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A meta-study of qualitative research examining stressor appraisals and coping among adolescents in sport

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Abstract

The main aim of this study was to create an integrated theoretical perspective of the qualitative adolescent sport stressor appraisal and coping literature. A secondary aim was to critique theoretical and methodological issues in the extant literature. Following database searches, 20 studies were retained for analysis. Meta-data, meta-theory, and meta-method analyses were conducted followed by a final meta-synthesis of findings. Analyses produced four themes: contextual and dynamic stressor appraisals, contextual and dynamic coping, coping resources and processes of acquisition, and social networks as assets and liabilities. Findings highlight the need for precise use of theory in the study of coping. Finally, while several data collection methods have been used, there is scope for greater methodological diversity to advance our understanding of coping among adolescent athletes.

Keywords: *Meta-synthesis, social networks, coping resources, coping development*

Introduction

Coping is described as a conscious attempt by individuals to manage situations they perceive to be stressful (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Lazarus, 1999). Coping is a complex, dynamic process including factors such as appraisal, coping responses, emotions, and coping effectiveness (e.g. Lazarus, 1999; Lazarus & Folkman, 1984). Adolescence is an important developmental period during which there are critical changes in the ways individuals learn to cope (Skinner & Zimmer-Gembeck, 2007). The coping patterns individuals exhibit during adolescence may be indicative of adaptive or maladaptive patterns of coping in adulthood (Compas et al., 2001). Therefore, at a general level it is particularly important to study coping among adolescents. More specifically, it is important to study the ways in which adolescents cope with stressors experienced in sport contexts, which can include stressors arising from their coaches over-emphasizing winning, conflicts with opponents, or parental pressures to succeed (Anshel & Delaney, 2001; Goyen & Anshel, 1998; Sirard, Pfeiffer, & Pate, 2006).

Qualitative approaches are useful for studying coping because it is a subjective process and different types of qualitative research can be used to examine personal meanings and processes (Denzin & Lincoln, 2005). Although a review of adolescent coping literature was published fairly recently (Holt, Hoar, & Fraser, 2005), it focused primarily on quantitative studies and developmental issues. No previous reviews have sought specifically to synthesize the findings from the growing number of qualitative studies. The current study was designed to create an integrated synthesis of the qualitative literature to establish “what is known”, and create a conceptual model depicting the state of knowledge about adolescent coping in sport.

The qualitative adolescent sport coping literature may benefit from being subjected to an integrative review for several reasons, of which we were aware before this study and which provided the rationale for our research. First, researchers tend to use different terms to conceptualize “stressors”, which means that the literature as a whole is somewhat fragmented because different terms have been used to describe similar concepts. Second, studies have examined coping at different “levels”. For example,

some researchers have examined instances of coping with specific stressor appraisals within a competitive situation (e.g. Nicholls & Polman, 2008), whereas others have focused on contextual factors that influence stressor appraisals and coping (e.g. Reeves, Nicholls, & McKenna, 2009). These types of studies are clearly related, but as yet there are no published accounts depicting how the findings from conceptually different research can be integrated.

Finally, before commencing the current study, we knew that Lazarus's theoretical work tended to dominate the adolescent sport coping literature. However, because Lazarus's (1999) cognitive-motivational-relational theory is complex and wide ranging, we were aware that few qualitative studies would have embraced all the components of the theory. Neil and colleagues observed that sport stress and coping research has tended to "focus on separate facets of this stress process" (Neil, Mellalieu, & Hanton, 2009, p. 194). Therefore, we speculated, if different qualitative studies have examined different aspects of the theory, an integrated review could help bring together related studies to present a more complete description of adolescent athletes' coping than could be achieved by a single study alone. In fact, Lazarus (2000) noted that studies often reduce the coping process to discrete parts without reconstructing these parts to understand the process as a whole. He suggested such research designs can fractionate our understanding of the complexity of coping, thus restricting knowledge generation and the creation of potentially useful interventions. He has also suggested that "after we have broken a phenomenon down in a reductive analytic search for causal components – that is, part processes – the whole phenomenon must still be resynthesized to what it is in nature" (Lazarus, 1999, p. 195). The current study was conducted to resynthesize previous findings to help establish more about the phenomenon of adolescents' coping in sport.

