**Advancing our Understanding of Psychological Stress and Coping Among Parents in Organized Youth Sport**

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**Abstract**

The current study investigated psychological stress among parents of competitive British tennis players. Adopting a multipart concurrent mixed method design, 135 British tennis parents completed a cross sectional online questionnaire to examine their primary appraisals, emotions, and coping strategies associated with self-disclosed stressors. Hierarchical content analysis was conducted on open ended questionnaire responses to identify key stressors and coping strategies, and descriptive and inferential statistics were utilized to explore the differences between various components of the process. The findings revealed a range of organizational, competitive, and developmental stressors. These stressors were predominantly appraised as harm or challenge, and anxiety and anger were the most prominent emotions that the parents experienced. Statistically, parents experienced greater anger in relation to competition (compared to organizational and developmental) stressors, whilst harm appraisal increased negative emotions, and challenge appraisal increased positive emotions. Findings also highlighted how parents used a number of mastery, internal regulation, and goal withdrawal coping strategies, which varied statistically in degrees of reported effectiveness. The contribution of these findings to the stress and coping literature and their applied implications are discussed.

*Keywords:* sport parents, stressors, appraisal, emotion, coping, coping effectiveness, mixed method.

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 Psychological stress transactions among athletes and coaches have been well documented in the sport psychology literature (e.g., Didymus, 2017; Didymus & Fletcher, 2012). Drawing predominantly on Lazarus and Folkman’s (1984) transactional stress theory, which defines stress as a transaction between the person and the environment, researchers have utilized both qualitative and quantitative methods to provide an understanding of the variety of stressors (i.e., competitive, organizational, personal) that athletes experience (e.g., Nicholls, Holt, Polman, & James, 2005), the ways in which they are appraised (i.e., harm/loss, threat, challenge, or benefit; Didymus & Fletcher, 2012; Doron & Martinent, 2017), the emotions experienced (Nicholls, Levy, Jones, Rengamani, & Polman, 2011; Moore, Vine, Wilson, & Freeman, 2012), and the strategies used to cope (see Nicholls & Polman, 2007 for a review). Researchers have also more recently started to explore the relationships and interactions between different components of psychological stress transactions (e.g., stressors, appraisal, emotion, and coping; Doron & Martinent, 2017; Gomes, Faria, & Vilela, 2017; Nicholls, Polman, & Levy, 2012).

 Although the stress and coping literature has predominantly focused on the experiences of athletes and coaches, researchers have offered initial understanding of the stressors associated with parenting in youth sport (Harwood & Knight, 2009a, 2009b; Harwood, Drew & Knight, 2010). Initiating this line of inquiry, Harwood and Knight (2009a, 2009b) explored the stressors that British tennis parents experienced at different stages of their child’s development. Data were collected during these studies via 123 open-ended surveys and 22 semi-structured interviews with tennis parents. Parental stressors centered on the organizational aspects of their child’s tennis (e.g., injuries, finances, time), competition demands (e.g., watching matches, players/opponents cheating, lack of effort), and developmental concerns (e.g., players’ future in tennis, transitional decisions regarding schooling). Taken together, these findings illustrate how parents’ experiences are influenced by the nature of the sport, the sport organizational system, and their childrens’ developmental stage, further supporting the notion that stress is a context-dependent and temporal process (Lazarus, 1999).

 Alongside this body of work, a small number of studies have explored the emotions that parents experience in youth sport settings (e.g., Goldstein & Iso-Ahola, 2008; Omli & LaVoi, 2012). For example, Omli and LaVoi (2012) identified the sources of anger for parents at youth sport competitions based on the assumption that anger fuels negative parental behavior at sporting events. Surveys with 773 parents of young athletes (aged 5 -19 years) revealed that 98% of participants had experienced anger during sport competitions and that the parents experienced stressors such as the unjust, uncaring, and incompetent behaviors of coaches, other parents, officials, and athletes. Whilst anger appears to be a particularly salient emotion experienced by parents in youth sport, research has also illustrated how parents often feel disappointment (Dorsch, Smith, & McDonough, 2009; Wiersma & Fifer, 2008) and embarrassment if their child is underperforming or behaving poorly (Dorsch et al., 2009; Harwood & Knight, 2009a, 2009b). Although these studies have offered an initial insight to emotions among sport parents, it is not clear how parents’ appraisals shaped their emotional responses or the types of appraisals that parents experience (Lazarus, 1999). Furthermore, beyond anger very little is known about the other emotions parents are likely to experience when watching their children compete (e.g., anxiety, dejection, happiness, excitement; Jones, Lane, Bray, Uphill, & Catlin, 2005). Developing a more robust body of evidence in this area is important if we are to understand the psychological processes that determine parents’ experiences of stress and, in turn, the parental behaviors that they exhibit and the support (or lack thereof) that they are able to offer to their children (cf. Lazarus, 1999; Webster-Stratton, 1990).

 Many different approaches to the classification of coping have been proposed in the literature to date (e.g., Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000; Lazarus & Folkman, 1984; Gaudreau & Blondin, 2004a; Skinner, Edge, Altman, & Sherwood, 2003) yet a consensus on how best to classify coping is yet to be reached. To address this challenge, Nicholls, Taylor, Carroll, and Perry (2016) reviewed the strengths and limitations of different classifications of coping and, during a meta-analysis, found support for a three-factor classification system (i.e., mastery, internal regulation, and goal withdrawal). Despite other approaches to coping classification holding promise, this three-factor approach appears useful for enhancing conceptual clarity and informing future research. Given the complex, challenging, and emotive nature of parenting in youth sport and the lack of consensus about how to classify coping, it is perhaps not surprising that a number of pertinent coping strategies (i.e., relaxation techniques, working with spouse, researching information) have been proposed within the literature (see Knight & Holt, 2013). However, despite broad recommendations for coping among parents, there is a lack of empirical research that has specifically set out to explore the coping strategies that parents use. One notable exception is a recent study by Burgess, Knight, and Mellalieu (2016) who used interpretive phenomenological analysis (IPA) to examine how parents (*n* = 7) of elite youth gymnasts cope with stressors. Their findings suggest that the parents encountered a variety of competitive, organizational, and developmental stressors and employed a range of coping strategies, including detaching, normalizing experiences, willingness to learn, and managing emotional reactions (Burgess et al., 2016). Importantly, this study provided an initial understanding of the coping strategies employed by sport parents and suggests that parents utilize multiple strategies in combination when attempting to cope with stressors. However, it is not clear which strategies are effective for parents. As Nicholls (2016) suggested, understanding more about coping effectiveness and the factors that influence coping (i.e., stressors, appraisals, and emotions) would assist applied researchers and practitioners to develop more effective and tailored interventions (see Thrower, Harwood & Spray, 2017).

 Considered collectively, the aforementioned studies have provided initial insights into different components of psychological stress transactions among sport parents. However, by focusing on the discrete components of transactions, these studies have overlooked the crucial associations between stressors, appraisals, emotions, and coping that have implications for parents’ behavior, health, and well-being (Lazarus, 1999; Lazarus & Folkman, 1984). In addition, extant literature almost entirely overlooks the concept of appraising among parents, which is problematic given the central role that it has in determining the outcomes of stress transactions. There is clearly a need to go beyond fragmented studies and give more holistic consideration to the entire stress process. As Harwood and Knight (2009a) suggested, “future research should pay closer attention to understanding the full stress and coping process in sport-parents to furnish practitioners, parents, and organizations with more precise intervention ideas, education, and skills” (p. 34). However, such studies represent a significant methodological challenge for researchers due to the contextual nature of stressors and the absence of measures that capture the complexity and individualistic nature of appraisals and coping strategies. With this in mind, Nicholls (2016) suggested that exploring the nuanced ways in which individuals cope with stressors might require more sophisticated and novel research designs. The purpose of this study was, therefore, to build on the aforementioned sport parent research and explore psychological stress in full among parents of competitive British tennis players. To achieve this, the current study used a mulitpart mixed method design to explore a series of interconnected research questions: (a) what are the prominent stressors that tennis parents experience? (b) how are these stressors appraised? (c) what emotions are associated with such stressors? (d) what coping strategies do parents use? (e) how effective are these coping strategies and (f) does perceived effectiveness vary as a function of stressor type, appraisal, and coping strategy used?

**Methodology and Methods**

**Research Design**

Drawing upon existing mixed methods designs (i.e., Morgan, 2013; Morse, 2003), the current study adopted a novel multipart concurrent mixed method design in which multiple qualitative and quantitative data were collected simultaneously within one study to answer the research questions. Specfically, both types of data were collected at the same time and were given equal emphasis and priority (i.e., QUAL + QUANT; Morse, 2003). In this study, we achieved this by using a cross-sectional online questionnaire where qualitative components were included to identify prominent stressors and coping strategies (Burgess et al. 2016; Harwood & Knight, 2009b) and quantitative elements captured primary appraisals, emotions and coping effectiveness (Hanton, Wagstaff, & Fletcher, 2012; Jones et al. 2005). Qualitative data was subsequently transformed (i.e., quantified) to allow for combined analyses to be conducted which in turn enabled the data to be merged and interpreted within both the results and discussion sections.

