly the same training as I had done. So, when I saw her swim well, I was like, 'Right. This is it. I'm going to do well as well'. (Swimmer 4)

Appraisals of the sources of confidence during taper led to psychological changes (to thoughts, emotions, and behaviors) in swimmers. Positive appraisals of the sources of confidence motivated swimmers to train and compete. Swimmer seven explained, "You're just kind of like pumped up and just got that feeling that you just want to get in, you just want to race." Comparatively, negative appraisals of the sources of confidence made swimmers overthink their performance capabilities, catastrophise over their preparation, and question their training, "You let all the thoughts in your head build up [following negative appraisals] like, 'what if I don't swim well' or 'what if it's all going wrong'" (Swimmer 6). Negative appraisals of confidence also made swimmers angry or annoyed, consequently making them more argumentative with their coach and/or family. Swimmer 4 acknowledged, "It's short answers, and just quite quiet in the house … if they [parents] say anything out of the way, I have to retaliate to them, and really quick, as well." Other swimmers reported a lack of motivation to train or compete, becoming withdrawn, and not communicating effectively, "I know what it feels like not to feel good during taper … I was not excited to race, I didn't want to race, I didn't want to do anything, I just didn't want to swim" (Swimmer 2).

Swimmers used cognitive and behavioral coping strategies to manage their psychological state and attempt to maintain their confidence during taper. Cognitive strategies challenged or helped accommodate unhelpful thoughts and feelings. For instance, some swimmers accepted and normalized their thoughts and feelings regarding their taper, "I know it'll come [their performance] on the morning of my race, so at the end of the day if it doesn't then that's the position I'm in, that's what I've got to deal with, that's how I've got to race" (Swimmer 3). Another strategy was rationalization and reframing, whereby swimmers would try to reduce the importance of their taper:

> You might feel like crap and rubbish now, before taper, but you may feel like, 'Oh, no, I'm not ready to do this competition' but you've still got 4 or 5 weeks left before you're going to be ready. It's a matter of having faith in what you do. (Swimmer 9)

Behavioral coping strategies involved swimmers performing an action to manage their thoughts and emotions regarding taper. One strategy was preparation and planning, which helped remove uncertainty associated with taper. For example:

> I also like to have a sit down with [coach] and just go through the plan for taper, just so I have a full understanding of what is expected of me … just so I think I'm confident in what I know is going to happen. (Swimmer 5)

A final behavioral strategy swimmers used was venting. Some swimmers reported venting to their parents about taper concerns and used this cathartically for negative thoughts and feelings. Swimmer five explained:

> My mum will sort of say, 'do you need to have a chat?' If it's just a rant about how tired I am and things like that, I think for me if there is a stress factor there it is just sitting down and talking it through and making sure I'm not over thinking it [taper].

Encouraging and protecting swimmers

To ensure swimmers were psychologically prepared during taper, coaches reported encouraging and protecting their swimmers' positive psychological state. Coaches achieved this in various ways, including the provision of positive feedback regarding technique or performance during taper. Coach two stated, "Communication, talking them up all the time. So, its [encouragement] continual reinforcement … if things have gone well through the cycle, reinforce that, keep bringing it up, especially if you see the athlete starting to have a bit of doubt." Coaches also reported tailoring their behavior during taper. Specifically, some coaches took a prescriptive approach with certain swimmers (i.e., telling them what to do), while being more relaxed with others (i.e., allowing them more autonomy). Tailored approaches allowed coaches to feel they were satisfying swimmers' needs:

> Like I say, you're leaving no stone unturned so you're just trying to look at every little thing. How can I get that extra little bit of belief from that athlete? For some athletes that might be going for a cup of coffee, for other athletes it might be putting figures in front of them and giving them it in black and white. (Coach 1)

Alongside these strategies, coaches highlighted how they also attempted to control their own behaviors to protect swimmers' psychological preparation. For example, "So as a coach I was very, very aware of my own image and what I was presenting to swimmers during that last ten days" (Coach 4). Coaches indicated doing this because they thought swimmers used coach behaviors to gauge whether they were preparing effectively. Coach 3 explained, "I think you change, they feel it and if it's not a good feeling then they start picking up on signals and then they start questioning things."

