Paper:
A Longitudinal Examination of Stressors, Appraisals, and Coping in Youth Swimming

Francesca P. I. Hayward¹*, Camilla J. Knight¹,²*, & Stephen D. Mellalieu³

¹Applied Sports, Technology, Exercise, and Medicine Research Centre, Swansea University

²Welsh Institute of Performance Science, Wales, UK

³Cardiff School of Sport, Cardiff Metropolitan University,

Date of Submission: 24th August 2016

Contact information:

Camilla Knight

Swansea University Bay Campus

Crymlyn Burrows,

Swansea

SA1 8EN

E-mail: c.j.knight@swansea.ac.uk

Phone: 01792606590

Author Note: * These authors made an equal contribution to the study
Abstract

Purpose: Involvement in sport has the potential to cause athletes, coaches, and parents to experience stress. However, the extent to which experiences of stress are shared within the athletic triad is unknown. The purpose of this study was to examine the individual and shared stress experiences among youth swimmers, their mothers, and coach within the context of training, tapering, and competition.

Design: Multi-case study design.

Method: Four female swimmers, their mother, and one coach completed daily diaries for six weeks and up to three semi-structured interviews. Data were analyzed through within- and cross-case thematic analysis.

Results: The study showed evidence of shared stress experiences between all three members of the athletic triad. Participants predominately encountered organizational stressors, which they appraised in relation to movements between squad, interpersonal relationships, and overall progress towards performance goals/outcomes. Numerous coping strategies were employed by participants, with varying degrees of effectiveness, such as seeking social support, distancing, and lift sharing. The coping strategies used by coaches, swimmers, and parents were often interrelated with participants frequently seeking emotional support from one another. The majority of stressors and appraisals cited by parents and swimmers were shared, with both heavily relying on social support to help each other cope with the stressors encountered.

Conclusion: Athletes, parents, and coaches have the capacity to influence one another’s stress experiences and as such their experiences should be considered simultaneously to maximize the impact of interventions.

Key Words: Youth Sport, Swimming, Athletic Triad, Stress, Case-study
Involvement in youth sport has been associated with a number of stressors among athlete, parent, and coach populations (Frey, 2007; Harwood & Knight, 2009a; Nicholls, Hemmings, & Clough, 2010). If individuals are unable to effectively cope with these stressors, it can result in negative outcomes both individually and in terms of the relationships that exist within the athlete triad (athletes, parents, and coaches; Fredricks & Eccles, 2004; Tamminen & Holt, 2010). Given such consequences, substantial attention has been given to examining stress experiences in sport (see Nicholls, 2016, for review).  

Contemporary approaches to understanding stress and coping experiences utilize a transactional approach (Lazarus & Folkman, 1984; Lazarus, 1999). Here stress is viewed as a process of an ongoing transaction between an individual and their environment, mediated by that person’s cognitive appraisal of the environmental demand or stressor they encounter. The term stressor is used to denote “environmental demands encountered by individuals” (Fletcher, Hanton, & Mellalieu et al., 2006, p. 329). Lazarus and Folkman postulated that strain arises from a perceived imbalance between environmental demands (stressors) and an individual’s coping resources.  

According to Lazarus (1999) there are two types of appraisals: primary and secondary. Primary appraisal is concerned with how an individual evaluates the personal significance of the situation in relation to his or her own beliefs, values, and goals. Secondary appraisal is an individual’s cognitive evaluative process that focuses on what can be done to manage the stressful situation and whether the individual feels they possess the ability to cope (Lazarus, 1999). Having appraised the demand, the extent to which individuals may experience strain is dependent upon their implementation of effective coping strategies (Lazarus, 1999). When a person appraises a given encounter they may employ specific coping strategies to deal with the

---

1A full synthesis of this literature is beyond the scope of this manuscript. Readers are referred to Crocker, Tamminen and Gaudreau (2015); Nicholls, Taylor, Carroll and Perry (2016) and Fletcher and Arnold (2016) for some of the latest reviews in the area.
demand or stressor encountered. The implementation of such coping strategies can vary in effectiveness (Nicholls, Holt, & Polman, 2005). Thus, to assess the stress process in sport awareness of stressors, appraisals, coping, and coping effectiveness is necessary.

In applying the transactional model within the sporting context, a plethora of research examining stressors and coping in athletes (often, but not exclusively, adult athletes), coaches, and increasingly parents has emerged (e.g., Frey, 2007; Hanton, Fletcher, & Coughlan, 2005; Harwood & Knight, 2009a; Mellalieu, Neil, Hanton, & Fletcher, 2009; Thelwell, Weston, Greenlees, & Hutchings, 2008). Some research has focused on examining changes in stressors and coping over very short time periods, for example during a single competition (Gadreau, Blondin, & Lapierre 2002), while other research has been prospective and longitudinal in nature (Levy, Nicholls, Marchant, & Polman, 2009; Nicholls, Levy, Grice, & Polman, 2009; Nicholls, Jones, Polman, & Borkoles, 2009; Thelwell et al., 2008). In line with the transactional model the key findings in the literature suggest that stressors fluctuate over time and differ depending upon whether demands are encountered in training or competition.

Linked to this, there is substantial evidence that athletes and coaches experience stressors from competitive, organizational and personal sources (Thelwell et al., 2008; Woodman & Hardy, 2001) and for parents, competitive, organizational, and developmental sources (Harwood & Knight, 2009a, 2009b).

With regards to coping strategies, research indicates that coping is dynamic in nature and athletes employ multiple coping strategies to manage a single stressor at any given time point (Nicholls & Polman, 2007; Nicholls, Levy, et al., 2009; Tamminen & Holt, 2010a).

Athletes appear to utilize problem-focused coping strategies when stressors are perceived as controllable, whereas stressors with low levels of perceived control are associated with emotion-focused strategies (Nicholls & Polman, 2007). Moreover, it appears that athletes employ different coping strategies on training days compared to competition day and that
A variety of coping strategies, often simultaneously, to manage the demands encountered in the world-class sporting context. The coaches’ predominately used problem-focused strategies such as structuring and planning, and time management, as well as engaging in professional development opportunities. Burgess, Knight and Harwood (2016) meanwhile identified that reappraisal, problem-, and emotion-focused coping strategies were required for parents to manage the demands they encounter in youth sport.

Fewer studies have been conducted examining the specific appraisals reported, in comparison to that of stressors encountered or coping deployed (Nicholls, Perry, & Calmeiro, 2014). Those studies that have examined appraisals (e.g., Hanton, Wagstaff, & Fletcher, 2012; Nicholls et al., 2010; Tamminen & Holt, 2010a) have typically focused upon athletes. Findings have indicated that: contextual factors likely influence stressor appraisals (e.g., Tamminen & Holt, 2010b); appraisals are often in the form of harm or threat (Hanton et al., 2012); appraisals are dynamic and change over time (e.g., Nicholls et al., 2005; Tamminen & Holt, 2010a).

Given such findings, expanding our understanding of stressor appraisals across athletes, coaches, and parents is warranted in order to enhance the effectiveness of subsequent stress intervention programs delivered with these populations.

Despite the continued commitment to research in this area, there are numerous aspects that warrant further examination. Although there are some notable exceptions (e.g., Nicholls, Hemmings, & Clough, 2010; Tamminen & Holt, 2010a, 2012), research examining the overall stress process has generally focused upon adult rather than youth athletes. Given that children and adolescents often have more limited coping abilities than adults (Fletcher et al., 2006; Tamminen & Holt, 2012), and as such might be at greater risk of experiencing strain, ensuring
Further, although a large body of literature exists examining athletes’, coaches’, and increasingly parents’ experiences of stress in sport, these studies have generally considered individuals in isolation or dyads (see for e.g., Hanton et al., 2005; Harwood & Knight, 2009a; Olusoga, Butt, Maynard, & Hays, 2010) resulting in limited attention being given to how the stress experiences of individuals across the athletic triad are related (Burgess, Knight, & Mellalieu, 2016). This lack of research is surprising considering that parents, coaches, and athletes have a substantial capacity to influence one another’s behaviors and experiences (Dorsch, Smith, & McDonough, 2009; Tamminen & Holt, 2010b) and spend considerable time interacting during childhood and adolescence (Harwood & Knight, 2016).