In summary, the main aim of this study was to create an integrated theoretical perspective of the qualitative adolescent sport stressor appraisal and coping literature. A secondary aim was to critique theoretical and methodological issues in the extant literature. Only studies that presented qualitative (as opposed to quantitative) data were included in the current study because it has been suggested that research syntheses should include studies that share a similar epistemological perspective and approach to knowledge generation (Paterson, Thorne, Canam, & Jillings, 2001). Studies included in this synthesis shared a similar approach to creating knowledge about coping (i.e. they value knowledge that is created by producing and analysing data in the form of words – rather than numbers – to reflect participants' subjective experiences of coping).

Methods

Meta-study

A meta-study was selected to analyse and synthesize data, methods, and theory used in primary research reports in order to generate new knowledge or understanding. Meta-studies can bring individual studies together at a more abstract level and identify consensus, develop hypotheses, and investigate contradictions. Therefore, a meta-study is neither a review of literature nor an aggregation of findings (Finfgeld, 2003), but rather it involves a systematic approach to collecting and analysing qualitative research findings. Meta-study was an appropriate methodological choice because it is an interpretation of a phenomenon that brings together various qualitative studies that are examined at an abstract level for their contribution to an overall understanding of stressor appraisals and coping (Zimmer, 2006).

Meta-studies use qualitative methods to analyse and synthesize findings of qualitative studies where the emphasis is placed on interpretation rather than reduction of data (Sandelowski & Barroso, 2003). A meta-study consists of four components: meta-data analysis, meta-method analysis, meta-theory analysis, and meta-synthesis (Paterson et al., 2001). The first three components are considered as the data analysis phase, which is followed by the synthesis phase. During the analysis phase, the examination of data, method, and theory do not necessarily occur sequentially and are often conducted concurrently (Paterson et al., 2001), but the meta-synthesis must necessarily follow the analysis phase and is presented as the findings of a meta-study.

Procedure

Initially, a broad search strategy was used to retrieve articles from sport and exercise psychology journals and online databases. Keywords included terms such as stress, emotion, anxiety, coping, appraisal, coping effectiveness, youth, adolescent, and qualitative. First, manual searches were conducted of the following sport psychology journals: *Athletic Insight*, *Research Quarterly for Exercise and Sport*, *European Journal of Sport Science*, *International Journal of Sport and Exercise Psychology*, *Journal of Applied Sport Psychology*, *Journal of Sport Behavior*, *Journal of Sport and Exercise Psychology*, *Journal of Sports Sciences*, *Psychology of Sport and Exercise*, *The Sport Psychologist*, and *Qualitative Research in Sport and Exercise Psychology*. This initial search returned 5648 articles that were examined based on keywords in the title or abstract. Altogether, 51 studies were retained for further examination (see Figure 1).

The findings of a meta-study rest on having conducted a sufficiently exhaustive search of the