Finally, coaches helped swimmers cope with the psychological demands they faced during taper. Indeed, many coaches noted they managed the thoughts and emotions of swimmers during taper more than any other training period due to the perceived importance of being psychologically ready:

> It's [managing taper] just about dealing with all the emotion. We ask them, during this period, to internalise how they feel, what to look like. Every question is, 'How do you feel?' I think you [coach] either choose to let your athletes do that and be in tune with their feelings or you choose to ignore that completely and you just tell them, 'You're looking

great, push on with it'. I go the opposite way; I want them to be honest with me in terms of emotional feedback. But then you must do something about it. You can't get 'I feel rubbish' and go 'Okay, fine' and walk off, you must do something. (Coach 1)

Enhancing the effects of taper

Swimmers and coaches aimed to enhance taper's positive effects on recovery and performance. Swimmers adjusted their behavior during taper, while coaches created a performance environment conducive to psychological well-being. This theme consists of two sub-themes: (a) focus on perfect preparation and (b) the peak performance environment, representing their respective efforts to optimize taper outcomes.

Focus on perfect preparation

To enhance the effects of taper, swimmers focused on preparing perfectly. For instance, swimmers reported becoming more conscious of their performance behaviors (i.e., foam rolling, stretching, eating correctly) and the impact they had on their recovery. This increased some swimmers' motivation to engage in behaviors they thought would enhance recovery:

> You make sure your technique is good, you make sure you are eating right, you make sure you going to bed sooner because the important times are coming. If you are midseason, you can have a McDonalds can't you? But [during taper] you start behaving like a proper athlete. (Swimmer 1)

Swimmers suggested that they also behaved more conservatively during taper due to concerns that excessive external activities may interrupt recovery. Thus, swimmers reported reducing (or stopping) any non-swimming related activities during taper. As Swimmer two stated, "I am more wary of not exerting too much, so I wouldn't go like for a long walk or a long bike ride."

The peak performance environment

Coaches tried to create a peak performance environment that enhanced the psychological and performance effects of taper. This was characterized by calmness, having the correct attentional focus, and positivity. Coaches indicated that they wanted taper to be calm and reduce the pressure swimmers experienced because of their upcoming competition, "It's [managing taper] kind of just keeping the programme feeling as calm and as normal as possible, so I don't want them [swimmers] to feel like there's a big build up too soon" (Coach 3). To achieve this, some coaches suggested that they became more relaxed and jovial during taper by interacting with swimmers more, joking with them, and trying to distract them from negative thoughts or emotions:

> I like to be jovial, I like to be light-hearted, I like to take as much pressure off the athlete as is physically possible. I want them to feel comfortable and therefore my behaviours are associated around making them feel comfortable. (Coach 6)

Coaches also wanted swimmers to maintain the correct attentional focus during taper. This was considered important because coaches thought some swimmers' training approach became lax during taper. Coach three explained:

> I think it's quite important that the psychological process … they [swimmers] don't lose concentration, ensuring that they've still got to get a job done in the pool, in the sense there's still some work to be done, there's still elements to be worked on and focussed and to not try and get them to over think about what's coming up.

Finally, positivity during taper was considered important in ensuring swimmers' well-being and optimistic performance expectations. For instance, "Just keep them [swimmers] positive, you know? Keep building those athletes up" (Coach 2).

Planning and delivering taper optimally

During taper, some of the main thoughts, feelings, and behaviors coaches experienced related to ensuring taper was planned and delivered as effectively as possible, so that performance was maximized. This was achieved via continual analysis of swimmers throughout taper. Planning and delivering taper optimally was underpinned by two sub-themes: (a) the fine-tuning feedback loop; and (b) emotionally and physically draining.

The fine-tuning feedback loop

Coaches reported planning and delivering taper optimally via the fine-tuning feedback loop. "Fine-tuning" was a term used by participating swimmers and coaches to describe the process of refining parts of the swim performance during taper (see Phase 1). The process of fine-tuning consisted of subjectively monitoring and evaluating swimmers' progress throughout taper and then amending training to optimize their performance capabilities. Coaches reported subjectively monitoring and evaluating perceived fatigue, pace during key sets, technique, and psychological state of swimmers, "Easy speed, in less strokes. So, I would be looking at their efficiency … So that's what I would be looking for in the water. Out of the water, I'd be looking at their confidence and their belief" (Coach 5). Following monitoring and evaluation, coaches adjusted taper to suit the training needs of the swimmer, ensuring training was fine-tuned and taper was delivered optimally:

> If they [swimmers] say 'yes something's not right, can we have a chat?' … 'my stroke is just feeling rubbish.' 'Right, do you want to do, some technical work?' 'Yes, okay.' And you go back into almost quite a defined instructional way of delivering. (Coach 6)

When amending taper, coaches thought they had to be adaptable to cope with unforeseen situations. Specifically, coaches were conscious of factors such as injury and illness, which can affect how taper is implemented:

> You have to accept that you're going to have to be flexible because things will happen that change what you've possibly got down on paper. So, have you got that mindset that's going to allow you to adapt, evolve, manipulate, whatever it needs to be, depending on what's actually stood in front of you? (Coach 2)

Emotionally and physically draining

Coaches reported feeling emotionally and physically drained at the end of taper and competition phase due to practical and contextual factors. Practically, coaches were analyzing and amending taper on an individual basis, requiring high levels of

concentration. Coach three explained, "I think it's making those important decisions and that sometimes can be quite emotionally draining because it's [taper] almost non-stop thinking." Coaches also helped swimmers manage their thoughts and feelings during taper, while hiding their own to maintain swimmers' confidence. Coach 1 highlighted, "I just find it, getting kids to offload all their emotion on you and just trying to deal with all that and process all that and deal with that, that's why I find it tougher than normal."

Contextually, coaches reported feeling pressure to get taper right as they cared for their swimmers' careers and wanted them to succeed. Coach 3 acknowledged:

> I think it's [taper] also a pressure for coaches because it could be qualifying for … like we're talking about an athlete's life here, and it could be that they don't perform well, that funding or certain elements may get cut. So, you do feel a bit of pressure.

Equally, coaches experienced their own performance pressure, particularly around the implications (e.g., missing Olympic selection) of swimmers performing poorly at key meets. Supporting this, Swimmer 1 said, "I think taper would be a lot more stressful for coaches because they have got to get right."

Phase 2: Discussion

The aim of Phase 2 was to identify swimmers' and coaches' thoughts, feelings, and behaviors associated with taper. Results suggested participants' psychological experience centered on ensuring the effectiveness and success of taper. Specifically, swimmers reported developing and maintaining confidence via an appraisal and coping process and adopting perfectionistic tendencies. Complimenting this, coaches reported using positive feedback, regulating their behaviors, helping swimmers to cope, creating an optimal performance environment, and fine-tuning training during taper.

The development and maintenance of confidence through the taper period by swimmers in the current study extends previous research. Specifically, while Ritchie et al. (2018) reported that Olympic and Paralympic coaches perceived confidence as a key psychological variable during taper. Our findings confirm the importance of athlete confidence during taper, as well as detailing specific sources of confidence, consequences of confidence appraisals, and attempts by swimmers to regulate their confidence. Together, these findings suggest athlete confidence underpins swimmers' psychological experience of taper and is likely a critical variable during this period.

Our findings suggest athletes adopt perfectionistic behaviors during taper. This has not previously been identified and is a novel contribution to the literature. Stoeber (2011) highlighted the distinction between *perfectionist strivings* (mostly process-focused) and *perfectionistic concerns* (mostly ego-focused). Perfectionism during taper appeared to be due to swimmers adopting a "leave no stone unturned" mentality before competition and, therefore, potentially reflects a more adaptive perfectionist striving tendency. Further research is required to explore the potential adaptive and maladaptive effects of perfectionistic behaviors during taper.

Researchers have previously reported how Olympic and Paralympic coaches implement positive feedback during taper to enhance athletes' confidence, were mindful of their own behaviors during taper, and adapted taper based on evaluations of athletes'

progress (e.g., Ritchie et al., 2018). While our findings support such contentions, we also identified novel coach behaviors including *helping swimmers to cope* and *creating an optimal performance environment*. The former indicates coaches engage in interpersonal emotion regulation with the intention of optimizing goal attainment and performance (Niven, 2016). The latter suggests coaches strive to create a different training climate during taper compared to normal training.

Researchers examining social psychological climates in sport have done so predominantly from a motivational (Ames, 1992) and caring (Newton et al., 2007) perspective. However, neither of these perspectives account for the findings of the current study. For instance, motivational climates capture the system of evaluation (e.g., effort vs outcome), interaction between groups, and sources of authority (Ames, 1992), while caring climates refer to the extent to which individuals feel cared for and connected to others around them (Newton et al., 2007). In our study, the psychological climate created by coaches was characterized by calmness, positivity, and focus. These findings echo other authors' suggestions that social psychological climate is multidimensional (e.g., Stark & Newton, 2014). However, further theoretical and empirical research is required to confirm this. Overall, coaches' ability to manage taper *ad hoc*, communicate effectively, optimally self-present, regulate their athletes' emotions, and create an optimal training environment are key behaviors underpinning coaches' psychological experience of taper.