Parents have been shown not only to be a source of strain for children (Reeves, Nicholls, & McKenna, 2009) but also influence children’s coping strategies (Lafferty & Dorrell, 2006; Tamminen & Holt, 2012). Indeed, given young athletes’ limited coping capabilities, they are typically reliant on social support from parents and coaches (Fletcher et al., 2006). Similarly, children can influence their parents’ behaviors through their responses and requirements (Dorsch et al., 2009), and their performances and behaviors during competitions themselves can be a source of stress for parents (Harwood & Knight, 2009a, 2009b). Parents and coaches also influence each other within youth sport contexts (Knight & Gould, 2016). For instance, it is not uncommon for coaches to frequently interact with parents, and, in turn, for parents to be a large source of strain for coaches (Knight & Harwood, 2009).

According to Knight and Harwood (2009), tennis coaches cited a variety of parental behaviors as stressors. The prominent stressors were categorized into stressors related directly to coach-parent contact and indirectly via parent-child interactions. Similarly, coach-parent interactions can cause parents strain (Harwood & Knight, 2009a, 2009b) and coaches have the potential to
Stress Experiences in Youth Sport

influence athletes’ stress experiences, both by acting as a stressor for athletes and by influencing their coping capacity (e.g., Nicolas, Gadreau, & Franche, 2011).

Taken together, the literature gives a clear indication that members of the athletic triad can all influence each other’s stress experiences. However, the exact ways in which one parties’ stressors, appraisals, or coping strategies are experienced by, and potentially influence the stress experience of others, is unknown. Given that parents and coaches both play a large role in the lives of adolescent athletes (Côté, 1999) there is a particular need to examine the complex interactions within the athletic triad during this time (Burgess et al., 2016). To this end, the purpose of this study was to explore the individual and shared stress experiences of adolescent swimmers, their parents, and their coach across three phases of swimming (training, tapering, and competition). The study sought to answer four key research questions: 1) What demands do youth swimmers, their parents, and their coach face during training, tapering, and competition, and how are these shared within the triad? 2) How do youth swimmers, parents, and coaches appraise these demands? 3) How do youth swimmers, parents, and coaches’ cope with these demands? And, 4) How effective are the coping strategies swimmers, parents, and coaches use?

Method

Methodological and philosophical underpinning

A case study methodology was adopted for this study. This approach was considered the most appropriate methodology because a case study allows for a holistic, in-depth exploration of events or experiences of individuals over time (Yin, 2003), which aligned with the longitudinal, idiographic aim of this study. The case study approach allows for interactions and causal links within and between cases to be examined (Yin, 2003). Thus, a case study methodology was deemed particularly pertinent because it enabled the stress process to be explored among individuals, as well as across cases or ‘triads’ (i.e., parents, athletes, and
participants within the complex human world, while recognizing that through our interactions with the participants we would be co-creating knowledge. As such, this project was founded in an interpretive paradigm, which influenced our data collection and analysis procedures, as well as the steps to enhance methodological rigor.

Participants

Four cases were selected for this study, which aligns with studies of a similar nature (e.g., Nicholls et al., 2009) and was deemed appropriate to gain a detailed understanding of the phenomena. Each case included one female swimmer, one mother, and one female coach. Only female swimmers were selected as limited research attention has been given to female populations (e.g., Tamminen & Holt, 2010a), despite evidence suggesting gender can influence athletes’ appraisals and coping strategy usage (cf. Ptacek, Smith, & Zanes, 1992), as well as perceptions of parental involvement (e.g., Knight, Berrow, & Harwood, in press). Mothers were selected because: 1) The mothers indicated that they took on the majority of roles and responsibilities with regards to their daughter’s swimming training and competition, and 2) Mothers are particularly influential in the sporting lives of their daughters.

The same coach was included in each of the cases. She had 19 years of experience coaching, working with swimmers ranging from regional to international standard. The swimmers were all 14-15 years old (M=14.2 years) and regularly engaged in national and/or international competition for approximately 5-6 years. Selection of participants was designed to align with the specializing stage of swimming, which is when adolescent athletes are highly involved in the sport and parents and coaches are both critical (Côté, 1999). The mean age of the mothers was 45.25 years (SD= 3.86 years) with between six and 13 years of experience of parenting children in swimming.
contacted coaches at local swimming clubs in the UK to enquire into the possibility of conducting research with the swimmers, coaches, and parents at the club. A meeting with the swimmers and parents was arranged via the coaches. At this meeting information sheets and informed consent and assent forms were distributed and anyone interested in participating was asked to contact the research team via email to arrange their involvement.

**Data collection.** The current study was longitudinal in nature, with data collection taking place over a 6-week period leading up to a major competition to provide an opportunity to examine the dynamic and temporal stress process (Nicholls et al., 2005). In line with previous longitudinal studies of stress, appraisals, and coping (e.g., Nicholls et al., 2005, 2006) data collection occurred through daily diaries and interviews. Daily diaries were selected because they are useful in capturing information as it occurred and reduces risk of participant forgetfulness (cf. Nicholls et al., 2005), while interviews were selected to provide opportunities to obtain in-depth, detailed information pertaining to participants’ experiences at different phases of the study (Smith & Sparkes, 2016). Three pilot interviews and a pilot of the diaries were conducted before the study commenced. Pilot work was completed to ensure the format of the diaries was comprehensible and interview questions were appropriate. Once informed consent and assent was obtained for all participants, data collection commenced via daily diary entries and individual semi-structured interviews.

**Daily diaries.** Based on previous studies using diaries (e.g., Nicholls et al., 2005, 2006), participants were given an information package containing diary sheets for a week, along with instructions, a completed diary example, and a definition of stress and coping. Participants were provided with a new pack at the start of every week for the 6-week duration of the study (See Appendix A). Participants were asked to complete the diaries on a daily basis as soon as
Semi-structured interviews. All participants completed three interviews (except one mother who only completed two interviews); one in the training phase, one in the tapering phase, and one in the competition phase. All interviews took place in a semi-private location at the participants’ swimming pool and were audio-recorded. The purpose of these interviews was to supplement the information obtained from diary entries and allow participants to explain their experiences in more detail. The interview guides were constructed based on previous studies in this area (e.g., Nicholls et al., 2009). On average the interviews lasted 56.50 min (SD=20.30 min) during the training phase, 31.32 min (SD=12.45 min) during tapering, and 25.03 min (SD=10.54 min) during the competition itself (see Appendix B).

Data analysis. An idiographic approach was used to examine each case (triad) before cross-case analysis was conducted. Interview data were transcribed verbatim and participants were allocated pseudonyms. The interview and diary data for each participant in each triad were analyzed using the qualitative data analysis procedures recommended by Miles and Huberman (1994). Data reduction took place through three stages of coding. Initially, descriptive codes were allocated to the data to identify the raw data themes. Next interpretive codes were generated which grouped descriptive codes into abstract concepts. Finally, pattern codes were identified which illustrated the relationships between the interpretive codes.

Once data reduction had occurred, case ordered data matrices were created to allow for a systematic review of the data within and between triads. The approach to case study analysis followed the procedures proposed by Yin (2003). A multiple case analysis was conducted by firstly providing a detailed description of each case (through the process of coding and reviewing the codes from each triad). Second, within case analysis of the separate components within the stress process was performed. This data was then grouped to form a chronological...
Methodological Rigor

In line with suggestions from Sparkes and Smith (2009), the evaluation of the methodological rigor of this study is proposed against the aims of a case study. Throughout this study, we were guided by Cresswell’s (2007) criteria for evaluating a good case study and a number of steps were taken to fulfill these. The research team spent considerable time selecting the cases and ensuring that appropriate individuals were participating in the study based on the research aims. Data collection occurred over an extended period of time, using multiple methods, to ensure a thorough understanding of the cases. Pilot interviews were also conducted prior to data collection, which allowed the lead researcher to check the coherency of the interview questions and ensure the questions would fully address the purpose of the study and provide a detailed understanding of the cases that are then explored in the results section. The depth of description and understanding of the cases was also facilitated by the same interviewer (lead researcher) conducting all interviews, ensuring consistency in the delivery of interview questions. The lead researcher conducting the research had previous competitive swimming experience, which helped in establishing rapport with study participants. Such rapport was important to increase the potential for participants to share information and provide open responses to the research questions.