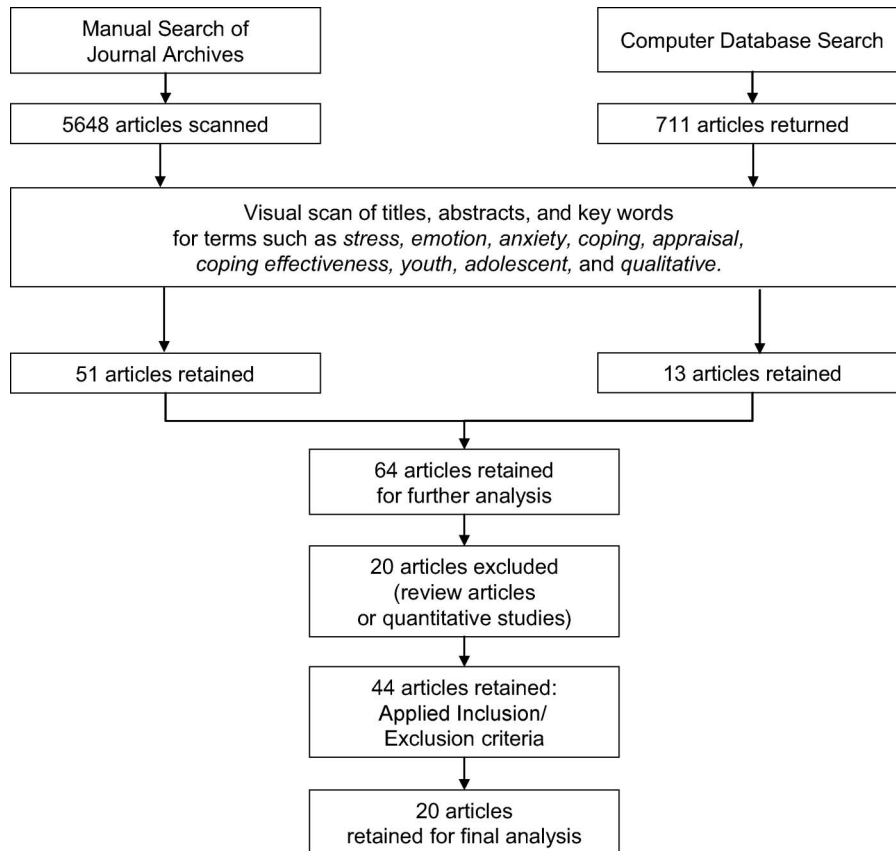


Figure 1. Flow diagram of search and retrieval strategies.

literature. Based on the advice of experts in meta-study methodology (Barroso et al., 2003), an expert-level search professional was contacted to assist with online database searches. The expert-level searcher was a librarian liaison who was familiar with appropriate search syntax and operators to assist with searching for and retrieving qualitative studies. Computer-assisted searches (using the keywords indicated above) were conducted of the following databases: PsychINFO, SPORTdiscus, MEDLINE, ERIC, EMBASE, Physical Education Index, and Google Scholar. The “grey” (unpublished) literature was searched using ProQuest Dissertations and Theses database. The date range for searching was specified as “earliest” to “March 2009”. In addition, weekly automated searches were created to update results in the event that new studies were published after the initial search was conducted. The database searches returned 711 articles; irrelevant or duplicate articles were rejected, and 13 articles were retained for examination. Of the 64 studies gathered via the manual and computer database searches, 15 were rejected because they were review articles, and 5 articles were rejected for using quantitative data; 44 studies were retained for further inspection.

Criteria for inclusion/exclusion

Following the initial collection of articles, and based on the guidelines provided by Sandelowski and colleagues (Sandelowski, Docherty, & Emden, 1997) for conducting meta-study, the criteria for inclusion were refined and the 44 studies were sorted according to three main criteria. Specifically, articles were included/excluded by posing the following questions:

- (a) Did the study collect and report qualitative data? Qualitative data include interviews, observations, and document analysis, which all involved written or transcribed descriptions, quotations or responses (Patton, 2002). Studies that combined qualitative and quantitative data (such as questionnaires with open-ended questions) were included if findings based on qualitative data could be separated and examined independently from the quantitative data.
- (b) Did the sample include adolescent athletes? It is widely accepted that adolescence is the second decade of life (age 11–20 years) during which the key developmental task is prepara-

tion for adulthood (Santrock, 2008). Based on this classification, articles were included if they sampled athletes between the ages of 11 and 20 years. Studies that sampled adolescents and adults were included if the mean age of the participants was under 20 years. In the case of studies where the mean age of the participants was over 20 years, these were included if the data for the adolescent athletes could be separated from data from the adult athletes.

- (c) Did the authors study an aspect of the coping process and/or did the authors use a theoretical framework of stressor appraisals and coping? Studies were included if the authors stated that they adopted a theoretical framework of stressor appraisals and coping and/or if the stated purpose of the study was to examine an aspect of stressor appraisals and/or coping. Studies that did not have a theoretical framework were included if the stated purpose of the study was to examine stressor appraisals or coping. For example, Gould and colleagues (Gould, Wilson, Tuffey, & Lochbaum, 1993) defined stress as a process but did not explicitly state the use of any particular theoretical framework. Although this could be considered an atheoretical study, the article was included because the stated purpose of the study was to learn more about stressor appraisals and coping. Twenty-four articles were excluded and 20 were retained for the final analysis (see Figure 1).

Data management

Following Paterson et al. (2001), once the primary research reports were selected a table was constructed that listed the significant aspects of the studies (Table I). This table was created by reading each primary research report to identify the methods, use of theory, and findings that would contribute to each of the analytic components of the meta-study.

Meta-data analysis

Meta-data analysis concerns the examination of findings from primary research reports (Paterson et al., 2001). The terms “data” or “findings” in a meta-study refer to the analyses and interpretations made by the authors of primary research reports. Thus, meta-study is a comparative analysis of the authors’ findings from those studies (Zimmer, 2006), through which the researcher develops new interpretations. Meta-data analysis portrays the shared and unique findings of each individual study, and

proposes hypotheses about the relationships between the concepts represented within the primary reports. Meta-data analysis is used to interpret the findings from primary research reports that provide insights into the phenomenon studied.