General discussion

The aim of this multiphase study was to develop a holistic awareness of the psychology of taper in athletes and coaches. In Phase 1, we examined swimmers' and coaches' understanding of taper and in Phase 2 we identified salient thoughts, feelings, and behaviors associated with taper. Findings suggest participants understood taper as an idiosyncratic, multidimensional, and unpredictable training phase while their specific subjective experience centered on making sure taper was a period of positive psychological preparation, enhancing its effects, and ensuring it was planned and delivered effectively.

Findings across the two phases suggest the psychology of taper is more conceptually and experientially complex than previously considered. For example, taper has been defined as a period of progressively reduced training aiming to reduce fatigue and enhance performance (Mujika & Padilla, 2003). However, participants in this study understood taper as multidimensional, having physiological, psychological, technical, and proprioceptive effects. Similarly, most psychological research to date has examined a limited amount of psychological variables, often from a training monitoring perspective (Stone et al., 2023). In contrast, our findings suggest the psychology of taper is idiosyncratic, and underpinned by dynamic thoughts, feelings, and behaviors that are influenced by athletes' or coaches' transaction with specific contexts and social interactions (Baldock et al., 2020). For example, in Phase 2, swimmers detailed how they developed and maintained their confidence via appraisals (both self and other orientated), emotional reactions, coping responses, and coach involvement (e.g., coach feedback). Overall, our findings suggest existing literature provides a limited conceptual and

experiential understanding of the psychology of taper, and that in practice it is more complicated.

Another key finding across both phases was the imperfect nature of the taper experience. In Phase 1, taper was understood as unpredictable and in Phase 2 swimmers and coaches reported symptoms of negative psychological states, such as anxiety and burnout (coaches). This contrasts with previous literature that suggests taper is generally a period of positivity (e.g., improved mood; Stone et al., 2023), instead indicating taper can go wrong. Transactional stress theory (Lazarus & Folkman, 1987) highlights event uncertainty and predictability as two of the eight properties of situations appraised as stressful. Furthermore, Anderson et al. (2019) suggest that our mental simulation of uncertain future events, and our tendency to model negative outcomes, often results in negative affect. However, research has also shown that historical experiences of stressful events can allow more seasoned athletes to appraise this negative affect as facilitative (Neil et al., 2011), suggesting that athletes who have tapered before might be better equipped to deal with the uncertainty of this period.

Across both phases, a central feature during taper was the interactions between coaches and athletes. For example, in Phase 1 coaches understood swimmer individual differences as critical when developing taper strategies, and in Phase 2, coaches' thoughts, feelings, and behaviors were consistently focussed on optimizing their swimmers' chances of success by managing their coaching behavior and through creating positive and supportive environments. Social support like this has consistently been identified as a resource for coping with perceived threat, both in sport (Brown et al., 2018) and wider social contexts (Gillman et al., 2023). From a psychological perspective these findings suggest effective tapering is contingent on a coach's ability to understand the needs of their swimmers and offer high quality individualized support. Concurrently, swimmers who are aware of their psychophysiological state (e.g., recovery) during taper and can communicate this clearly, are likely get the most from taper. In short, our findings suggests social support, underpinned by high quality coach-athlete relationships (Jowett et al., 2023) and communication (Davis et al., 2019) are key to both effective coping and optimal preparation during taper.

The psychology of taper is multifaceted and influenced by the individual, their environment, and the wider cultural context. For instance, swimmers' psychological states focused on maintaining and developing confidence throughout taper, which was facilitated by coach behaviors in their immediate sporting environment. These processes occur within the wider social (e.g., family) and cultural context of taper (e.g., to prepare athletes to perform at their best). Coaches' psychological experience can also be understood with a multilevel lens. Coaches experienced symptoms of burnout, likely provoked by the intensity of planning and managing an unpredictable taper for multiple swimmers leading into a major competitive event (i.e., environmental demands).