Within and cross-case analysis were conducted by the lead researcher, but data was also subjected to a prolonged and rigorous peer review whereby the lead researcher engaged in extended discussions with a research colleague during the data analysis process. Through this process, the development of themes was facilitated and ensured that the experiences of all individuals were accounted for. Additionally, throughout this process the lead researcher maintained a reflexive journal in which she recalled not only her immediate responses to
was important because the lead researcher was also fully immersed in the swimming training and competition environment, which helped to boost contextual understanding of the participants’ experiences but also influenced her interpretations of the data.

Results

Within-case overview of stressors, appraisals, and coping strategies

The participants recounted numerous stressors, appraisals, and coping strategies throughout the training, tapering, and competition phases. An overview of the stressors, appraisals, and coping strategies are provided in Table 1. Tables 2, 3, and 4 respectively illustrate the shared stressors, appraisals, and coping strategies for each case across the three phases of training, tapering, and competition. Further explanations of these ideas are presented in the cross-case analysis of the stress experiences.

*****Table 1*****

Stressors. Participants recalled organizational, competitive, and personal stressors. The majority of stressors were related to organizational demands, particularly during training and tapering. During competition more competitive stressors were recalled but organizational stressors were still present. Overall, more stressors were recalled during training, with fewer stressors recalled during the competition phase.

Appraisals. Stressors were often appraised in relation to the potential consequences on swimmers’ performance, relationships and comparisons to other swimmers, and potential negative reactions of others. Appraisals were more varied during training and tapering phases than during the competition phase. During competition, parents and swimmers often appraised stressors similarly, while the coach’s appraisals were more limited at this time. Appraisals
Coping strategies. Participants utilized problem, emotion, and avoidant-focused strategies in their attempts to manage their stressors and recalled these as varying in effectiveness. All participants used emotion-focused strategies, particularly during the training and tapering phase. Similarly, all participants employed problem-focused strategies, although a greater variety were implemented by parents than swimmers or coaches. In contrast, swimmers were more likely to utilize avoidant coping strategies.

Cross-case Examination of Stress Experiences

In conducting the individual and cross-case analysis of the data, it was apparent that there were many similarities in the experiences across the cases. In the following sections, the stressors and appraisals recalled across all triad members are explored, with a particular focus upon the interpersonal influences in the stressors and appraisal. It is important to note that, although the stressors below are described as individual themes, there was substantial integration between the ideas.

Factors Influencing Training Progress and Performance. Through the training and tapering phase, parents, swimmers, and the coach all described a number of stressors and appraisals associated with swimmers’ engagement and training progress and performance. Particularly, stressors associated with session attendance and punctuality, logistics and travel demands, injury and illness, academia, and other swimmer behavior were consistently identified across the cases.
Session attendance and punctuality. This theme refers to swimmers missing training sessions, being late to sessions or leaving sessions early and was recalled by two swimmers, all the mothers, and the coach. In describing this stressor, it became apparent that the participants' experiences of this were largely influenced by perceptions and expectations of others. For instance, the coach found it particularly demanding when swimmers did not attend the morning session after the non-tapered meet, as she explained, “we try and teach the swimmers that that the day after competition is equally important … they need to do it so I then find it frustrating when only four turn up.” However, Jenny (the coach) acknowledged that swimmers were not entirely to blame for non-attendance, as she explained, “it’s possibly the parent who spent all weekend at [name of meet] sat there and doesn’t want to take their child ‘cause they’re tired or they think maybe their child’s tired.”

This stressor was shared with two swimmers and all mothers. For instance, Amy shared the following stressor in one interview, “You’ve got to do at least 30,000km a week and by missing that [session] I would have missed quite a few sessions”, while her mother stated, “she [Amy] didn’t want to go training on the Friday night ‘cause she wanted to do her homework but I said ‘you’re gonna have to go ‘cause sessions have been missed.’” Other examples from the mothers included Hazel writing, “my daughter wasn’t keen to go tonight, doesn’t like set on Sundays” and Katherine listing, “late for land training again” as stressors.

In addition to this stressor being shared within and across the triads, the appraisals of this stressor also appeared to be related. For example, the coach explained that she appraised this stressor in relation to swimmers’ performance expectations for upcoming meets. As Jenny explained, she thought, “well they [swimmers] turn to me and ask why they haven’t swum as well as they wanted to at the [competition]. I have it on my register that when they were and weren’t there.” Additionally, Jenny indicated that she became concerned her swimmers would not progress, resulting in frustration. As she explained, “water time is so precious, so to be late
Given Jenny’s frustration, it is perhaps unsurprising that swimmers appraised this stressor against potential coach reactions. As Amy said, “I was worried she [my coach] would shout at me because I got out early,” and Sian explained, “I was quite worried just in case she [Jenny] thought I was purposefully missing it [swimming session].” This appraisal of coach reaction was also shared by mothers, as Hazel explained, “I didn’t want her to get in a row either over something that wasn’t her fault you know but she’s [coach] usually pretty good.”

Consequently, the mothers also indicated appraising this stressor in relation to their child’s own reaction, as one mother said, “my daughter gets tense … she really gets on the defensive … she’ll get in the car and start shouting at me ‘oh god come on were gonna be late again.’”

Coping strategies were also intertwined between the participants. For instance, the coach attempted to cope with this demand by speaking to swimmers that were consistently arriving late to sessions. Jenny said, “sometimes you actually need to say ‘well is there a reason behind this, is there a reason why you are constantly turning up late, what is going on?’ and you can sometimes find out a little bit more.” Jenny rated this strategy as effective (4/5).

The swimmers, meanwhile, turned to their mothers to cope. For example, Amy explained, “I spoke to my mum about it and worked out what to do to catch up on my mileage.” Amy perceived this coping strategy to be effective (4/5). Susan also found talking to her daughter (Amy) helped her to cope with this stressor, as she said, “[I] informed my child [Amy] on what they will say if coach asks why the session was not attended.” Susan rated this as an effective (5/5) strategy because it prevented her worrying about her daughter.

However, Amy and Sian, and their mothers, also used avoidance coping strategies when they missed sessions. For instance, a few mothers mentioned that when their children were late it was “easier not to speak to her [the daughter].”
Logistical and Travel Demands. Tied to the previous theme, all mothers recalled 355 stressors associated with logistical and travel demands. For example, one mother (Susan) simply said, “I get stressed purely with the lifts and running around… I always feel stressed on Tuesday as time is very limited from work to pick-up and drop off again,” while another (Hazel) explained, “I felt stressed having to get both children to their activities at the same time,” and Janet frequently wrote in her diary that a demand was, “Rushing to get to training on time.” The primary appraisals for this stressor were varied, but for all mothers there was a link made to session attendance and punctuality. For instance, Katherine (Alice’s mother) wrote a stressor was the fact she had to “rush again and was almost late for training,” and then went on to explain that she appraised this stressor as threatening because she was worried about the coach’s reaction and her daughter’s reaction [to her coach] if they were late for training. Katherine said, “I was still worried something would be said to Alice about her being late and [I] didn’t want her to get upset.” Additionally, appraisals of this stressor were associated with the potential impact upon parents’ work schedule, as Hazel explained, “I was really stressed after work and worried she would be late for training.”

The mothers used both problem- and emotion-focused strategies in their attempts to cope with this stressor. For instance, all of the parents shared lifts with other parents or among family members to enable them to appropriately transport their children to training. Susan said, “I had to ask a friend if they could pick up from swimming as I was at another pool with other child.” Generally, parents rated this strategy as moderately (3/5) or very (5/5) effective.