**Participants and Sampling** Following institutional ethical approval, homogeneous purposeful sampling was used to recruit parents of British junior tennis players (aged 5-18 years). An email invitation was sent from the national governing body (i.e., the Lawn Tennis Association) to parents of an estimated 1500 British tennis players who met the selection criteria (i.e., parents of children who regularly participate in tennis between the ages of 5-18 years). A total of 135 (41 men, 93 women, one parent chose not to report gender) parents responded to this invitation and agreed to participate in the study (9.0% response rate). The majority of the participants identified as being their child’s biological parent (97.77%), were in a relationship (94.77%), and had between 2 and 17 years (*M* = 6.88; *SD* = 3.07) experience as a tennis parent. Participants’ children were between the ages of 6 and 18 years of age (*M* = 12.29; *SD* = 2.52) and were predominantly male (65.18%).

**Procedure**

Those parents who responded favourably to the invitation were emailed a link to the online questionnaire where participant information for informed consent was provided. Parents who consented to participate at this point were then provided with an introductory guide containing instructions on how to complete the questionnaire. This guide was designed to enhance parents’ understanding of psychological stress, define key terms (e.g., stressors, primary appraisals, emotion, coping, and coping effectiveness), and provide worked examples. Once parents had read the introductory guide, they were asked to record up to five of the most prominent stressors that they had faced as a tennis parent. Participants were then asked to record the ways that they appraised each stressor in turn (i.e., harm/loss, threat, challenge, benefit; Lazarus, 1999) and the emotions associated with it (i.e., anger, dejection, anxiety, happiness, excitement; Jones et al., 2005). Finally, parents were asked to record up to three strategies that they used to cope with each stressor in an open-ended format and how effective they considered each strategy.

**Qualitative Data Collection**

 In line with previous research (i.e., Burgess et al., 2016; Harwood & Knight, 2009; Levy, Nicholls, Marchant, & Polman, 2009) a qualitative approach was used to identify the individual and subjective stressors that parents experienced and the ways in which they attempted to cope in their own words (Lazarus, 2000). Specifically, questionnaires with open-ended answer boxes were used to collect qualitative data about parents’ most pertinent stressors and associated coping strategies (Harwood & Knight, 2009). Parents were given specific instructions about what to include in each open-ended box. For example, parents were asked to: “record the coping strategies that you used in response to the stressor using the boxes below. Each coping strategy should go in a separate box. You can enter one or more (up to three) coping strategies depending on what you did to cope with that stressor”. Each open-ended question box offered unlimited space and parents were encouraged to provide as much depth and detail as possible.

**Quantitative Data Collection**

***Primary appraisals****.* Drawing on the procedures outlined by Hanton and colleagues (2012), parents in the current study were asked to self-report whether they appraised each stressor as harm/loss (i.e., damage to goal commitment, values, or beliefs that has already occurred), threat (i.e., future damage), challenge (i.e., anticipated gains), or benefit (i.e., gains that have already occurred) (Lazarus, 1999) . Parents were asked to select the most relevant appraisal for each stressor. It is important to note here that the current study did not assess secondary coping as it is not coping per se, but an evaluation of the coping options available to an individual (Lazarus, 1999; Nicholls, 2016).

***Emotion****.* Based on the Sport Emotion Questionnaire (SEQ; Jones et al., 2005), which has demonstrated validity and internal consistency in a number of sport settings, participants were asked to record how anxious (i.e., uneasy, tense, nervous, apprehensive, or anxious), dejected (i.e., upset, sad, unhappy, disappointed, or dejected), excited (i.e., exhilarated, excited, enthusiastic, or energetic), happy (i.e., pleased, joyful, happy, or cheerful), and angry (i.e., irritated, furious, annoyed, or angry) they felt in response to each documented stressor. Specifically, participants were asked to record the extent to which they experienced each emotion on a 5-point rating scale of zero (not at all), one (a little), two (moderately), three (quite a bit), and four (extremely).

***Coping effectiveness.*** A coping effectiveness score was used to understand whether the strategies employed were perceived to be successful in alleviating the negative outcomes of stressors. In accordance with previous studies (Didymus & Fletcher, 2012; Nicholls, Polman, Levy, Taylor, & Cobley, 2007; Levy et al., 2009), participants were asked to rate on an 11 point scale (0-10) how effective they perceived each individual coping strategy to be. For the purpose of this study, a perceived coping effectiveness score of zero was considered to be completely ineffective, a score of five was moderately effective, and a score of 10 was considered completely effective.

**Data Analyses**

***Qualitative data.*** Qualitative data from the online open-ended questionnaire were analyzed using an abductive (i.e., inductive and deductive) approach to hierarchical content analysis. This approach has been applied elsewhere in the literature (e.g., Didymus, 2017) to encourage the creation of new ideas (i.e., inductive logic) whilst also applying theoretical frameworks or lenses to participants’ experiences (i.e., deductive logic). Although inductive reasoning was used to guide the initial stages of analysis, existing stressor (Harwood & Knight, 2009a, 2009b) and coping classifications (Nicholls et al. 2016) were subsequently and deductively used to promote consistency in the terminologies that are applied within published literature. In line with the procedures outlined by Sparkes and Smith (2014), qualitative data were read and re-read to promote content familiarity and each open-ended response was labelled as a lower order theme. Following this, ideas that represented stressors or coping strategies reported by parents were grouped together to create meaningful higher order themes and catagories. Next, themes were crosschecked and thoroughly re-examined by the second named author and then confirmed by the first named author (Sparkes & Smith, 2014). Finally, tables were produced to reflect the hierarchical nature of the chosen method of analysis, including the frequencies of each cited stressor or coping strategy.

***Quantitative data*.** Quantitative data analysis started by calculating the overall frequency with which each type of appraisal was reported (i.e., harm/loss, threat, challenge, benefit). Providing sufficient power (Clark-Carter, 2010), the total dataset for emotions was *n* = 342, and for coping effectiveness *n* = 646. Descriptive statistics (i.e., means and standard deviations) for the emotions experienced (i.e., anxiety, dejection, happiness, excitement, anger) and coping effectiveness were then calculated. Data were screened for parametric assumptions and detected the presence of outliers in happiness and excitement variables. Accordingly, when analyzing these data, we conducted sensitivity analysis without these extreme cases (i.e., the removal of *n* = 4 each for happiness and excitement). These exclusions did not materially change the pattern of results. The main and interaction effects were the same, whilst two additional pairwise comparisons emerged as significant (we highlight these in the results section). To complement the descriptive data, differences in emotions experienced as a function of stressor category and appraisal were explored using a 3 (stressor: competition vs. organizational vs. developmental) X 3 (appraisal: harm vs. threat vs. challenge) multivariate analysis (MANOVA). Following this, differences in coping effectiveness as a function of stressor category, appraisal, and coping strategy were assessed using a 3 (stressor: competition vs. organizational vs. developmental) X 3 (appraisal: harm vs. threat vs. challenge) X 3 (coping strategy: mastery vs. internal regulation vs. goal withdrawal) analysis of variance (ANOVA). Significant tests were followed up with Bonferroni adjusted pairwise comparisons.

**Results**

In accordance with guidance from Lazarus (1999), the results section is organized by the components of psychological stress that were examined to provide a full and comprehensive view of the data. Data relating to stressors are presented first, followed by primary appraisals, emotions, coping strategies, and coping effectiveness. The final sub-sections of the results explore the statistical differences in emotions experienced and coping strategy effectiveness.

**Stressors** Data analysis generated three general dimensions of parental stressors: (a) organizational, (b) competitive, and (c) developmental. These three dimensions contained a total of 21 higher order themes (see Table 1), 58 lower order themes, and 342 individual raw data themes or stressors (eight stressors were not grouped into lower and higher order themes or dimensions due to a lack of relevance or coherence within the responses).