During meta-data analysis, the findings from each primary research report were coded inductively line-by-line as though it were a transcript of an interview (Paterson et al., 2001). The findings were treated as raw data, much like data in an interview transcript, and they were identified and labelled according to the essential meaning conveyed in the findings. For example, the finding “Reflection and learning was mentioned frequently by both early and middle adolescents” (Reeves et al., 2009) was identified as a concept related to reflection and learning. All the concepts identified in the primary research reports were listed in a table for comparison and concepts that shared essential meanings were clustered together. Next, concepts from the primary reports were translated into one another (Noblit & Hare, 1988) by determining how the key concepts, metaphors, and phrases were represented in each study. In other words, the concepts of each study were compared and contrasted with the concepts of every other study. For example, studies used terms such as “source of stress” (Anshel & Delaney, 2001), “performance worries” (Holt & Mandigo, 2004), and “reported” or “appraised stressors” (Holt, Berg, & Tamminen, 2007; Nicholls, Holt, Polman, & James, 2005b), which all appear to describe a similar phenomenon related to athletes’ perceptions of stressors. In the final synthesis, the term “stressor appraisals” was used to refer to this common concept, which is theoretically consistent with Lazarus’s (1999; Lazarus & Folkman, 1984) theory (which was appropriate because Lazarus’ theory was used by 17 of the 20 primary reports). This process was repeated for all the concepts identified in the primary research reports in order to combine and analyse similar concepts.

Meta-method analysis

Meta-method analysis offers a means for researchers to reflect on ways in which methods, methodology, and research decisions affect the findings and outcomes of a particular study (Paterson et al., 2001). After examining the methodologies (e.g. phenomenology, case study) used by each primary report (if applicable), the meta-method analysis involved an overall appraisal of methodological themes and patterns within the area of inquiry (Paterson et al., 2001). Next, the use of particularly popular methods (or techniques) was examined to identify patterns of research, sampling procedures, and data collection and analysis techniques. These methods and their

Table I. Key features of primary research reports*.

Study	Theory	Sampling method	Sample characteristics	Data collection	Data analysis
Anshel & Delaney (2001)	Lazarus & Folkman (1984); adheres to transactional model	Head coaches provided study information to their players and "encouraged them to participate" (p. 337)	52 field hockey players (36 males, 16 females) aged 10–12 years; New South Wales Junior Hockey Association. Ethnicity not stated	Self-report checklist to identify stressors and positive/negative appraisals; used within a structured interview	Deductive content analysis. Classified coping responses according to approach or avoidance strategies
Chase et al. (2005)	Bandura's (1997) self-efficacy theory; Heil's (2000) psychophysiological model of risk	Purposeful sampling of information-rich cases	10 competitive female gymnasts aged 12–17 years (mean 13.9) participating since they were 3–5 years old (mean 8.7). All Caucasian	Standardized open-ended interview	Inductive content analysis by two researchers, checked by another researcher. Frequency counts of reported themes
Cohn (1990)	Smith's (1986) cognitive-affective model of stress and burnout	Sampling criteria: required to have played 1 year competitive golf	10 competitive male high school golfers aged 15–17 years (mean 16.4) who had been participating for 3–9 years (mean 7.1). Ethnicity not stated.	Semi-structured interviews	Typological analysis of transcripts; deductive content analysis
Colgan (2006)	Lazarus & Folkman (1984)	Recruited via a list provided by coaches	15 competitive figure skaters (11 girls, 4 boys) aged 11–17 years (mean 13.6) who had been participating for 5–6 years. 13 Caucasians, 1 female Pacific Islander, 1 male Asian	Quantitative and qualitative data collection; semi-structured interviews	Coding process "unique to this project and developed by the principal investigator" (p. 39); inductive analysis or "emergent coding" and development of categories
Eubank & Collins (2000)	Martens et al.'s (1990) cognitive and somatic anxiety; reference to "dynamic" approach to coping (Lazarus & Folkman, 1984)	Not stated	24 national and regional standard youth sport participants (gymnastics and tennis) aged 14–18 years (mean 17.8), actively competing for 6–10 years (mean 8.7). Ethnicity not stated	Qualitative and quantitative data collection; semi-structured interviews while watching video of "high stress" competitive performance	Inductive content analysis; elements of deductive analysis to verify that themes and categories were represented in original transcripts
Giacobbi et al. (2004)	Lazarus's transactional model	Convenience and purposeful sampling	5 first-year female university students aged 18 years from NCAA Division 1 school. All Caucasians	Three semi-structured interviews: two focus groups and one individual interview conducted across the season (November, January, April)	Grounded theory (open and focused coding, memos, constant comparative method, sensitizing concepts, development of theory)
Gilbert (2000)	Lazarus's transactional model	Purposeful sampling	5 female adolescent team sport (soccer) athletes and their coaches. The players had 6–10 years' experience in soccer. Ethnicity not stated	Collective case study approach. Interviews, document analysis (newspapers, athlete journal entries, field notes, team newsletters), and observation over 8-month period. Group and multiple individual interviews with athletes and their coaches	Inductive coding
Gould et al. (1993)	Not stated	Convenience sampling: 4 students selected for a panel discussion	4 male student-athletes aged 11–16 years. Ethnicity not stated	Structured interviews. Fifteen male and female students interviewed 3–6 other young athletes (total sample unknown) "who vary in race, gender, athletic talent, and academic ability" (p. 288); four student-interviewers were selected by the second author to discuss peers' responses	Not stated. Excerpts from panel discussion presented