However, this could become an additional stressor for parents if they felt guilty depending upon others to help, as Hazel said, “I didn’t like the fact I had to rely on him [Hazel’s dad] because I didn’t have a car and it was really difficult.” Additionally parents used time management strategies (e.g., packing bags, preparing food in advance) and emotion-focused strategies, such as Susan indicating, “I tried to calm myself down by taking deep breaths.”
Stress Experiences in Youth Sport

Injury and Illness. Injury or illness was recalled by all swimmers and this stressor was also shared by each of their mothers. For example, one mother (Susan) simply listed as a stressor, “My child [Amy] has been complaining of a sore shoulder” during the tapering phase.

Amy similarly stated, “everyone else is getting on with it [training] and I couldn’t really do much because my shoulder was hurting.” Across the cases, the stressor of injury and illness appeared to be exacerbated by a perceived lack of support or information from the coach. Susan explained, “It does frustrate me a bit because… I do think there should be numbers given to you straight away… I’d text and then I hear nothing back.”

For Hazel it was actually her own illness that she found demanding during the tapering phase. As she wrote in her diary, she was, “stressed, frustrated and unable to drive daughter to training.” Hazel perceived that she was relying on social support (her coping strategy) too much, which she described in her diary as, “ineffective - me not driving caused a lot of stress on the family as they are busy with activities and extra stress on my husband. Feel like I’m letting him down.” Hazel summarized this stressor stating, “I haven’t been able to drive… my husband’s been bringing her…. I didn’t take her… I was gutted.”

Similar appraisals were made by swimmers and parents in relation to injury and illness. Particularly, appraisals were made in relation to training progress and performance expectations. For instance, Susan said, “she’d [Amy] missed four sessions, which isn’t a huge amount but I know they were doing sprint sets… but you do worry because I thought, you know, she’s coming up to the [major competition] and I was hoping she’d be in a good place for it.” The swimmers additionally expressed appraisals regarding their progress relative to others. For instance, Amy said, “[I’m] just worried when I go back that all the others will be ahead of me and I wouldn’t be able to do the same times as I was doing the week before.”

The participants reported using numerous coping strategies, with varying effectiveness. For instance, Amy used positive reframing to cope with this stressor as she explained, “Better
Stress Experiences in Youth Sport

To be ill now than just before the [National competition]." Amy also used emotion-focused coping, seeking social support, for example speaking to her mum and coach, as well as problem-focused by adapting her training sessions. The coping effectiveness of ‘telling coach’, initially was perceived as ineffective (2/5) as Amy did not think the coach cared. Amy explained it was “not that effective because nothing was done about it so I felt upset.”

Similarly, Alice wrote that one coping strategy she used was, “I told my coach so she knew why I was swimming bad.” However, again, this was not perceived as effective (1/5) because Alice was still in pain and telling her coach did not eliminate the problem.

For mothers however, the coping strategies appeared less effective, for instance, Susan (Amy’s mother) cited that she did not have many coping strategies and could not cope very well with Amy’s injury because she thought the stressor was out of her control, as she said, “I can’t do anything… just gotta sit back and let it all go over my head.” While Hazel evaluated her strategies to cope with her own illness as ineffective. As she explained, “no I don’t think I coped very well. no I was shouting at [husband]… I was absolutely horrendous.”

Swimmer behavior. During training, and particularly the tapering phase, participants indicated a range of issues associated with the behavior of other swimmers during sessions. In fact, swimmers and their mothers recalled the stressor of swimmer behavior across all cases. For instance, Amy explained, “it was like really annoying… they [new swimmers] weren’t listening they were just pushing off and sprinting it all.” Similarly, Alice said a stressor during training was, “people going off the wrong times” and, “having to swim with the older squad, and nobody wanted to talk to me, not even the people near my age.” This was reiterated by her mother (Katherine) who stated a stressor was, “some of the newer members of the squad were racing the set and not listening to the coach.”

Swimmers and mothers’ primary appraisals for this stressor were associated with training progress and coach reaction. Amy explained, “I couldn’t swim properly and they
mother’s perspective, Katherine explained that other swimmers hampering her daughter’s progress was concerning. She explained, “I was getting more and more worked up about it because they [other swimmers] were stopping her and she was just hanging back because they wouldn’t let her overtake.” Katherine indicated that she did not cope very well with this stressor (1/5), writing, “I carried on watching and let the frustration build.” Katherine did reappraise this stressor and said, “well I mean I did sort of think they’re new to the squad they’re trying to impress the coach… I can understand why they were doing it …”

Sian and her mother (Hazel) also shared a stressor regarding swimmer behavior, specifically Sian being bullied and distracted. As Sian explained during tapering, “a girl I’ve been having problems with turned up to a training session and was trying to race me.” Her mother also explained, “I know she’s had a problem with that girl again… she was swimming on everybody’s feet again… and she tried it Monday night again… it’s just I’ve had enough of it.” For Sian and Hazel, the primary appraisals of this stressor were associated with training progress. Sian said she felt, “annoyed and upset at the time because I knew she was doing it to get to me purposefully no one else, she wanted to distract me.” Hazel additionally expressed concerns about her child’s emotional wellbeing. Hazel did not perceive that she coped with this stressor (0/5), but she did attempt to ignore it by “letting it [other swimmers behavior] go over my head ‘cause I know if I approach them is gonna get nasty.”

Academia. Lastly, academia, and its balance with swimming, was another stressor regularly cited by swimmers and mothers during the training and tapering phase. Particularly, participants raised concerns pertaining to fitting in schoolwork and exam revision. For instance, Sian wrote, “I have a lot of pressure from my schoolwork,” and Amy listed stressors such as, “I have a Science test, no time to revise” and, “I know I’m not gonna be an Olympian
Swimmers and mothers’ described many appraisals associated with academia. For the mothers, the primary appraisal was associated with their daughter’s health. As Hazel stated, “She [Sian] said, ‘I wanna get into the distance squad’ but she’s got her GCSE’s coming up and she’s under a lot of pressure… we are worried somewhere along the line something’s gotta give.” In contrast, swimmers mostly appraised academia relative to maintaining a good academic standard. As Amy explained, “because I’m in the top set I want to stay there… if I don’t do well there’s a chance I could be moved down.” On one occasion Amy did reappraise the stressor of academia as less threatening and that training may be beneficial. Amy wrote in her diary, “the test was easy so there was no need to worry about it, sometimes it’s good to swim to get revision off your mind.” Kate, meanwhile, appraised the stressor relative to her coach’s reaction, explaining, “I would rather get out like say half an hour earlier [to revise] but I don’t think the coach likes that so I kinda gotta cope with trying not to revise.” While Sian, on similar lines, appraised academia in relation to the potential impact on training progress, as she explained, “I was quite worried because I had morning training as well the next day… I thought I needed to do as much as I can and then not go to bed too late before morning training otherwise I’ll be like really slow.”

Swimmers and mothers attempted to utilize a range of strategies to manage the stressor of academic. Problem-focused strategies were generally associated with time management. For instance, Sian said, “I try and do it [homework/revision] in between [races] and I like do some in the car if it’s revision I revise in the car before like training it helps me gives more time.” Hazel supported Sian with these strategies, which subsequently eased her own anxiety and
swimmers, and one mother cited stressors regarding training performance. Jenny simply wrote a stressor is “swimmers struggled with main set.” The primary appraisal for this was associated with swimmer reaction as Jenny explained, “if their heads go down and they’re like ‘oh miles off my time I can’t do it’ there’s not a lot you can do.” Further, this was also prevalent in relation to training effort, as she explained a stressor for her was, “swimmers not swimming at the intensity required.” To cope, Jenny used problem-focused strategies, specifically, “I did speak to them and go ‘it’s up to you to put the effort in, I can’t get in there and swim it for you so if you don’t put that effort in then you’re not going to get the results.’”