[Table 1 here]

**Competition Stressors.** Eight higher order themes (see Table 1), 20 lower order themes, and 155 raw data themes were associated with junior tennis competitions. Specifically, ‘children’s opponent’ (24.44%) was the most prominent cause of stress for parents during competitions and, in particular, ‘bad line calls and cheating’ (17.78%) and ‘aggressive or inappropriate behaviour’ (6.67%). As one parent explained: “I find it difficult watching the behavior of my daughter’s opponent (i.e., tantrums, persistent poor calls) and the effect this had on my daughter” (Parent 5). Parents also cited their own ‘child’s behaviour’ (23.70%) and, to a lesser extent, their ‘child’s performances’ (14.81%) as prevalent stressors. The following quote from one mother illustrates how her daughter ‘not playing to her potential’ (13.33%) was a significant stressor:

My daughter is a technically very able player, quite athletic, and plays really well in her 1-1 lessons and squads. Then she gets onto court in a tournament, playing against someone who is clearly a casual, 2 hour-a-week player (not 10 hours like my daughter!), and my daughter plays "down", doesn't use her technique, and loses. I wonder if it is even worth her putting all the hours training, if that is what happens in tournaments! (Parent 112)

The presence of ‘other parents’ (15.56%) during competitions was another stressor and included lower order themes such as ‘bad behavior/attitude’ (6.67%), ‘interfering with play’ (5.19%), and ‘intimidating and aggressive behavior’ (3.70%). Parents reported specific examples such as: “Parents of other players providing guidance beyond acceptable encouragement” (Parent 111) and “abusive parents who shout at your child during the match” (Parent 65) as pertinent stressors associated with other parents. In addition, parents’ self-reported stressors that related to ‘watching a match’ (14.81%), particularly if they thought their child should win or would lose badly: “I find watching my son play a stressful experience, especially if I know the score...” (Parent 65). Parents also reported the ‘outcome of matches’ (11.58%) as a stressor, especially their ‘child losing’ (2.22%), their ‘child’s poor reaction to the match’ (2.96%), or ‘consoling child/helping them to cope’ (5.19%). For instance, one parent stated: “If my child doesn't win/play well he gets very upset and is sometimes physically sick. He thinks he's letting everyone down ...himself/me/coach” (Parent 53). Less frequently cited competition stressors included their ‘children’s psychological readiness to perform’ (6.67%) and ‘poor refereeing’ (2.96%).

**Organizational stressors.** Six higher order themes (see Table 1), 25 low order themes, and 135 raw data themes referred to organizational stressors associated with children’s tennis involvement. A substantial number of participants mentioned ‘finances’ (25.19%) and particularly the ‘cost of coaching, tournaments, and travel’ (21.48%) as a source of stress. As one parent stated: “Finance. The cost of lessons, squads, competitions, and travelling to competitions” (Parent 11). Similarly, another parent added: “Financial - we have not had a family holiday for 2 years since my daughter started competing at a higher level!” (Parent 122). A lack of ‘time’ (22.22%) was also a stressor for a large number of parents and, in particular, the ‘lack of family and partner time’ (9.63%) as demonstrated in the following quotes: “Lack of time. Tennis competitions (event time, travelling, and recently finding them) taking up too much family time” (Parent 11) and “competitions that are over 2 or more days present a constant problem for a family with more than 1 child, particularly where the other child does not play competitive tennis - it splits the family and creates rifts” (Parent 84). In terms of time related stressors, a small number of parents also appeared to be concerned about ‘work-tennis role conflict’ (2.96%) and the effect of ‘unequal time spent on siblings’ (2.96%), and resented the time spent on tennis as it negatively impacted their own ‘social lives and personal time’ (2.22%). One parent admitted: “I resent the way that the time (and money) involved in travelling to tennis squads and tournaments means my son is also put first leaving little time for anything I would like to be doing, and little money for anything else” (Parent 36).

Beyond the financial and time commitments of junior tennis participation, parents identified ‘coaching and training’ (16.30%) and the ‘organizing body’ (14.48%) as stressors. Lower order themes included the ‘lack of recognition and support’ (i.e., 5.93%), ‘pressures from the rating system’ (4.44%), ‘problems with talent identification system’ (2.22%), and ‘general disorganization and management issues’ (2.22%) as organizational stressors. The following quote captures parents’ frustration with the current rating system:

 Too much emphasis for years on ratings, often non-reflective of ability, and until recently LTA refusal to acknowledge this. The LTA can't see how the system is 'abused' by some players, and when you get your rating behind (e.g., through injury and player withdrawals) virtually no opportunity to catch up (Parent 14).

Other organizational stressors related to ‘tournaments’ (12.59%), and specifically ‘issues with entry, draws and seedings (4.44%), the ‘travel’ required (3.70%), ‘poor organization’ (2.22%), ‘lack of umpires’ (1.48%), and ‘general scheduling’ (1.48%). As one parent wrote: “Referees being poorly organized, not getting players on, leaving long times in between matches, making mistakes in informing both players about starting times, not being friendly and helpful” (Parent 68). A small number of parents made reference to ‘injury’ related stressors (6.67%) and, in particular, ‘overuse injuries’ (3.70%). As one parent wrote: “My child has been constantly injured as a result of the amount of tennis training he has being taking part in” (Parent 41). Other parents were ‘fearful of their child getting injured’ (1.48%) and felt they ‘lacked own knowledge to support’ their child if they did get injured (1.48%).

**Developmental stressors.** Six higher order themes (see Table 1), 11 lower order themes, and 44 raw data themes referred to stressors associated with children’s development both within and outside of tennis. The most frequently cited developmental stressor within this dimension was their ‘child’s progress’ within tennis (16.30%). Specifically, parents referenced ‘selection pressures’ (6.67%), ‘progression relative to peers’ (4.44%), ‘tennis rating’ (2.96%), and a ‘lack of effort in training’ (2.22%) as lower order stressors. The following quote captures the concerns of parents in relation to these developmental factors: “I feel stressed about trying to keep my son's ratings/rankings up with his peers/coaches’ expectations” (Parent 115). Furthermore, parents felt that ‘tennis decisions’ (7.41%) in relation to ‘coaches’ (2.96%), ‘tournaments’ (2.98%), and ‘training’ were key stressors (1.48%). As one parent wrote:

I find it difficult to have to make choices and decisions about which tournaments my son should play and balancing out costs and aims from competition (i.e., good tough matches vs. easy points, not risking ratings losses, keeping up with other players who can travel further or fit in more tournaments vs. working on own goals). (Parent 36)

A small number of parents were concerned about the impact that tennis has on their ‘child’s education and social development’ (3.70%). As one parent wrote: “[Child’s name] spends 14 hours a week doing sport outside school (tennis and football). I worry that this has an impact on both his school and his social development” (Parent 88). Beyond children’s development, some parents also reported stressors regarding their ‘child’s future’ in tennis (2.22%), the ‘impact of tennis on other hobbies’ (1.48%), and their ‘child’s overall wellbeing and happiness’ (1.48%).

**Primary Appraisals**

Of the total 342 separate self-reported stressors, 115 (33.65%) were appraised as a harm/loss, 113 (33.04%) were appraised as a challenge, 105 (30.70%) were evaluated as a threat, and 9 (2.63%) were evaluated as a benefit. Table 2 illustrates differences in the way competition, developmental, and organizational stressors were appraised. The results suggest that organizational stressors were most commonly appraised as harmful (40.00%) whilst threat appraisals were most commonly experienced in response to both developmental (43.18%) and competition (35.55%) stressors. Interestingly, challenge appraisals were the second most frequently used appraisal across all general stressor dimensions whilst benefit appraisals were rarely made irrespective of the nature of the stressor.

[Table 2 here]

**Emotions**

Parents reported moderate levels of anxiety and anger, low levels of dejection, and very low levels of excitement and happiness in relation to the stressors recalled (see Table 2). Due to low numbers, stressors categorized as other (*n* = 8) and appraisals categorized as benefit (*n* = 9) were not included in analyses, resulting in a sample of 327 (two of the other stressors were appraised as benefit). Therefore, the means reported in text vary compared to Table 2, which includes the full stressor, appraisal, and emotion profile. A 3 (stressor) X 3 (appraisal) MANOVA indicated a significant main effect for stressor, Wilks’ *Λ* = .91, *F*(10, 628) = 3.09, *p* = .001, ηp2 = .05, and appraisal, Wilks’ *Λ* = .88, *F*(10, 628) = 4.03, *p* < .001, ηp2 = .06, on experienced emotion. There was a non-significant interaction between stressor and appraisal, Wilks’ *Λ* = .94, *F*(20, 1042) = 1.02, *p* = .436, ηp2 = .02. Regarding the stressor categories, follow up comparisons indicated greater anger in competition stressors (*M* = 2.43 ± 1.42) compared to both developmental (*M* = 1.33 ± 1.22, *p* < .001, CIs: .47, 1.65) and organizational stressors (*M* = 1.95 ± 1.32, *p* = .006, CIs: .12, .89). In addition, in the analyses with the extreme cases removed greater anger was reported in organisational compared to developmental stressors (*p* = .037, CIs: .03, 1.22). Other comparisons were non-significant. Regarding the appraisal categories, follow up comparisons indicated greater dejection (*M* = 2.15 ± 1.40, *p* = .005, CIs: .18, 1.28) and anger (*M* = 2.46 ± 1.43, *p* = .003, CIs: .21, 1.31) in harm appraisal compared to challenge (*M*dejection = 1.64 ± 1.28, *M*anger = 1.75 ± 1.35) appraisal. In addition, in the analyses with the extreme cases removed greater dejection was reported in harm appraisal compared to threat (*M* = 1.67 ± 1.33) appraisal (*p* = .033, CIs: .04, 1.12). There was also greater excitement (*M* = .82 ± 1.04, CIs: -1.08, -.33) and happiness (*M* = .70 ± 1.05, CIs: -.91, -.23, both *p* < .001) in challenge appraisal compared to harm (*M*excitement = .33 ± .80, *M*happiness = .28 ± .65) and threat (*M*excitement  = .67 ± .95, *p* = .038, CIs: -.70, -.02; *M*happiness = .39 ± .74, *p* = .002, CIs: -.75, -.14) appraisal. Other comparisons were non-significant. In sum, competitive stressors elicited greater anger compared to organizational and developmental stressors. Further, stressors appraised as harm elicited greater negative emotions (i.e., dejection and anger, but not anxiety) compared to challenge appraisals, while stressors appraised as a challenge elicited greater positive emotions (i.e., excitement and happiness) compared to both harm and threat appraisals.