(Continued)

Table I. (Continued).

Study	Theory	Sampling method	Sample characteristics	Data collection	Data analysis
Holt & Mandigo (2004)	Lazarus' transactional model	Not stated	33 junior members of a cricket club in Wales (mean age 11.9 years) with an average of 2.9 years' playing experience. All were Caucasian	Two concept maps completed during training sessions. Open-ended seed ideas given and participants generated ideas	Inductive analysis using constant comparative method. Coping themes were deductively classified according to function (problem or emotion focused), and coping strategies used to manage three most frequent worries were tallied. Quantitative analyses (phi coefficients) were calculated
Holt et al. (2007)	Lazarus's transactional model; Aspinwall & Taylor's (1997) proactive coping model	Purposeful sampling	10 Canadian female collegiate volleyball players (mean age 19.36 years) with an average of 7.91 years' playing experience. All players were Caucasian	Pre- and post-tournament semi-structured interviews	Instrumental case study methodology stated. Content analysis was initially inductive, became more deductive as analysis progressed. Constructed idiographic chronological profiles using a deductive approach.
Nicholls & Polman (2007)	Lazarus's transactional model	Not stated	11 international rugby union players (mean age = 17.9 years) affiliated to the England Rugby Union talent identification programme. Playing experience ranged from 7 to 12 years (mean 9.7). Ethnicity not stated	Daily diary using a stressor checklist; open-ended coping response section, and perceived coping effectiveness (Likert scale)	Stressor checklists were tallied to identify five most frequently reported stressors and analysed longitudinally. Coping responses were analysed both inductively and deductively. Mean scores and standard deviations were calculated
Nicholls & Polman (2008)	Lazarus's transactional model	Purposeful sampling	5 English high-level golfers (mean age 16.8 years) with a mean handicap of 1.4. Playing experience ranged from 4 to 10 years (mean 6.6). All Caucasians	Athletes instructed to verbalize their thoughts for six holes of golf (with microphone)	Protocol analysis for relevance (related to golf) and consistency (streams of consistent verbalization). Inductive content analysis to identify stressors and coping
Nicholls (2007b)	Lazarus's transactional model	Not stated	A 16-year-old internationally ranked male English golfer with 5 years' experience and a scratch handicap. Ethnicity not stated	30-min semi-structured interview prior to training programme; audio diary completed over 21-day period; post-intervention interview (9 months follow-up)	Phenomenological qualitative analysis procedure: inductive line-by-line analysis to identify stressors, coping, and effectiveness
Nicholls (2007a)	Lazarus's transactional model	Names provided by the Scottish Golf Union	5 male Scottish international golfers aged 16–17 years (mean 16.6) with handicaps of 1 to +4. Playing experience ranged from 5 to 15 years (mean 8). Ethnicity not stated	Daily diaries collected over 28-day period	Interpretive phenomenological analysis
Nicholls et al. (2005a)	Lazarus's transactional model	Purposeful sampling	18 male Irish international golfers aged 14–21 years (mean 17.0). Playing experience ranged from 5 to 14 years (mean 8.3). Ethnicity not stated	Semi-structured telephone interviews	Interpretive phenomenological analysis
Nicholls et al. (2005b)	Lazarus's transactional model	Not stated	11 middle-class international golfers (mean age 16.4 years) with handicaps of 0–4 (mean 1.4). All were Caucasian	Daily diary (stressor checklist and open-ended coping response section) collected over a 31-day period	Stressor data tallied and analysed longitudinally. Open-ended coping responses analysed inductively
Reeves et al. (2009)	Lazarus's transactional model	Not stated	40 male academy soccer players aged 12–18 years (mean 14.22) with 1–9 years' competitive experience (mean 3.9). Ethnicity not stated	Semi-structured interview	Early analysis was inductive, based on constant comparative method; categories were clustered and then subjected to a deductive analysis

(Continued)

Table I. (Continued).