The swimmers also frequently cited the stressor of training performance during the training and tapering phase. For example, after one session Amy reported, “I could have swum faster but my body was just not going anywhere.” Kate described stressors arising from feeling tired in a session and not making target times for sets, while Alice shared the following stressor, “I felt tired, the pool was very warm which tired me out more, I swam like a 5-year-old.” Seemingly aware of the potential response from the coach, the swimmers indicated appraisals related to their coach’s reaction. Amy explained, “I was worried they [the coaches] might say you know move down a lane or something,” while Kate shared, “Jenny wants to see how well we are doing and I think I was the only one not doing well.”

For Alice, the primary appraisals underpinning training performance were also associated with her mother’s reaction, particularly her mother responding negatively to her struggling in training. Alice said, “sometimes when I have quite bad sessions or if I’m behind or something my mum will get annoyed with me.” Interestingly, it was only Alice’s mother who recalled a stressor associated with training performance, often writing, “still concerned
Coping strategies adopted by swimmers and mothers, were predominately emotion-focused. For instance, Amy sought social support from her mum and her coach and perceived this to be effective (4/5) because she found it useful to use people as a sounding board to voice her concerns. She stated “I just try to talk to as many people as I can so I can get it out of my system.” Katherine (Alice’s mother) also sought social support from her daughter, explaining, “I said to her today it’s only 3 and a half weeks, start pulling your finger out you know you’ve got to start keeping up.” Katherine cited that this was only partially effective as a coping strategy (3/5) because she believed it helped her but not Alice and that Alice did not really listen to her. Additional coping strategies used to manage stressors of training performance were distraction techniques (e.g., watching TV) and positive reframing, as Kate said, “I just thought well it’s gonna happen sometimes [training poorly] or its hitting me today maybe it will hit someone else in a couple of days time.”

**Competition-related demands.** Beyond factors influencing training and subsequent training performance a number of specific competition-related stressors were recalled during the tapering and competition phase. These stressors are focused upon perceptions of swimmer’s preparation, parents and swimmers’ expectations, and performance expectations and outcomes.

**Swimmer preparation.** During competition, coaches, mothers, and swimmers highlighted stressors regarding the quality of swimmer’s preparation to perform in competition. For Jenny, it was swimmers’ physical preparation that she found demanding. She wrote in her diary, “swimmers not preparing enough (swim downs).” This was reiterated by swimmers and parents, for instance Alice explained that a stressor was, “the warm up mostly because sometime I feel like I haven’t done enough” and this was shared by her mother who stated, a
A lack of recovery time, which could subsequently impact upon performance, was also cited as a stressor. As Sian explained, “I didn’t really have time to recover… didn’t know the races were so close together. I thought I had more time I was quite worried I would struggle in the race.”

The primary appraisal of this stressor was also similar for all participants, with concerns raised regarding the potential impact upon race performance and outcomes. For instance, Jenny explained she felt, “Cross, putting their swims in jeopardy” and Alice explained this stressor was threatening because, “I haven’t trained much in the stroke and then I think I haven’t done it in the warm up.” For Katherine, the stressor was also appraised in relation to the coach’s and her daughter’s reaction. As she explained, “I felt worked up and on edge. I blamed myself for not getting the both of us organized and I felt angry that my daughter was worried and the coach would not be happy if she found out.”

To cope with this demand, all parties turned to others for support. For example, Jenny sought social support from other coaches, writing, “I sounded out to [another coach]” and rated this as partially effective (3/5) because she had not addressed the problem. Katherine, however, talked to Alice to try and reassure her, she wrote, “I talked to Alice to try and calm her down and told her to apologise to the coaches and concentrate on her warm-up and races.” Katherine did not perceive this to be very effective (2/5) as it did help her (Katherine) calm down. She also sought social support from Alice by attempting to speak to her in the car journey to the competition, she explained, “I think she worked herself up too much and didn’t prepare mentally properly that’s why I tried to speak to her in the car.” However, this was rated as an ineffective coping strategy (0/5) because she did not perceive Alice to listen to her.

Parent and swimmer expectations. The main stressor Jenny encountered across the phases were parent expectations. As Jenny explained, “they [parents] always ask for them to
improve or because they expect PB’s and if not they question you on it... “For some swimmers, this was a stressor they also echoed, for instance, one swimmer described a stressor as, “just like having little arguments with them [parents] because of swimming... like if I’m not training well yeah she [mother] just gets annoyed, my mum gets annoyed I wasn’t swimming well.” Jenny’s primary appraisal for parent expectations was associated with her coaching ability. Jenny was concerned that parents were questioning her coaching ability, as she explained, “the parents need to learn... I wouldn’t have created the swimmer that I’ve created if I didn’t know what I was doing.”

To cope with parental expectations Jenny used problem-focused coping, asking the swimmers to talk to their parents. Jenny said, “I try and prep the swimmers... I just reiterate all the time because we were coming up to [meet] and it was ‘right you know we are not, this is a see how we are meet, you know? Don’t want your parents getting too worked up about it, it’s nothing major you know you’ve gotta stay calm.’” Jenny also spoke to the parents directly regarding expectations for the meet. Jenny wrote in her diary, “spoke to parents, explained that we are training through this meet and PB’s are not expected.”

Another stressor Jenny experienced during training was swimmer expectations, particularly with regards to their performance at a non-tapered meet. Jenny said, “Going into [name of meet] when they didn’t swim well there were some sad faces and it doesn’t matter how much you tell them that that [getting a PB] isn’t going to happen, it doesn’t make any difference.” The primary appraisal for this stressor was associated with swimmer reaction, particularly the potential for swimmers to have a negative experience if they did not swim as well as they thought they should. Jenny said, “It’s not nice when they do get upset and they’re trying and they [swimmers] don’t understand why and I do find that stressful you, don’t like to see them upset.” To cope Jenny used problem-focused strategies by speaking to her swimmers...
Performance expectations and race outcomes. The main stressor Jenny experienced during competition was performance expectations and race outcome, as Jenny explained, “erm the girls [name of event] was a little bit stressful because both girls didn’t swim well in it they didn’t PB… so that was a little bit stressful because we had put such an emphasis on this meet.” This stressor was shared with the swimmers and mothers. For instance, Amy wrote a stressor was, “First event back since hard training,” while her mum wrote, “[Amy] she hasn’t PB’d in this event for over a year now… I just keep thinking in my head that maybe it’s gonna be the next one now, I keep expecting her to take a chunk of time off.” Sian similarly explained, “I was worrying about the [name of event] and getting a good time for it.” While her mum wrote, “I just get really nervous before she races, really nervous.”

The appraisals of this stressor were varied but for the coach were generally associated with the impact that poor performances might have future performances. As she explained, “I was a little bit worried that them not swimming well in that it would then affect them for the rest of the meet.” Kate meanwhile appraised this stressor relative to obtaining qualifying times for certain competitions, especially in her main event, as she said, “erm I think it was my 200 free final on Friday where I didn’t get the trials time in the morning” and also for her finals performance as she said “in the final I got more and more stressed because I didn’t get the time in the morning.”

Both parents and swimmers also appraised performance outcomes relative to others’ reactions, namely the reaction of the coach or each other. As Kate explained:

When we did a cold swim a couple of weeks ago I did a faster time and Jenny was like “oh you can do that in the race” and then leading up to the race I didn’t do it, so it kinda like worried me a bit thinking like “I can do it in training but I can’t do it here.”
Alice meanwhile stated, “Jenny wanted me to do certain times… I felt like I disappointed Jenny because I didn’t do what she said.” Swimmers were also concerned about their parents’ reactions and parents were worried about swimmers’ perceptions. For instance, Katherine described, “I don’t want her to be upset, she’s put the work in and she’s done a terrible race.”

Participants used a variety of strategies to cope with the stressor of performance expectations and outcomes, a number of which were inter-related. For instance, Jenny said, “as soon as they got out [of the pool] I sent them for the swim down and then when they came back to me I sat and had a chat to them…” Jenny perceived that this was a partially effective coping strategy (3/5) because, “it reduced mine [stress] because it did look like they were listening but the stress wasn’t totally alleviated until they’d raced their next race.” Kate explained that these coach briefings were a useful coping strategy for her, saying she coped by “just focusing on the coach and try to like get her view of it.”