**Coping Strategies** A total of 653 individual coping strategies were reported by parents, which were categorized into 91 lower order themes, 21 higher order themes, and three global coping dimensions (see Table 3). Seven entries were not classified because no strategies were reported as being used. Global coping dimensions included: (a) mastery coping; (b) internal regulation; and (c) goal withdrawal coping.

[Table 3 here]

 **Mastery coping.** 11 higher order themes (see Table 3), 54 lower order themes, and 374 coping strategies were categorized as mastery coping (i.e., parents attempting to take control of a stressful situation and eliminate the stressor; Nicholls et al., 2016). The most frequently cited mastery coping strategy by parents was ‘communicating with child’ (48.89%), which primarily included ‘discussing the situation with their child’ (18.52%). As one parent explained: “Constant talking to him after matches to help deal with these emotions and try to make him see that if he carried on trying then matches can be turned round” (Parent 128). Other lower order themes included parents ‘providing advice and guidance’ (9.63%) before matches and ‘comfort and reassurance’ (9.63%) after defeats. For instance, one parent explained:

Prior to the match I try and get him to realize that there will always be dodgy [line] calls, that he needs to focus on his own game and realize that he is handing the game to the other child if he lets it get to him. He needs to challenge the calls and call the referee over if it is too bad (Parent 53).

In addition to communicating with their child, parents regularly used ‘time management’ (24.44%) as a higher order coping strategy that consisted of ‘planning, logistics, and being organized’ (14.81%), ‘selective tournament entry’ (6.67%), ‘sharing commitments with their partner’ (4.44%), and ‘scheduling time with siblings’ (4.44%). Similarly, parents also used ‘financial management’ (18.52%) as a coping strategy and, particularly, ‘budgeting’ (13.33%) as one mother self-reported:

Looking to set up a small business alongside part time work so we have more money coming in and still be flexible for coaching and tournaments. But I will miss out on seeing my daughter play and the tournaments will be down to her dad (Parent 122).

‘Information seeking’ (26.67%) was another frequently cited coping strategy, with a number of parents ‘discussing situations with their child’s coach’ (17.78%) as well as other key stakeholders (i.e., physiotherapists, other parents, organizers, child’s school, strength and conditioning coach). Interestingly, some parents also used coping strategies such as ‘managing their child’s tennis progress and development’ (16.30%). This included ‘scheduling/enforcing breaks from tennis’ (6.67%), ‘changing child’s coach/training center’ (4.44%), and ‘employing sport psychologists’ (3.70%) as explained in the following quote:

Engaged external professional help [sport psychologist] for our child and ourselves, utilize preparation routines and put our child at the center of the solution and recognize it is not a quick fix, give them the mechanisms and create an environment that will support them to help themselves supported by a team including ourselves as parents (Parent 110).

Less frequently cited higher order coping strategies included, ‘changing their parenting behavior’ (14.81%), ‘reducing the negative impact of others’ (8.15%), ‘involving the referee’ (8.15%), ‘preparation’ (6.67%), ‘problem solving’ (5.93%), and ‘overseeing their child’s development’ (4.44%).

 **Internal regulation.** Two hundred and twenty nine coping strategies, 26 lower order themes, and seven higher order categories (see Table 3) were characterized as referring to internal regulation (i.e., attempting to manage the internal responses to stress; Nicholls et al. 2016). Over a third of parents used ‘cognitive reappraisal’ strategies (34.07%), which referred to: ‘placing the stressor in perspective’ (11.11%), ‘rationalizing the situation’ (10.37%), ‘focusing on the positives’ (10.37%), ‘focusing on long-term development’ (9.63%), or ‘focusing on the benefits of tennis participation’ (5.19%). The following quote illustrates this finding and how parents cope by focusing on the benefits of tennis participation:

I think about how much I love my children and how I want them to have as many different opportunities as possible. I think about the positive impact sport has had (and continues to have) on their self-esteem, confidence, motivation, determination, and discipline. They are aware of their bodies and how to stay healthy. I think about how sport has encouraged them to take risks, to try things, to learn how to cope with getting things wrong. They have benefitted from interacting with a wider circle of people through sport. I consider that the time I will get with them (of them wanting me around) is relatively short and I rationalize that I have plenty of time to treat myself later! Also, when I stop and add everything up and really think about it, I always come to the conclusion that even if I had more money I would spend it on them anyway! (Parent 11).

Parents also regulated their internal responses to stressors by ‘seeking emotional support’ (19.26%), which consisted mainly of ‘talking about the situation with other parents’ (8.15%) or their partner (7.41%). Other higher order themes included ‘behavioral avoidance strategies’ (19.26%), which included ‘watching the match with a limited view/further away’ (6.67%), ‘avoiding other parents’ (5.93%), and ‘temporarily walking away’ (11.85%). One parent explained why she watches with a limited view: “I sit so there is an obstruction in the way of the court to limit my view - again this stops me living every point” (Parent 50). Parents also used ‘emotional regulation’ (14.07%) coping strategies such as ‘trying to remain calm’ (8.89%) and ‘breathing techniques’ (5.19%) as one parent disclosed: “If I go [to tournaments/matches] I try to take deep breaths and can't wait for it to be over and go home” (Parent 87). Less frequently cited higher order coping strategies included ‘distraction techniques’ (9.63%), ‘cognitive avoidance’ (8.89%), and ‘acceptance’ (6.67%). For instance, one parent explained how he charts matches (i.e., recording match statistics) as a distraction technique: “I have started charting matches for something to focus on and then share stats with him sometime after match as part of conversation about how he felt and what the stats say” (Parent 130).

 **Goal withdrawal.** Two higher order themes (see Table 3), nine lower order themes, and 43 individual coping strategies referred to goal withdrawal coping strategies. Goal withdrawal strategies were defined as parents ceasing efforts to achieve a goal. Specifically, ‘behavioral disengagement’ (20.74%) consisted of lower order themes such as ‘avoiding watching matches’ (9.63%). As one parent admitted: “I try to avoid taking him to matches and hope my husband will take my son. It actually makes me feel sick” (Parent 87). Other lower order coping strategies included ‘walking away from the match’ (7.41%) as one parent explained:

I removed myself from the match and walked away to get a coffee. [I was] angry and also feeling very concerned for my daughter who had done everything she is asked to when this happens but who was basically being bullied and cheated on court - disgraceful! Such inconsistency from official to official from tournament to tournament (Parent 3).

In a small number of cases, parents actually ‘stopped their child playing tennis’ (1.74%). For instance, one parent wrote: “I supported my son but asked him to stop playing. The pressure was painful to watch and no one cares” (Parent 129). A small number of parents also attempted to cope by ‘venting their emotions’ (8.89%). This higher order category was made up of lower order themes such as ‘arguing’ (1.47%), ‘complaining’ (6.67%), and ‘crying’ (0.74%).