Study	Theory	Sampling method	Sample characteristics	Data collection	Data analysis
Sagar et al. (2007)	Lazarus's transactional model	Not stated	9 British elite athletes (5 males, 4 females) aged 14–17 years from tennis (3 males), kickboxing (1 male), triathlon (1 female), basketball (1 male), field hockey (1 female), football/soccer (2 females). Athletes had 1.5–5 years' competitive experience. All Caucasians	20-min pre-interview meeting to build rapport; semi-structured in-depth interview	Inductive thematic analysis with some principles of grounded theory (coding, constant comparison, memo writing)
Tamminen (2007)	Aspinwall & Taylor's proactive coping theory; Lazarus's transactional model	Purposeful sampling	13 female basketball players (mean age 16 years) with average experience of 6.2 years. 10 Caucasians, 3 African-Canadian or African-European	Pre- and post-season interviews; athletes maintained audio diaries over the season; participant observation to contextualize interview and audio diary data	Group-level inductive content analysis of stressors; deductive analysis of coping data based on Skinner & Zimmer-Gembeck (2007) families of coping; created idiographic profiles of coping
Udry et al. (1997)	Lazarus's transactional model	Not stated	10 former elite junior tennis players (6 females, 4 males; mean age 17.4 years). On average, athletes began playing tennis at 8.5 years of age and had played competitive tennis for 10.1 years	Semi-structured interview	Data inductively analysed using content analysis; idiographic profiles created.

*This is a summary table; due to space constraints, it does not include all the features of the original table used for analysis.

implications for future research are addressed in the Discussion section.

Meta-theory analysis

Meta-theory analysis is the analysis of the theoretical underpinnings of research conducted in a particular area (Paterson et al., 2001). Overt theoretical underpinnings were identified within the research reports. By examining theory across the studies, it is possible to understand how the use of particular theories may give rise to particular interpretations of data, which in turn may have shaped the way in which subsequent research has been conducted. As noted in the Introduction, we already knew that Lazarus's (1999; Lazarus & Folkman, 1984) perspective of coping has dominated the field of adolescent sport coping research. As such, the theoretical issues addressed in the Discussion primarily relate to the ways Lazarus's theory has been used in the published qualitative literature.

Meta-synthesis

The meta-synthesis is the primary outcome of this study (addressing the primary purpose). Meta-synthesis pulls together the interpretations made from the meta-data-analysis, meta-method analysis, and meta-theory analysis processes. By engaging in a meta-synthesis of the data, methods, and theory from primary research reports, a meta-study aims to produce a mid-range theory concerning a substantive area of research (Paterson et al., 2001). The meta-synthesis was refined continuously over the course of the research in an iterative process between conducting the analyses, discussions between the co-authors, and the final synthesis. The primary analyses were conducted by the first author and produced initially descriptive accounts of the categories identified within the primary research reports. The key categories and themes were then discussed with the second author to evaluate their coherence and the overall results. Following discussions between the authors, re-analysis of the findings led to a more interpretive presentation of results (see Figure 2). Upon discussing the results with the second author, the findings were refined, similarities and differences between the categories were examined, and the final model was developed. The results below are the product of the overall meta-synthesis.

Results

First, we describe the major themes identified from the meta-data analysis. We then go on to describe the final model (Figure 2), which was produced as a

Table II. Themes and main findings from primary reports.