Amy sought support from her mum and her coach before and after races. Amy felt she benefitted from these talks because, as she said, “If I know what I’m doing it’s easier too, whereas if she [coach] said go and swim I wouldn’t know how I was supposed to swim it.” Social support was rated as an effective coping strategy (4/5) because Amy felt positive about her races. Participants also recalled using numerous avoidant coping strategies, for instance Kate said she “kinda talk[s] with the other girls just about different things and just tries to make like conversation and tries to just like laugh and just not think about the race,” while Hazel said, “just talking to the other mothers and chilling out.”

Discussion

This study aimed to explore the individual stress experiences of youth swimmers, parents, and coaches, while also identifying the common or shared stress experiences of these individuals. Specifically, we sought to identify the inter-relation between stressors, appraisals, and coping strategies within the athletic triad. Overall, findings indicate that participants had a
range of stress experiences, encountering competitive, organizational, and personal demands, with the appraisals related to factors such as training progress, competition performances, and reactions of others. The types of stressors and appraisals observed in the study appeared to change across time. Particularly, there was a shift from experiencing organizational stressors during the training and tapering phases of the study towards encountering competitive stressors and subsequent appraisals with a greater performance and outcome focus during the competition phase. Numerous coping strategies were employed by participants to manage the demands they encountered, with varying degrees of perceived effectiveness reported.

Perhaps one of the most pertinent findings of this study was the extent to which parents and children’s stress experiences were mutually shared. The stressors and appraisals experienced, as well as the coping strategies employed by swimmers and parents, were closely interrelated, demonstrating the complexity of the parent-child relationship. Such a finding reinforces previous literature indicating that adolescent athletes are reliant upon parents to manage demands (Fletcher et al., 2006; Tamminen & Holt, 2010a), while also extending our understanding of parents’ reliance on their children to help parents themselves manage the stressors they experience in sport (e.g., Burgess et al., 2016). Interestingly, although social support is frequently reported as an effective strategy to manage stressors (cf. Crocker, Tamminen, & Gaudreau, 2015), in this study parents’ heavy reliance upon social support appeared to exacerbate the stressors both they and their children experienced. Parents often perceived that seeking social support from their child was ineffective because the child did not react positively and/or the problem was not dealt with. Tamminen and Holt (2010a) similarly identified that social support can be detrimental if athletes perceived parents’ social support as a stressor rather than a support mechanism. As such, it may be beneficial for parents to receive guidance on how to proactively access other social resources, as well as draw on more problem-focused coping strategies, rather than having to rely on their children.
This complexity of influence between parents and children is supported by developmental psychology literature that has highlighted the reciprocal nature of the parent-child relationship, with specific parenting styles influencing children’s behaviors and children influencing their parent’s behaviors (Dorsch et al., 2009; Grolnick, 2003; Holt et al., 2009). Congruent with the findings of Holt et al. (2009) the current study supported the notion of emotional contagion effect (George, 1990), with children’s negative emotional responses to stressors being transferred to parents, subsequently leading the parent to take action to reduce or buffer their child’s negative emotions (Dorsch et al., 2009). Such a finding provides further evidence of the social nature of emotions, and the critical need to ensure that assessments of stress and coping appropriately account for intra- and interpersonal influences (Smith, Bundon, & Best, 2016; Tamminen & Bennett, 2016).

Our study also found that children influenced their parents’ stress experiences, consistently seeking social support from their parents to manage the stressors they experienced. In seeking such emotional and social support, swimmers may actually increase the demands placed upon their parents as parents indicate that they struggle to know what to say and how to respond to their children, while also attempting to manage their own emotions (Knight & Holt, 2013). One instance in the current study in which parental guidance appeared particularly beneficial or desirable for the swimmers, but was also reported as a large demand for parents, was when swimmers were anticipating a negative reaction from their coaches.

Unfortunately, because coaches often find parental involvement to be demanding and recall parents “interfering” in training and competitions as a stressor (Knight & Harwood, 2009), many organizations and coaches are attempting to limit parents’ engagement with children at training and competition (cf. Holt & Knight, 2014). In doing this, coaches may actually be exacerbating the stressors that children are experiencing, some of which may be stemming from the coaches’ own behavior, by removing access to one of their most important
The swimmers also appeared to influence their parents’ (and coaches) stress experiences by displaying negative externalizing behaviors in response to specific stressors, which influenced the subsequent stressors and appraisals that parents experienced (cf. Harwood & Knight, 2009a, 2009b). Given the close associations between parents and children’s stress experiences, the findings of the current study provide clear evidence that, even during adolescence, parents continue to play a critical role in young athletes’ sporting experiences. This finding is important because, although it is accepted that parents are important in young athletes’ lives, the focus during later adolescence has often shifted towards the role of coaches and peers as athletes seek to gain emotional independence (Côté, 1999). Consequently, it is often (mistakenly) perceived that parents play a more limited role in the lives of adolescent athletes than they actually do (cf. Holt & Knight, 2014).

There was also evidence of shared stress experiences between all three triad members (i.e., parents, children, and coach), particularly in relation to session attendance and movement between squads. Most notably, it appeared that all participants were concerned with how the others would react in certain situations, which subsequently influenced their own reactions. These reactions, in turn, fulfilled the concerns the others held about these reactions and as such, the participants seemed to be trapped in a cycle of encountering demands and subsequent appraisals stemming from the reactions of each other, which were continually being reinforced. Both mothers and coaches indicated that one of their main coping strategies when appraising concerns regarding each other’s reactions was to avoid the other party. Such avoidance is consistent with previous literature on coaching stress (Knight & Harwood, 2009), despite an awareness of the importance of parents and coaches communicating to enhance opportunities
Stress Experiences in Youth Sport

... behaviors may have on all members of the athletic triad, and provide further evidence of the need to educate parents and coaches regarding open and honest communication.

**Limitations and future directions**

There are several limitations to our study that should be taken into account when conducting future research in this area. Firstly, one limitation is the lack of detail provided by participants in the diaries. Previous longitudinal studies have identified high non-completion rates, particularly when a single booklet was administered (Nicholls et al., 2005, 2006). To resolve this issue, we administered diaries on a weekly basis and reported relatively high completion rates throughout. However, the quality of information provided in the diaries was sometimes lacking, although this was followed up in the interviews. Further, although participants were encouraged to complete diaries on a daily basis, we did not track this and consequently participants may have forgotten to record all pertinent information. Thus, future research could consider different methods or approaches to data collection, for example, think aloud protocols or the use of interval contingent diaries.

Another possible limitation of this study was participant’s interpretation of subject-specific terminology (e.g., stressors, coping effectiveness). In an attempt to rectify this and accommodate the young age of some study participants (adolescent athletes), stress themes in the diaries were altered and definitions and examples were given at the onset of the study to clarify the meaning of questions. Despite these definitions it was clear that participants still had problems interpreting the diary questions. For example, several participants confused appraisals with demands. However, follow-up semi-structured interviews with participants were used to clarify meaning and the inconsistencies evident in the diaries.
To further this research area, future studies should consider extended longitudinal investigations (e.g., over the course of an entire competitive season) in order to fully explore the temporal nature of stress encounters. Similar research that explores the entire stress process within team sports such as soccer or hockey may be salient, especially as there are likely to be more social interactions within a team sport context and consequently there is potential for greater overlap in stress experiences. Another interesting research pursuit would be to examine the influence of other social agents, including fathers, other siblings, and peers, to fully understand the social processes operating in the youth sport environment. Finally, developmental changes warrant further investigation given that athletes’ perceptions of stressors and use of coping strategies change with development (Reeves, Nicholls, & McKenna, 2009), as does the involvement of parents and coaches (Côté, 1999).