**Coping Effectiveness**

 **Mastery coping effectiveness.** As seen in Table 3, within the mastery coping dimension (*n =* 374), the most effective higher order coping strategy was ‘managing their child’s development and progress’ (*M =* 7.41 ± 1.84), which included moderately effective lower order strategies such as ‘changing coaches/centers’ (*M =* 7.83 ± 1.60), ‘scheduling and enforcing a break from tennis’ (*M =* 7.00 ± 2.26), and ‘employing a sport psychologist’ (*M =* 6.83 ± 1.17). In addition, ‘reducing the negative impact of others’ (*M =* 6.93 ± 1.71), ‘time management’ (*M =* 6.59 ± 2.03), and ‘overseeing their child’s overall development’ (*M =* 6.75 ± 2.25) were perceived as moderately effective higher order strategies. Other higher order strategies such as ‘communicating with their child’ (*M =* 5.93 ± 2.30) included a combination of moderately effective (e.g., ‘providing positive feedback’ (*M =* 7.30 ± *=* 1.25) and ineffective lower order strategies (e.g., ‘confronting and discussing behavior’ (*M =* 3.50 ± *=* 2.83). Similarly, within the ‘changing parenting behavior’ (*M =* 5.72 ± 2.73) higher order theme, ‘allowing child to make own choices’ (*M =* 7.80 ± 1.92) was moderately effective, whilst ‘punishing child’s behavior’ (*M =* 4.71 ± 2.50) was considered to be a moderately ineffective strategy. ‘Involving the referee’ (*M =* 4.64 ± 2.73) and ‘preparation’ (*M =* 4.50 ± 2.92) were considered to be the most ineffective mastery higher order coping strategies.

**Internal regulation coping effectiveness.** Turning attention towards internal regulation coping strategies (*n =* 229), ‘behavioral avoidance’ (*M =* 6.62 ± 2.15) was considered to be the most effective higher order strategy, with lower order strategies such as ‘avoiding contact with other parents’ (*M =* 7.58 ±1.68) and ‘watching the match with a limited view/further away’ (*M =* 7.33 ± 1.66) considered as moderately effective. Another higher order theme ‘cognitive reappraisal’ (*M =* 6.41 ± 2.08) was perceived as moderately effective, although lower order themes such as ‘focusing on the benefits of tennis participation’ (*M =* 7.25 ± 1.16) and ‘focusing on processes not outcomes’ (*M =* 7.33 ± 1.21) were perceived as moderately effective. Similarly, ‘seeking emotional support’ (*M =* 6.15 ± 1.68), ‘emotional regulation’ (*M =* 6.08 ± 1.85), ‘acceptance’ (*M =* 6.12 ± 2.74) and ‘distraction’ (*M =* 6.47 ± 2.20) were moderately effective higher order strategies and ‘distraction with another task during a match’ (i.e., charting, reading, answering emails) was considered as a particularly effective lower order theme (*M =* 7.11 ± 1.96). In contrast, cognitive avoidance (*M =* 4.54 ± 2.44) was perceived to be moderately ineffective.

**Goal withdrawal coping effectiveness.** Higher order goal withdrawal strategies (*n =* 43) such as ‘behavioral disengagement’ (*M =* 5.31 ± 3.05) were considered moderately effective. However, ‘venting emotions’ (*M =* 4.00 ± 2.85) was perceived as a relatively ineffective coping strategy. Parents also considered ‘not watching the match’ (*M =* 4.50 ± 3.06) to be a moderately ineffective strategy and ‘complaining’ (*M =* 3.92 ± 3.06) was perceived as the least effective coping strategy within this coping dimension.

[Table 4 here]

**Overall coping effectiveness.** Overall, the 646 coping strategies were considered by parents to be moderately effective (*M =* 6.10 ± 2.32). Due to low numbers, we did not include benefit appraisals (*n* = 15) in statistical analyses, resulting in a sample of 631 strategies. Therefore, the means reported in text vary compared to Tables 3 and 4. A 3 (stressor) X 3 (strategy) X 3 (appraisal) ANOVA indicated a non-significant main effect for stressor, *F*(2, 606) = .85, *p* = .430, ηp2 = .003 and appraisal, *F*(2, 606) = 1.69, *p* = .186, ηp2 = .01, on effectiveness. A significant main effect for strategy, *F*(2, 606) = 6.01, *p* = .003, ηp2 = .02, indicated greater effectiveness for mastery (*M* = 6.20 ± 2.27) and internal regulation (*M* = 6.15 ± 2.03) strategies compared to goal withdrawal (*M* = 4.77 ± 2.98). In terms of the two-way interactions, there was: (i) a significant interaction between stressor category and appraisal, *F*(4, 606) = 3.69, *p* = .006, ηp2 = .02; (ii) stressor category and coping strategy, *F*(4, 606) = 3.69, *p* = .006, ηp2 = .02; and (iii) a non-significant interaction appraisal and coping strategy, *F*(4, 606) = .27, *p* = .898, ηp2 = .002. The three-way interaction between stressor category, appraisal, and coping strategy was non-significant, *F*(6, 606) = 1.57, *p* = .154, ηp2 = .02.

The two interaction effects were followed up with adjusted pairwise comparisons. First, regarding stressor category and appraisal: (i) challenge, but not harm or threat, appraisals were managed more effectively for competition stressors (*M* = 7.20 ± 1.97, *n* = 96) compared to organizational (*M* = 6.72 ± 2.02, *n* = 85), stressors only (*p* = .035, CIs: .11, 3.98); and (ii) competition, but not organizational or developmental, stressors were managed more effectively following challenge appraisals (*M* = 7.20 ± 1.97, *n* = 96) compared to both harm (*M* = 5.24 ± 2.43, *p* = .001, CIs: 1.31, 3.38, *n* = 95) and threat (*M* = 5.26 ± 2.17, *p* < .001, CIs: .89, 2.91, *n* = 104) appraisals.

Second, regarding stressor category and coping strategy: (i) mastery, but not internal regulation or goal withdrawal, coping was more effective for organizational (*M* = 6.60 ± 2.09, *n* = 160) compared to competition (*M* = 5.83 ± 2.43, *n* = 160), stressors only (*p* = .001, CIs: .28, 1.44); and (ii) organizational, but not competitive or developmental, stressors were managed more effectively by mastery (*M* = 6.60 ± 2.09, *p* = .001, CIs: 1.14, 5.34, *n* = 160) and internal regulation (*M* = 6.21 ± 2.18, *p* = .004, CIs: .77, 5.06, *n* = 82) strategies compared to goal withdrawal (*M* = 4.38 ± 2.90, *n* = 13).

To summarize, irrespective of stressor category or appraisal, mastery and internal regulation coping strategies were more effective than goal withdrawal. Furthermore, with challenge appraisal, competition stressors were managed more effectively than organizational but not developmental stressors. Within competition, but not organizational or developmental stressors, challenge appraisal was linked to more effective stressor management than both harm and threat appraisal. Mastery coping, but not internal regulation or goal withdrawal, was more effective for organizational stressors compared to competition stressors, but not developmental stressors. Organizational, but not competition or developmental, stressors were managed more effectively through mastery and internal regulation strategies compared to goal withdrawal.

**Descriptive Relationships Between Stressors, Emotions, Coping, and Coping Effectiveness**

The current study also provides initial insights into the descriptive relationship between parents’ stressors, emotions, coping strategies, and coping effectiveness (*n =* 646). Focusing first on the relationship between emotions, coping, and coping effectiveness, mastery coping strategies (*n =* 374) were considered to be the most effective coping strategy and were used when parents reported moderate levels of anxiety, low levels of dejection and anger, and very low levels of excitement and happiness (See Table 5). Parents who used internal regulation strategies (*n =* 229) experienced moderate levels of anxiety, low levels of anger, and dejection, and very low levels of excitement and happiness. In contrast, parents who used goal withdrawal strategies (*n =* 43) reported high levels of anxiety, moderate levels of anger and dejection, and very low levels of excitement and happiness (See Table 5).

[Table 5 here]

Table 5 also illustrates the descriptive relationships between competition, developmental, and organizational stressors, emotions, coping strategies, and coping effectiveness. For example, mastery (*n* =164), internal regulation (*n* = 113) and goal withdrawal (*n* = 28) coping strategies were used when parents experienced moderate levels of anxiety and anger, low levels of dejection and anger, and very low levels of excitement and happiness in response to competition stressors. Of these strategies, internal regulation was considered to be most effective. Mastery (*n* = 52) and internal regulation (*n* = 33) coping strategies were used when parents experienced moderate levels of anxiety; low or very low levels of dejection, excitement, and anger; and very low levels of happiness when facing developmental stressors. Goal withdrawal strategies (*n* = 2) were used when parents experienced high level of anxiety and dejection and moderate levels of anger. Mastery coping strategies were prefered when parents reported low levels of anxiety, dejection, excitement, and anger and very low levels of happiness when facing organizational stressors. Internal regulation strategies were used when parents reported moderate levels of anxiety and anger, low levels of dejection, and very low levels of excitement and happiness. Finally, goal withdrawal strategies were used when parents experienced high anxiety and anger, medium levels of dejection, and very low levels of excitement in relation to organizational stressors. Mastery coping strategies were the most effective way of coping with both organizational and developmental stressors.