Theme	Sub-category	Studies	Main findings
Stressor appraisals are contextual and dynamic	Stressor appraisals are contextual	Anshel & Delaney (2001)	Sources of stress appear to reflect sport type
		Chase et al. (2005)	As a result of previous injury experiences, feelings of apprehension, anxiety, and fear were based on the fear of becoming injured again
		Giacobbi et al. (2004)	Stressors for athletes included being away from home and academics
		Gilbert (2000)	Position on team may influence stressor appraisals
		Nicholls & Polman (2007)	Injury was a prominent stressor, presumably because rugby is physically demanding. Coach or parental criticism was a stressor, which may be due to roles of coaches in team sports
		Reeves et al. (2009)	Middle adolescents reported social evaluation, contractual stressors, and playing at a higher level as stressors, which may reflect demands among athletes playing at a soccer academy
		Sagar et al. (2007)	Some stressor appraisals may be instilled at a young age and persist into adulthood
	Tamminen (2007)	Coach criticism and poor coach communication were central to the climate for stress that pervaded the athletes' reported stressors	
	Stressors are dynamic	Giacobbi et al. (2004)	There was a shift in the way athletes appraised major stress sources as athletes became more comfortable with their environment
		Gilbert (2000)	Athletes experienced stress related to competition and training
		Nicholls et al. (2005b)	Stressor appraisals changed over a 31-day period; number of appraisals increased in conjunction with most important competitions
		Nicholls & Polman (2007)	More stressors were reported during periods when matches were played
		Nicholls & Polman (2008)	Stressor appraisals change over a round of golf
		Reeves et al. (2009)	Developmental differences in stressor appraisals between early and middle adolescent athletes
Tamminen (2007)		Stressors changed over time with changing circumstances	
Coping is contextual and dynamic	Eubank & Collins (2000)	Individuals possess strategies they typically use to cope with stress, but they may adjust those or use different strategies depending on the circumstances	
		Giacobbi et al. (2004)	Some coping strategies were used consistently throughout the year while others seemed to develop as the year progressed, possibly as adaptive responses to particular stressors
	Gilbert (2000)	Position on team may influence use and development of particular coping strategies	
		Holt & Mandigo (2004)	Participants did not report more abstract coping strategies such as using tactical concepts to improve performance, which may reflect the young age of the athletes
	Nicholls et al. (2005b)	Variations in athletes' use of coping strategies coincided with their most important competitions	
		Nicholls & Polman (2007)	Use of coping strategies changed over 31-day period
	Nicholls & Polman (2008)	Coping appeared to change over the six holes. Athletes used different coping strategies to deal with different stressors	
		Reeves et al. (2009)	Middle adolescents employed a greater range of coping strategies to deal with the same stressors compared with early adolescents. Social support was a salient coping strategy among middle adolescents but was rarely reported by early adolescents. The processes by which these coping strategies develop is not well understood
Coping resources and processes of acquisition	Coping resources	Eubank & Collins (2000)	Individuals possess strategies they typically use to cope with stress, but they may adjust those or use different strategies depending on the circumstances. The development of coping strategies may be related to the extent to which athletes perceive anxiety to be facilitative or debilitating. The experience of more stressful conditions may force the development of new coping strategies

(Continued)

Table II. (Continued).