**Conclusion**

Our study has provided further support for the transactional perspective of stress, showing the dynamic and recursive nature of the stress process among individuals. It has also provided novel insight into the shared stress experiences operating within the athletic triad (parents, coaches, and athletes) and highlighted the need for further research to fully comprehend the complexity of stress experiences in youth sport. Overall, the findings indicate a clear need for governing bodies, clubs, and practitioners involved in youth sport programs to promote understanding among all individuals within the athletic triad, as well as an appreciation of how their behaviors may influence upon each other’s stress experiences. Our study illustrates that education and interventions aimed at reducing negative stress experiences in sport should be expanded beyond a focus on individual experiences to include an understanding of the interpersonal influence on athletes’, parents’, and coaches’ stressors, appraisals, and coping strategies.
Stress Experiences in Youth Sport

References


Stress Experiences in Youth Sport


Stress Experiences in Youth Sport


Acknowledgements: This study was part-funded by a research grant from the Association of Applied Sport Psychology and an MSc fees bursary from the College of Engineering, Swansea University.
### Appendix A

**Daily Diary - Swimmer (EXAMPLE SHEET)**

**Participant number: S1**

<table>
<thead>
<tr>
<th>What demand/stressor have you experienced in relation to swimming today?</th>
<th>How did you feel about this demand/stressor?</th>
<th>How did you cope with this demand/stressor?</th>
<th>How effective was your coping?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being late for training</td>
<td>This made me feel stressed because I was worried I would get miss an important set and that I would get shouted at by my coach for being late.</td>
<td>I tried to distract myself by chatting to my mum about my day in the car journey to the pool.</td>
<td>1</td>
</tr>
<tr>
<td>There were too many people in the warm up lanes at the competition and not enough time to warm up properly.</td>
<td>At first I felt a little anxious and upset because it meant I could not stick to my pre-race routine. But then I thought about it and realised I could always do a land warm up.</td>
<td>I warmed up as well as I could in the lane space available. I then got out of the pool and did some skipping and stretches’ on poolside to keep me warm before my race.</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix B

Interview guide- swimmers

Ethics statement: Before we begin I would like to remind you that this interview will be audio recorded but everything you tell me will be kept strictly confidential. You don't have to answer the questions if you don't want and you can ask to stop the interview at any point just let me know. I would like to remind you that there are no right or wrong answers I am just interested in what you have to say. Do you have any further questions before we start?

Introductory questions:
• How do you feel swimming training is going this year?
• What are your favourite/main events?
• Have you got any competitions coming up or had any recently?

Transition questions:
• What are your recent experiences of swimming training or racing?
  o Are these positive/negative experiences?
• What would you say are the main demands or stressors you have experienced over the past 2 weeks?
• What stress has your coach experienced over the past 2 weeks? - how has she/he been behaving?
  o What particular behaviours has your coach displayed over the past 2 weeks that are a sources of stress to you?
• What stress have your parents experienced over the past 2 weeks that you are aware of? how have they been behaving?
  o What particular behaviours have your parents displayed over the past 2 weeks that are a sources of stress to you?

Main questions:
Now we will refer to specific demand/stressors and coping strategies in your diary transcripts that you have filled out over the past 2 weeks. In relation to (use specific example of a demand/stressor) during training/tapering/competition that you mentioned in your diary…
  o What is it about this experience that you find particularly stressful?
  o How frequently would you say you experience this particular demand/stressor?
  o How do you view this stressor? (Probe for primary/Secondary appraisals)
    o What were your immediate thoughts and emotions surrounding that stressor?
    o Did you feel you had the ability to cope with the stressor initially?
    o Probe (controllability) –did you feel you had control over the stressor?
    o Do you feel differently now you have time to reflect/ do you still perceive it as a demand/stressor?
  o What did you do to cope with this demand/stressor? –probe for simultaneous coping
    o What actions did you take?
    o How did your body react?
    o What were your immediate thoughts?
    o What particular emotions were you experiencing at the time?
  o How effective do you think you coped with this stressor you have mentioned?
    o probe for the reasons of effectiveness- what is the reason you think it was effective/ineffective?
    o If unsuccessful what would you do differently to cope better next time you experience this stressor?

Repeat these questions picking out key stressors noted down in the participant’s diary from tapering/competition

Summary questions:
• In training/tapering/competition what would you say are the three main demands or stressors that you experience?
• How do you view these demands or stressors?
• What are the key strategies you adopt to cope with each of these stressors?
• How effective do you think each of these coping strategies are?

Thanks for chatting. That’s all my questions for now. Is there anything else you’d like to tell me?
Table 1. Overview of stressors, appraisals, and coping strategies

<table>
<thead>
<tr>
<th>Stressors</th>
<th>Appraisals</th>
<th>Coping Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session attendance and punctuality</td>
<td>Within-squad rivalry</td>
<td></td>
</tr>
<tr>
<td>Academia</td>
<td>Child/swimmer reaction</td>
<td></td>
</tr>
<tr>
<td>Other swimmer behaviour</td>
<td>Coach reaction</td>
<td></td>
</tr>
<tr>
<td>Injury and illness</td>
<td>Race outcome</td>
<td></td>
</tr>
<tr>
<td>Logistical and Travel</td>
<td>Performance expectations</td>
<td></td>
</tr>
<tr>
<td>Squad movements</td>
<td>Squad position</td>
<td></td>
</tr>
<tr>
<td>Training performance</td>
<td>Child’s physical and emotional health</td>
<td></td>
</tr>
<tr>
<td>Swimmer expectations</td>
<td>Academic standard</td>
<td></td>
</tr>
<tr>
<td>Parent expectations</td>
<td>Training progress</td>
<td></td>
</tr>
<tr>
<td>Individualised tapering/session delivery</td>
<td>Social support reliance</td>
<td></td>
</tr>
<tr>
<td>Child behaviour</td>
<td>Work commitments</td>
<td></td>
</tr>
<tr>
<td>Coach favouritism</td>
<td>Physical growth &amp; development</td>
<td></td>
</tr>
<tr>
<td>Non-tapered meet performance</td>
<td>Coaching ability</td>
<td></td>
</tr>
<tr>
<td>Parent communication</td>
<td>Socializing opportunities</td>
<td></td>
</tr>
<tr>
<td>Swimmer training effort</td>
<td>Family commitments</td>
<td></td>
</tr>
<tr>
<td>Parent reactions</td>
<td>Long term sport participation</td>
<td></td>
</tr>
<tr>
<td>Performance expectations and race outcomes</td>
<td>Social exclusivity</td>
<td></td>
</tr>
<tr>
<td>Competition organisation</td>
<td>Financial constraints</td>
<td></td>
</tr>
<tr>
<td>Race preparation</td>
<td>Sibling comparisons</td>
<td></td>
</tr>
<tr>
<td>Child’s physical and mental preparation</td>
<td>Other coach reaction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Performance feedback</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rivalry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disqualification</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tactical proficiency</td>
<td></td>
</tr>
</tbody>
</table>
Table 4. Shared competition stress experiences

<table>
<thead>
<tr>
<th>Triad 1: Jenny (Coach), Susan (Mother), Amy (Swimmer)</th>
<th>The main stressor all three triad members shared was performance expectations and race outcome. The coach appraised these reactions as she perceived that Amy and Susan had high expectations for the meet, while Amy and Susan appraised the demand relative to obtaining necessary qualification times for another competition. The triad attempted to cope with this demand by talking to each other but Susan did not like to speak to Jenny and Jenny actively avoid Susan as she perceived that her coaching ability was being questioned.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triad 2: Jenny (Coach), Janet (Mother), Kate (Swimmer)</td>
<td>The main stressor shared by all three members of the triad was performance expectations and race outcome. One of the appraisals linked to this stressor was tactical proficiency, which the coach and swimmer shared. Jenny, the coach, found this particularly demanding as Kate ignored her tactical advice and paced the race as she wanted.</td>
</tr>
<tr>
<td>Triad 3: Jenny (Coach), Katherine (Mother), Alice (Swimmer)</td>
<td>Alice and Katherine shared the stressors of performance expectations and race outcome, and preparation. Both had appraisals for the demand of performance expectation and race outcome such as coach reaction. Alice got upset by the coach’s reaction to one of her races. Consequently, Katherine appraised the coach’s reaction and child’s subsequent reaction to coach as threatening. Another shared appraisal was rivalry. Katherine researched competitors that she wanted Alice to beat or stay within races. However, Alice’s appraisals linked to rivalry were more to do with competing within the squad and not external rivals (e.g., within squad rivalry). Katherine cited that Alice not being interested in external rivals was a demand. Katherine viewed this as Alice not being mentally prepared for the competition. Katherine found Alice’s behavior of discussing external rivals to be a demand.</td>
</tr>
<tr>
<td>Triad 4: Jenny (Coach), Hazel (Mother), Sian (Swimmer)</td>
<td>All three shared the key stressor of performance expectations and race outcome. When Sian did not perform well, expectations were a demand for her, which was true of Sian and Hazel who had high expectations for the race. Sian appraised this stressor with coach reaction and the coach did indeed have high expectations for Sian, a shared appraisal that the child and mother had.</td>
</tr>
</tbody>
</table>
Table 3. Shared triad experiences during the taper