**Discussion**

The purpose of this study was to build on the existing sport parent research through a thorough investigation of psychological stress among parents of competitive British tennis players. As such, the current study extends existing research on the stressors that parents experience (Burgess et al., 2016; Harwood & Knight, 2009a, 2009b), the way that stressors are appraised, the range of emotions experienced (Omli & LaVoi, 2012), and the coping strategies employed (Burgess et al., 2016) by examining the full transactional stress process. The discussion that follows outlines the contributions that the findings make to scientific understanding within each of these areas and integrates the qualitative and quantitative elements of this study to provide novel insights to psychological stress among parents. We also offer a number of recommendations for applied practitioners, coaches, and national governing bodies.

Focusing initially on the stressors that tennis parents experience, the study provides the largest investigation (*n =* 135) to date of the situations that British tennis parents appraise as taxing or exceeding their resources. In line with previous studies (i.e., Burgess et al., 2016; Harwood & Knight, 2009a, 2009b; Harwood et al., 2010), parents in the current study reported experiencing a wide range of competition, organizational, and developmental stressors. The consistency of these findings across various youth sport contexts (i.e., tennis, gymnastics, soccer) is concerning because research within developmental psychology has shown that parents who experience a greater numbers of stressors consistently display more negative parenting styles and behaviors (e.g., higher levels of disciplinary punishment and harsher interactions with their children; see Knight, Holt, & Tamminen, 2009). Furthermore, these studies suggest that limited progress has been made within the past decade to reduce the number of stressors that British tennis parents experience in youth sport (see Harwood & Knight, 2009a, 2009b). Although recent headway has been made by the Lawn Tennis Association to address competition-related stressors (see “Parents in Tennis: How to Support Your Child”, 2017), there clearly still remains a need for policy level changes to reduce some of the organizational and developmental stressors (i.e., finances, time, tournament structure, ratingsystem; education-related concerns) that place additional demands on parents and are difficult to address through educational approaches alone (Thrower, Harwood, & Spray, 2016).

Beyond identifying the demands that parents face in British tennis, the current study was the first to explore parents’ primary appraisals of self-disclosed stressors. Findings highlight that harm/loss, challenge, and threat appraisals were most common when parents evaluated the significance of stressors in relation to goal commitments, values, and beliefs (Lazarus, 1999), irrespective of the nature of the stressor (i.e., competition, organizational, developmental). However, it is important to note the high frequency of negative appraisals (i.e., harm/loss or threat) in the current study given the subsequent implications this has for parents’ experiences within youth sport contexts (a point we will address in more detail later). Interestingly, research with athletes has found positive associations between threat appraisals and mastery avoidance, performance approach, and performance avoidance goals as well as challenge appraisals and mastery goals (e.g., Adie, Duda, Ntoumanus, 2010; Nicholls, Perry, & Calmeiro, 2014). In addition, Ntoumanis, Edmunds, and Duda (2009) suggested that individuals are more likely to appraise demands or constraints on goals as a challenge rather than a threat or with a sense of harm/loss when they feel autonomous and competent during a stressful encounter. Taking these points into consideration, it is possible that working with parents to alter their beliefs about what constitutes success in youth sport, develop more task oriented achievement goals for their child, and strengthen perceptions of parenting competence may increase the chance of parents making more adaptive primary appraisals (i.e., challenge or benefit; see Thrower et al., 2017). From a theoretical perspective, such approaches are likely to be particularly effective when combined with efforts to optimize parents’ secondary appraisals (i.e., evaluation of their coping options; Lazarus, 1999; Lazarus & Folkman, 1984).

The present study was also the first to examine the range of emotions (i.e., pleasant and unpleasant) that arise during sport parents’ stress transactions. Findings add to existing sport parent research (i.e., Omli & LaVoi, 2012) by highlighting that parents experienced greater anger in relation to competition but not organizational or developmental stressors. Consistent with Lazarus’ (1999) suggestions, the findings presented here also illustrate that harm appraisal generated greater negative emotions (i.e., dejection and anger, but not anxiety) compared to challenge appraisal, whilst challenge appraisal generated greater positive emotions (i.e., excitement and happiness) compared to both harm and threat appraisal. These findings are consistent with those identified with athletes (see Nicholls et al., 2011; Nicholls et al., 2012) and illustrate how primary appraisals play a crucial role in shaping the subsequent emotional responses and experiences of sport parents. Futhermore, it is interesting to note that developmental stressors (in comparison to organizational and competitive stressors) in the current study were most frequently appraised as a threat (i.e., future damage to goal commitment, values, or beliefs) and associated with the high levels of anxiety. Such findings suggest that the temporal nature of stressors (i.e., past vs. future) may influence not only the appraisal (i.e., damage already occurred vs. future damage) but also the specific type of emotion (e.g., anxiety, anger, dejection, excitement, happiness) sport parents experience.

Building on these points, our findings suggest that the emotions parents experience influence the coping strategies they select. For instance, parents in the current study tended to use internal regulation or mastery coping strategies when they experienced moderate to low levels of unpleasant emotions (i.e., anxiety, anger, and dejection) and goal withdrawal strategies when they experienced moderate to high levels of unpleasant emotions (i.e., anxiety, anger, dejection). From a practical perspective, these findings suggest that reducing levels of unpleasant emotions (e.g., by encouraging gain, rather than loss, appraisals) may enable parents to select more adaptive coping strategies (i.e., mastery or internal regulation). Although the mechanisms influencing this proposed relationship are not fully understood, it may be that experiencing less unpleasant emotions (particularly anxiety) reduces cognitive interference and enables parents to select a more effective coping strategy (McCarthy, Allen, & Jones, 2013).

Turning attention towards coping strategies, novel insights emerged regarding the most effective coping strategies parents used in response to competition, organizational, and developmental stressors. For example, building on existing work which has started to explore the links between specific stressors and associated coping stratergies in sport parents (i.e., Burgess et al. 2016) our findings suggest that at a more holistic level organizational stressors (but not competition or developmental stressors), were managed more effectively by mastery and internal regulation strategies compared to goal withdrawal. Further, within challenge appraisal, competition stressors were managed more effectively compared to organizational, but not developmental, stressors. These findings are consistent with Lazarus and Folkman’s (1984) goodness-of-fit hypothesis, which proposes that coping strategies are most effective when matched to a situations level of controllability. In line with transactional conceptualizations of stress (Lazarus, 1999; Lazarus & Folkman, 1984), coping strategies in and of themselves are not likely to be inherently effective or ineffective, but rather it seems that coping effectiveness depends on the correct deployment of the most appropriate strategies at the right time (Knight & Holt, 2014). However, it is important to note that some coping strategies used by parents in the current study may be viewed as maladaptive within the subculture of British junior tennis (e.g., avoiding other parents) or may result in behaviors that are considered undesirable by young athletes (e.g., temporarily walking away; Knight, Boden & Holt, 2010). These are important considerations for practitioners and should be taken into account when designing coping interventions for sport parents.

The current study and its applied implications should be considered in light of several areas for development. Firstly, within this study psychological stress was considered as isolated events or demands that were pertinent at the time for participants, rather than dynamic and recursive processes. Future longitudinal research is needed to monitor stress over time and build a more accurate and detailed picture of parents’ experiences. Use of diaries, think aloud protocols, or video assisted interviewing may assist in this respect. With this in mind, it would also be interesting to consider how parents’ level of experience or previous coping attempts influence their appraisals, emotions , and coping strategies. Second, although the parents in the current study identified multiple coping strategies, we did not explore the effectiveness of different combinations of coping strategies per se. Future studies which examine the way in which multiple strategies are used together to enhance coping effectiveness would progress this body of research and enable researchers to develop more effective interventions. Finally, whilst sufficiently powered statistically, we had a 9% response rate from parents (*n* = 135). Future researchers could gain a larger sample of this population (approx. *n* = 1500) that is more representative of British tennis parents.

To conclude, this study utilized a mixed method design to provide unique insights to various components of psychological stress among parents of British tennis players. Furthermore, exploring the relationships and interactions between each stage of stress transactions provided a number of novel insights into the most effective ways of mediating the relationships between appraisal and emotions and of managing the emotions arising from a stressor (Lazarus, 1999). Such insights not only add to the sport parent literature but also provide crucial recommendations for practitioners, coaches, and national governing bodies who working with sport parents.

**Ethics Statement**

This study was carried out in accordance with the recommendations of Loughborough University ethics committee with informed consent from all subjects. All subjects gave informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the Loughborough University Ethics committee.

**Author Contributions**

CH was responsible for the conceptualization and management of research program. LF was responsible for data collection,and ST and MS analysed the data. CH, ST, FD and MS were responsible for manuscript preparation.