Applied implications

To ensure competitive benefits of taper are realized and to protect athletes and coaches from negative psychological states, sub-optimal decision-making, and burnout, it is important to ensure this unique training phase is optimally administered. To begin, it is

essential that all levels of an organization (i.e., athletes, coaches, management) have an effective understanding of taper. With assistance from sport psychologists, evidence informed education should be provided about taper detailing what it is, how it works, expected outcomes, and addressing the perception it is fallible (which it is). Drawing from the current study and existing literature (e.g., Stone et al., 2023), the sport psychologist should provide specific insight around the psychological impact of taper and how best this can be managed. Such educational work could take place via workshops, CPD meetings, or via organizational/sport psychologist directed learning. This will allow for a realistic understanding of taper and highlight what athletes and coaches should expect to happen and how they might deal with this, in turn bridging the knowledge to action gap.

As part of the educational approach above, facilitating coaches to move beyond simplistic experiential taper planning, as seen in study one, is of vital importance to ensure evidence-based practice. The Professional Judgment and Decision Making (PJDM) model (Collins & Collins, 2013), offers a valuable tool for coaches planning taper strategies, by providing a structured and adaptive framework for planning and decision-making. Using the PJDM framework would allow coaches to analyze individual swimmer responses to training reductions, assess performance metrics such as swim speed and fatigue levels, and adjust plans based on, accepted theory, research evidence, athletic data and their own experience. The model's dual-process approach encourages analytical decision-making (e.g., evidence from literature) with intuitive judgment (e.g., recognizing subtle signs of overtraining or readiness). Additionally, PJDM supports nested planning, enabling coaches to align short-term taper adjustments with medium- and long-term performance goals. This approach would help ensure taper strategies are evidence-based and tailored to the unique physiological and psychological needs of each swimmer.

Following the initial education process, other specific elements highlighted in this study can be addressed. Specifically, the collaborative nature of taper means that sport psychologists should help develop strong coach-athlete relationships via effective communication strategies. For example, strategies to strengthen closeness, commitment, and complementarity throughout taper (Jowett et al., 2023) may enhance the quality of communication during taper. One such method might include guided reflection sessions so that everyone understands the needs and desires of each other and demonstrates empathy and active listening (Jowett & Carpenter, 2015). Practically, this can be achieved by open communication of plans, goals, and expectations prior to taper starting, as well as reflecting on the successes and challenges post-competition. Alongside this, coaches and athletes could collaboratively work together to plan sessions and conduct structured feedback meetings to discuss progress and concerns during taper. Both coach and athlete should commit to communicate messages in an honest, direct, and constructive way to minimize misinterpretation (Yukelson, 1997). From a well-being perspective, these actions to improve coach athlete relationships have also been shown to improve coach and athlete well-being (McKay et al., 2021).

Confidence was also a specific psychological variable highlighted across both phases, suggesting it is important during taper. Sport psychologists should be aware of the importance of confidence during taper and implement strategies to protect and enhance it (Lochbaum et al., 2023). For example, swimmers and coaches should be encouraged

to engage in critical reflection on positive taper experiences to make sense of what worked for them and how, together, they achieved those outcomes. Doing so is likely to improve the way an athlete and a coach might appraise future experiences of taper and thus make them more confident in their ability to adapt to the situation in a positive manner (Picknell et al., 2023).

Limitations and future research directions

The main limitation for the current study is that the participant sample was homogenous in terms of sport, age, competitive level, and geographical location. This sample was purposefully chosen to ensure participants had experiential knowledge of taper. Therefore, we cannot be certain whether a more heterogenous sample consisting of athletes and coaches from different sports, competitive levels, and geographical locations understand and experience taper in a similar way. That said, we feel it is likely those with contrasting demographic backgrounds who still compete and coach in sports that implement tapers will resonate with the findings and will be able to make use of the applied implications (i.e., naturalistic, generalizability and transferability; Smith, 2018).

Given the complexity of taper, multidisciplinary research is required which examines the interactions between psychological, physiological, and performance components of taper. Researchers might examine the interactional effects of anxiety or strain, physiological recovery indicators (e.g., neuromuscular performance, cortisol, lactate), and performance throughout taper. Additionally, researchers could explore relationships between psychological variables such as confidence and the coach-athlete relationship during taper. Finally, there are currently no psychological intervention studies that focus on the taper period (Stone et al., 2023). Future research could therefore examine the feasibility and impact of psychological interventions on taper related outcomes.

Disclosure statement

Funding

Data availability statement

Raw data were generated at University of South Wales, UK. Derived data supporting the findings of this study are available from the corresponding author [DS] on request.

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