<table>
<thead>
<tr>
<th>Triad 1: Jenny (Coach), Susan (Mother), Amy (Swimmer)</th>
<th>Tapering shared stress experience</th>
</tr>
</thead>
</table>
|                                                      | One of the stressors cited by Jenny was individualized tapering and session delivery. Jenny was concerned that this might affect swimmers’ performance at the upcoming national meet. Therefore to cope with this stressor Jenny told Amy to miss certain sessions in order to rest and taper effectively for the meet. However, this exacerbated the stressor of session attendance that Susan was experiencing because it meant Amy was missing a session when she had already had time off due to injury and illness prior.

Another stressor shared by all triad members was Amy’s injury and illness. Susan and Amy shared similar appraisals linked to Amy’s training progress and having to miss sessions. These linked directly to their appraisals associated with performance expectations because Susan and Amy were concerned that being injured and ill would affect Amy’s performance at upcoming competition. Jenny also shared this appraisal of performance expectations regarding Amy’s injury and illness. Jenny coped by giving advice to Susan but she perceived that Susan ignored this. Susan found Jenny’s reaction to her daughter’s injury a particular demand because she was unresponsive.

| Triad 2: Jenny, Janet (Mother), Kate (Swimmer) | Training performance was a stressor shared between Kate and Janet. Jenny was aware of this stressor on her swimmer and was concerned about the impact Kate’s lack of progress in training would have on her mental preparation for the competition. Thus, Jenny tried to help Kate cope via the use of emotion-focused strategies, discussing how Kate was feeling and letting her have some rest days. Kate was concerned that her poor training would influence her performance in competition, particularly the upcoming national meet. Janet’s appraisal of performance expectations for the competition, as shown by her mum researching the qualifying times her daughter required, as well as questioning the coach on her daughter’s performance and progress in training. Despite Jenny qualifying she still shared the performance expectations held by Kate and Janet. Jenny also appraised this stressor against Kate’s reaction to parental expectations.

| Triad 3: Jenny, Katherine (Mother), Alice (Swimmer) | Training performance was a continuing stressor, associated with an appraisal of skill acquisition and subsequent training progress and squad position. Appraisals for this stressor by Alice and Katherine were associated with training progress and the need to meet squad position.

| Triad 4: Jenny, Hazel (Mother), Sian (Swimmer) | Jenny reported that individualized tapering and session delivery was a stressor, which was also shared by Sian. Both Jenny and Sian shared similar appraisals linked to performance expectations. The individualized tapering delivered by the coach was more demanding for Sian as she did not swim well. This reinforced the appraisals made earlier on during the tapering phase by both individuals.
Table 2. Training shared stress experiences

<table>
<thead>
<tr>
<th>Triad 1: Jenny (Coach), Susan (Mother), Amy (Swimmer)</th>
<th>The main stressor that was shared between Susan and Amy was session attendance and punctuality. Both shared stressors such as coach reaction, squad position, within squad rivalry, and performance expectations. To cope, Susan actively sought this support from her mum because it helped Amy by reducing her worries related to her coach's reaction. Amy sometimes attempted to cope by shouting (emotion-focused) at the swimmers for being late or not attending sessions. This reinforced the Susan and Amy's appraisals of coach reaction. In addition, the appraisal of squad position underpinning session attendance and punctuality cited by Susan and Amy linked directly to a stressor cited by the coach which was squad movements. Jenny appraised squad movement in relation to parents reacting negatively and Susan and Amy were concerned that Amy not attending sessions could result in her dismissal from the squad. The stressor of session attendance was exacerbated by the fact that Amy was experiencing the demand of academia, which meant she was under pressure to get out of sessions early to revise for school exams combined with the fact that Susan had work commitments meaning Amy was getting to sessions late. Thus coach, swimmer, and parent all expressed concerns about squad movements and where they fit within the club system, specifically with regard to squad position as well as how one another will react if changes are made.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triad 2: Jenny (Coach), Janet (Mother), Kate (Swimmer)</td>
<td>Janet and Kate shared a stressor of session attendance and lateness. Janet wanted her daughter to go to training and found Kate's response a stressor in itself. To cope with this demand Janet ignored Kate and made her go to training. Jenny also cited session attendance as a stressor. However, Jenny did not find this a stressor with Kate as she rarely missed sessions. Another stressor encountered by Kate was training performance because she was struggling to keep up or achieve target times. Kate appraised this in relation to training progress and performance expectations. Jenny shared this stressor and also appraised it related to swimmer reaction. Non-tapered meet performance was a stressor shared by all three triad members. The coach Jenny cited that parent expectations were a main stressor, an example being Janet questioning her about Kate’s lack of progress.</td>
</tr>
<tr>
<td>Triad 3: Jenny (Coach), Katherine (Mother), Alice and Katherine shared a stressor of long-term progress. This stressor was closely linked to the acute stressors shared in the training phase by Amy and Katherine including training performance, session attendance and lateness, other swimmer behavior, and injury and illness. Katherine also shared similar appraisals linked to performance expectations and race outcomes such as personal bests, national qualifying times, and race outcomes.</td>
<td>Alice and Katherine shared a stressor of long-term progress. This stressor was closely linked to the acute stressors shared in the training phase by Amy and Katherine including training performance, session attendance and lateness, other swimmer behavior, and injury and illness. Katherine also shared similar appraisals linked to performance expectations and race outcomes such as personal bests, national qualifying times, and race outcomes.</td>
</tr>
<tr>
<td>Alice (Swimmer)</td>
<td>within squad rivalry, and rivalry (rankings). To cope with the stressors Katherine attempted to speak to Alice. Alice’s reaction to Katherine became a further stressor and Alice perceived Katherine talking to her as a stressor. Katherine perceived that Alice was not listening to her so Katherine attempted to switch to avoidance coping. However, this has caused arguments and shouting between Katherine and Alice.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Triad 4: Jenny (Coach), Hazel (Mother), Sian (Swimmer)</td>
<td>The main stressor Hazel and Sian shared was the ongoing stressor of other swimmer behavior, with swimmers from the same squad bullying Sian. This stressor is closely associated with other demands such as session attendance and lateness and academia, which were shared by Hazel and Sian, because these stressors were appraised as ultimately affecting Sian’s training progress. The predominant primary appraisal for Hazel and Sian was linked to squad position. Academia was another stressor cited by Hazel and Sian throughout training and tapering. Session attendance and lateness was a stressor shared by all three triad members. Sian did not like being late to sessions appraising it negatively due to a possible reaction from Jenny to her being late, performance expectations and others in the squad gaining an advantage over her. Hazel’s appraisal of the stressor session attendance and lateness was associated with Sian’s reaction to being late. Hazel was primarily concerned about being late out of work and getting her child to training on time due to her child’s anxiousness around lateness. Often, ineffective, emotion-focused coping in the form of shouting or arguing took place between parent and child.</td>
</tr>
</tbody>
</table>
Highlights

• This study examined the individual and shared stress experiences of parents, coaches, and adolescent swimmers

• A case study approach was adopted

• Parents and swimmers shared many stressors and often relied on each other to cope

• Coaches, parents, and swimmers appraisals and coping strategies were intricately related

• Stress interventions would benefit from fully considering the interpersonal influences on stress experiences