**Conflict of Interest**

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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*Table 1.*

The global dimensions and higher order themes of stressors reported by parents (*n =* 135) and the frequency of which each was reported.

|  |  |  |
| --- | --- | --- |
| Global Dimensions | Higher Order Themes | Frequency |
|  |  | *N* | *%* |
| Competition | Child’s Opponent | 33 | 24.44 |
|  | Child’s Behavior | 32 | 23.70 |
|  | Other Parents | 21 | 15.56 |
|  | Child's Performance | 20 | 14.81 |
|  | Watching a match | 20 | 14.81 |
|  | Outcome of Match | 16 | 11.85 |
|  | Child's Psychological Readiness to Perform | 9 | 6.67 |
|  | Refereeing | 4 | 2.96 |
| Organizational | Finances | 34 | 25.19 |
|  | Time | 30 | 22.22 |
|  | Coaching and Training | 22 | 16.30 |
|  | Organizing Bodies | 20 | 14.81 |
|  | Tournaments | 17 | 12.59 |
|  | Injury | 9 | 6.67 |
| Developmental | Child's Progress | 22 | 16.30 |
|  | Tennis Decisions | 10 | 7.41 |
|  | Child's Education and Social Development | 5 | 3.70 |
|  | Child's Future | 3 | 2.22 |
|  | Impact on Other Hobbies  | 2 | 1.48 |
|  | Child's Wellbeing and Overall Happiness | 2 | 1.48 |
| Other | Other | 8 | 5.93 |

*Table 2.*

The appraisals and emotional profile for all stressors (*n* = 342) and global stressor dimensions (*n* = 334).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| General Stressor Dimensions | Appraisals | Frequency | Anxiety  | Dejection | Excitement | Anger | Happiness |
|  |  | *N* | *%* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| All |  | 342 | 100 | 2.81 | 1.03 | 1.80 | 1.37 | 0.66 | 1.03 | 2.06 | 1.41 | 0.52 | 0.94 |
|  | Harm/loss | 115 | 33.63 | 2.94 | 1.01 | 2.17 | 1.40 | 0.32 | 0.79 | 2.49 | 1.42 | 0.27 | 0.64 |
|  | Challenge | 113 | 33.04 | 2.72 | 1.04 | 1.61 | 1.28 | 0.82c | 1.04 | 1.76 | 1.35 | 0.70 | 1.03 |
|  | Threat | 105 | 30.70 | 2.87 | 0.94 | 1.71 | 1.36 | 0.67 | 0.95 | 2.06 | 1.34 | 0.39 | 0.74 |
|  | Benefit  | 9 | 2.63 | 1.78 | 1.48 | 0.67 | 1.12 | 2.89 | 1.45 | 0.33 | 0.50 | 2.89 | 1.45 |
| Competition  |  | 155 | 100 | 2.88 | 1.07 | 1.79 | 1.41 | 0.56 | 0.92 | 2.39 | 1.43 | 0.40 | 0.85 |
|  | Threat | 52 | 35.55 | 2.85 | 1.06 | 1.50 | 1.35 | 0.77 | 0.94 | 2.31 | 1.38 | 0.42 | 0.75 |
|  | Challenge  | 51 | 32.90 | 2.90 | 0.99 | 1.76 | 1.26 | 0.63 | 0.96 | 2.14 | 1.50 | 0.51 | 0.95 |
|  | Harm/loss | 49 | 31.61 | 2.96 | 1.15 | 2.16 | 1.59 | 0.16 | 0.47 | 2.86 | 1.31 | 0.12 | 0.39 |
|  | Benefit | 3 | 1.94 | 2.00 | 1.73 | 1.00 | 1.00 | 2.33 | 2.08 | 0.67 | 0.58 | 2.67 | 2.31 |
| Organizational |  | 135 | 100 | 2.79 | 0.97 | 1.86 | 1.31 | 0.64 | 1.03 | 1.93 | 1.32 | 0.54 | 0.90 |
|  | Harm/loss | 54 | 40.00 | 2.94 | 0.92 | 2.06 | 1.23 | 0.50 | 1.004 | 2.22 | 1.46 | 0.43 | 0.79 |
|  | Challenge  | 45 | 33.33 | 2.53 | 1.10 | 1.58 | 1.36 | 0.80 | 1.06 | 1.58 | 1.12 | 0.76 | 1.11 |
|  | Threat | 34 | 25.19 | 2.91 | 0.79 | 1.94 | 1.30 | 0.53 | 0.90 | 2.00 | 1.23 | 0.35 | 0.60 |
|  | Benefit | 2 | 1.48 | 2.00 | 1.41 | 1.50 | 2.12 | 2.50 | 2.12 | 0.50 | 0.71 | 2.00 | 1.41 |
| Developmental |  | 44 | 100 | 2.70 | 0.95 | 1.80 | 1.37 | 0.98 | 1.21 | 1.27 | 1.23 | 0.75 | 1.16 |
|  | Threat | 19 | 43.18 | 2.84 | 0.90 | 1.89 | 1.45 | 0.63 | 1.07 | 1.47 | 1.26 | 0.37 | 0.97 |
|  | Challenge  | 14 | 31.82 | 2.50 | 1.02 | 1.36 | 1.08 | 1.57 | 1.02 | 0.86 | 0.95 | 1.21 | 1.05 |
|  | Harm/loss | 9 | 20.45 | 2.78 | 0.83 | 2.67 | 1.22 | 0.22 | 0.67 | 1.78 | 1.39 | 0.22 | 0.67 |
|  | Benefit | 2 | 4.55 | 2.50 | 2.12 | 0 | 0 | 3.50 | 0.71 | 0 | 0 | 3.50 | 0.71 |

**\*** M = Mean Score, SD = Standard Deviation.

*Table 3.*

The higher order themes and global dimensions of coping strategies including the frequency of parents (*n =* 135) reporting each strategy and coping effectiveness.

|  |  |  |  |
| --- | --- | --- | --- |
| Global Dimension | Higher Order Theme | Frequency  | Coping Effectiveness |
|  |  | *N* | *%* | *M* | *SD* |
| Mastery  |  | 97 | 71.85 | 6.22 | 2.27 |
|  | Communicating with child | 66 | 48.89 | 5.93 | 2.30 |
|  | Information seeking | 36 | 26.67 | 6.44 | 2.18 |
|  | Time management | 33 | 24.44 | 6.59 | 2.03 |
|  | Financial management | 25 | 18.52 | 6.11 | 2.09 |
|  | Manage child’s tennis progress and development | 22 | 16.30 | 7.41 | 1.84 |
|  | Change parenting behavior  | 20 | 14.81 | 5.72 | 2.73 |
|  | Reduce negative impact of others | 11 | 8.15 | 6.93 | 1.71 |
|  | Involve referee | 11 | 8.15 | 4.64 | 2.73 |
|  | Preparation | 9 | 6.67 | 4.50 | 2.92 |
|  | Problem solving | 8 | 5.93 | 6.22 | 2.22 |
|  | Oversee child’s overall development | 6 | 4.44 | 6.75 | 2.25 |
| Internal Regulation |  | 87 | 64.44 | 6.24 | 2.08 |
|  | Cognitive reappraisal | 46 | 34.07 | 6.41 | 2.08 |
|  | Seek emotional support  | 26 | 19.26 | 6.15 | 1.68 |
|  | Behavioral avoidance | 26 | 19.26 | 6.62 | 2.15 |
|  | Emotional regulation | 19 | 14.07 | 6.08 | 1.85 |
|  | Distraction | 13 | 9.63 | 6.47 | 2.20 |
|  | Cognitive avoidance  | 12 | 8.89 | 4.54 | 2.44 |
|  | Acceptance | 9 | 6.67 | 6.12 | 2.74 |
| Goal Withdrawal |  | 38 | 28.15 | 4.86 | 3.02 |
|  | Behavioral disengagement | 28 | 20.74 | 5.31 | 3.05 |
|  | Venting emotions | 12 | 8.89 | 4.00 | 2.85 |
| No Coping |  | 6 | 4.44 | 2.86 | 3.48 |

**\*** M = Mean Score, SD = Standard Deviation

*Table 4.*

The relationships between stressors, appraisals, coping strategies, and coping effectiveness (*n =* 646).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Stressor | Appraisal | Mastery CopingStrategy  | Mastery Coping Effectiveness  | Internal Regulation CopingStrategy | Internal Regulation Coping Effectiveness  | Goal Withdrawal CopingStrategy | Goal Withdrawal Coping Effectiveness  |
|  |  | *F* | *%* | *M* | *SD* | *F* | *%* | *M* | *SD* | *F* | *%* | *M* | *SD* |
| All | All | 374 | 57.89 | 6.23 | 2.26 | 229 | 35.45 | 6.20 | 2.05 | 43 | 6.66 | 4.77 | 2.98 |
|  | Harm/loss | 110 | 29.41 | 5.70 | 2.30 | 82 | 35.81 | 5.72 | 2.18 | 19 | 43.18 | 4.32 | 2.89 |
|  | Threat | 125 | 33.42 | 5.90 | 2.32 | 71 | 31.00 | 6.01 | 1.83 | 17 | 39.53 | 4.65 | 3.08 |
|  | Challenge | 132 | 35.29 | 6.89 | 2.03 | 68 | 29.69 | 6.82 | 1.89 | 7 | 16.28 | 6.29 | 2.93 |
|  | Benefit  | 7 | 1.87 | 7.86 | 1.07 | 8 | 3.49 | 7.38 | 2.33 | 0 | n/a | 0.00 | 0.00 |
| Competition | All | 164 | 43.85 | 5.81 | 2.42 | 113 | 49.34 | 6.27 | 2.07 | 28 | 65.12 | 4.96 | 3.01 |
|  | Harm/loss | 45 | 27.44 | 5.11 | 2.43 | 41 | 36.28 | 5.73 | 2.24 | 10 | 35.71 | 3.60 | 2.63 |
|  | Threat | 56 | 34.15 | 4.98 | 2.22 | 36 | 31.86 | 5.75 | 1.61 | 12 | 42.86 | 5.08 | 3.15 |
|  | Challenge  | 62 | 37.80 | 7.03 | 2.08 | 30 | 26.55 | 7.40 | 1.69 | 6 | 21.43 | 7.00 | 2.45 |
|  | Benefit | 1 | 0.61 | 8.00 | 0.00 | 6 | 5.31 | 7.33 | 2.73 | 0 | 0.00 | 0.00 | 0.00 |
| Developmental | All | 52 | 13.90 | 6.31 | 2.14 | 33 | 14.41 | 5.88 | 1.65 | 2 | 4.65 | 4.50 | 4.95 |
|  | Harm/loss | 9 | 17.31 | 5.44 | 1.74 | 5 | 15.15 | 4.80 | 2.28 | 0 | 0.00 | 0.00 | 0.00 |
|  | Threat | 23 | 44.23 | 6.48 | 2.00 | 17 | 51.52 | 6.00 | 1.77 | 2 | 100 | 4.50 | 4.95 |
|  | Challenge  | 17 | 32.69 | 6.12 | 2.45 | 10 | 30.30 | 6.10 | 0.99 | 0 | 0.00 | 0.00 | 0.00 |
|  | Benefit | 3 | 5.77 | 8.67 | 0.58 | 1 | 3.03 | 7.00 | 0.00 | 0 | 0.00 | 0.00 | 0.00 |
| Organizational | All | 158 | 42.24 | 6.63 | 2.05 | 83 | 36.24 | 6.23 | 2.18 | 13 | 30.23 | 4.38 | 2.90 |
|  | Harm/loss | 56 | 35.44 | 6.21 | 2.17 | 36 | 43.37 | 5.83 | 2.14 | 9 | 69.23 | 5.11 | 3.10 |
|  | Threat | 46 | 29.11 | 6.74 | 2.21 | 18 | 21.69 | 6.56 | 2.25 | 3 | 33.33 | 3.00 | 2.00 |
|  | Challenge  | 53 | 33.54 | 6.96 | 1.78 | 28 | 33.73 | 6.46 | 2.19 | 1 | 7.69 | 2.00 | 0.00 |
|  | Benefit | 3 | 1.90 | 7.00 | 0.00 | 1 | 1.20 | 8.00 | 0.00 | 0 | 0.00 | 0.00 | 0.00 |

**\*** F = Frequency, M = Mean Score, SD = Standard Deviation.

*Table 5.*

The relationship between competition, developmental, and organizational stressors, emotions, coping strategies, and coping effectiveness (*n =* 646).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Stressor | Emotion | Mastery  | Internal Regulation  | Goal Withdrawal  |
|  |  |  | Coping Strategy | CopingEffectiveness |  | Coping Strategy | CopingEffectiveness |  | Coping Strategy | CopingEffectiveness |
|  |  | *F* | *M* | *SD* | *M* | *SD* | *F* | *M* | *SD* | *M* | *SD* | *F* | *M* | *SD* | *M* | *SD* |
| All | Anxiety | 374 | 2.84 | 1.04 | 6.23 | 2.26 | 229 | 2.78 | 1.00 | 6.20 | 2.05 | 43 | 3.05 | 0.99 | 4.77 | 2.98 |
|  | Dejection | 374 | 1.80 | 1.39 | 6.23 | 2.26 | 229 | 1.88 | 1.32 | 6.20 | 2.05 | 43 | 2.25 | 1.40 | 4.77 | 2.98 |
|  | Excitement | 374 | 0.61 | 0.99 | 6.23 | 2.26 | 229 | 0.08 | 1.10 | 6.20 | 2.05 | 43 | 0.59 | 1.00 | 4.77 | 2.98 |
|  | Anger | 374 | 1.99 | 1.39 | 6.23 | 2.26 | 229 | 1.98 | 1.40 | 6.20 | 2.05 | 43 | 2.75 | 1.48 | 4.77 | 2.98 |
|  | Happiness | 374 | 0.44 | 0.87 | 6.23 | 2.26 | 229 | 0.65 | 1.03 | 6.20 | 2.05 | 43 | 0.43 | 0.93 | 4.77 | 2.98 |
| Competition | Anxiety | 164 | 2.90 | 1.10 | 5.81 | 2.42 | 113 | 2.95 | 1.01 | 6.27 | 2.07 | 28 | 2.97 | 1.15 | 4.96 | 3.01 |
|  | Dejection | 164 | 1.91 | 1.46 | 5.81 | 2.42 | 113 | 1.87 | 1.38 | 6.27 | 2.07 | 28 | 2.00 | 1.46 | 4.96 | 3.01 |
|  | Excitement  | 164 | 0.46 | 0.79 | 5.81 | 2.42 | 113 | 0.71 | 1.06 | 6.27 | 2.07 | 28 | 0.79 | 1.15 | 4.96 | 3.01 |
|  | Anger | 164 | 2.46 | 1.39 | 5.81 | 2.42 | 113 | 2.14 | 1.51 | 6.27 | 2.07 | 28 | 2.62 | 1.54 | 4.96 | 3.01 |
|  | Happiness | 164 | 0.25 | 0.59 | 5.81 | 2.42 | 113 | 0.58 | 1.08 | 6.27 | 2.07 | 28 | 0.66 | 1.08 | 4.96 | 3.01 |
| Developmental | Anxiety | 52 | 2.94 | 0.92 | 6.31 | 2.14 | 33 | 2.24 | 0.79 | 5.88 | 1.65 | 2 | 3.00 | 0.00 | 4.50 | 4.95 |
|  | Dejection | 52 | 1.60 | 1.42 | 6.31 | 2.14 | 33 | 1.79 | 1.24 | 5.88 | 1.65 | 2 | 3.00 | 1.41 | 4.50 | 4.95 |
|  | Excitement  | 52 | 1.15 | 1.24 | 6.31 | 2.14 | 33 | 0.79 | 1.05 | 5.88 | 1.65 | 2 | 0.00 | 0.00 | 4.50 | 4.95 |
|  | Anger | 52 | 1.00 | 1.14 | 6.31 | 2.14 | 33 | 1.42 | 1.17 | 5.88 | 1.65 | 2 | 2.50 | 2.12 | 4.50 | 4.95 |
|  | Happiness | 52 | 0.87 | 1.22 | 6.31 | 2.14 | 33 | 0.61 | 1.06 | 5.88 | 1.65 | 2 | 0.00 | 0.00 | 4.50 | 4.95 |
| Organizational | Anxiety | 158 | 2.74 | 1.01 | 6.63 | 2.05 | 83 | 2.76 | 1.01 | 6.23 | 2.18 | 13 | 3.23 | 0.60 | 4.38 | 2.90 |
|  | Dejection | 158 | 1.76 | 1.31 | 6.63 | 2.05 | 83 | 1.95 | 1.29 | 6.23 | 2.18 | 13 | 2.69 | 1.18 | 4.38 | 2.90 |
|  | Excitement  | 158 | 0.59 | 1.04 | 6.63 | 2.05 | 83 | 0.93 | 1.18 | 6.23 | 2.18 | 13 | 0.23 | 0.44 | 4.38 | 2.90 |
|  | Anger | 158 | 1.84 | 1.27 | 6.63 | 2.05 | 83 | 2.01 | 1.28 | 6.23 | 2.18 | 13 | 3.08 | 1.33 | 4.38 | 2.90 |
|  | Happiness | 158 | 0.49 | 0.92 | 6.63 | 2.05 | 83 | 0.75 | 0.97 | 6.23 | 2.18 | 13 | 0.00 | 0.00 | 4.38 | 2.90 |

**\*** F = Frequency, M = Mean Score, SD = Standard Deviation