Theme	Sub-category	Studies	Main findings
Social networks as assets and liabilities	Reflection and learning	Gilbert (2000)	There is an increased ability during adolescence to utilize support resources when coping with stress
		Holt & Mandigo (2004)	Athletes may not have possessed an appropriate repertoire of coping skills for the worries they experienced
		Nicholls & Polman (2007)	Coping effectiveness fluctuated over a 31-day period and may be related to the number of coping strategies deployed
		Reeves et al. (2009)	Emotion-focused coping suggested to emerge in middle adolescence
		Tamminen (2007)	Athletes may explore a variety of strategies and cope most effectively by using a few “tried and true” strategies
		Gilbert (2000)	Athletes were largely unable to unpack and discuss their coping development
		Nicholls et al. (2005a)	The majority of golfers were unaware of coping poorly until they were asked to reflect
		Reeves et al. (2009)	Reflection and learning was mentioned frequently by both early and middle adolescents
		Tamminen (2007)	Reflection and learning distinguished between athletes who coped proactively versus coping in a more reactive manner
	Effective coping is a skill	Giacobbi et al. (2004)	Participants may have learned or developed coping strategies as the year progressed; coping is a learned response to the demands experienced by athletes and is highly malleable to change
		Gilbert (2000)	Coping with stress is considered a mental skill, and thus to be most effective, coping strategies must be practised and rehearsed on a regular basis. The athletes developed their coping strategies through an experiential learning process
		Holt et al. (2007b)	Athletes who reported effective coping learned to use certain coping strategies through accumulated experience; older, more experienced athletes appeared to cope more effectively than the younger, less experienced athletes
		Nicholls (2007b)	The athlete reported using fewer ineffective coping strategies as the study progressed; the 9-month post-intervention social validation interview suggested longevity of training effects
		Nicholls (2007a)	Athletes had highly effective coping responses in relation to most stressors they experienced; high-level athletes cope effectively with performance stress
		Nicholls et al. (2005b)	Coping by speeding up, trying too hard, etc., is suggested to be not well learned and not automated, thus ineffective
		Reeves et al. (2009a)	Middle adolescence is a phase for initiating the employment of more combinations of cognitive and behavioural strategies
		Anshel & Delaney (2001)	Social support serves as a buffer against stress, particularly among younger athletes whose coping skills are underdeveloped
		Giacobbi et al. (2004)	Social networks influenced the way participants perceived their sources of stress and coped with stressors
		Gilbert (2000)	The coaches’ strong work ethic may have contributed to the athletes’ use of working hard and not giving up as coping strategies
Social networks as assets and liabilities	Social networks influence stressor appraisals and coping	Gilbert (2000)	Parents are key influences in the origins of the athletes’ coping strategies
		Reeves et al. (2009)	The emergence of emotion-focused coping reflected changes in social networks.
		Sagar et al. (2007)	Failure may have adverse consequences for athletes’ social relationships
		Tamminen (2007)	The team context was described as a “climate for stress”, which subsequently appeared to influence the nature of the stressors reported by the athletes
		Chase et al. (2005)	Positive feedback from coaches, parents, and team-mates was a common source of self-efficacy
	Positive and negative social interactions	Giacobbi et al. (2004)	Athletes transitioning to first-year university used social networks to gain advice and comfort
		Gould et al. (1993)	Young athletes have difficulty receiving feedback and criticism from parents
		Tamminen (2007)	Improvements in communication may serve to reduce the stressors appraised by athletes

(Continued)

Table II. (Continued).

Theme	Sub-category	Studies	Main findings
		Udry et al. (2007)	Members of athletes' social networks may become overwhelmed by the interpersonal demands associated with interacting with athletes coping with stress and are prone to experiencing emotional depletion or exhaustion. Social interactions provide athletes with a sense of emotional support and understanding; negative aspects of social relationships with parents and coaches included perceived pressure or having unrealistic expectations and lack of player control
	High standards and social evaluation	Cohn (1990)	Frequently reported sources of stress were trying to perform up to personal standards; perceived pressure from self and others places a demand that may exceed the reward
		Gilbert (2000)	The most important stressor related to performance expectations was self-imposed
		Gould et al. (1993)	Coaches and parents may create stressful sport environments by placing too much emphasis on winning
		Reeves et al. (2009)	Only middle adolescents reported that making errors led to worrying about social evaluation by significant others
		Sagar et al. (2007)	Perceived consequences of failure included letting down significant others and negative social evaluation. The ability to achieve competitively was perceived as an indication of worth
		Udry et al. (2007)	Important others may have misconceptions about what behaviours would be considered helpful; athletes struggling with burnout identified pressure/having unrealistic expectations and lack of player control as salient negative aspects of their relationship with parents and coaches

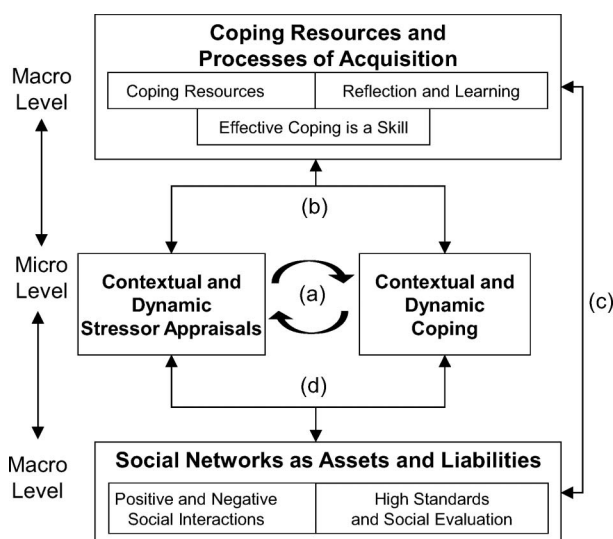


Figure 2. Synthesis of qualitative research on adolescent athletes' stressor appraisals and coping.

result of the meta-synthesis. This model is the primary outcome of the current study.

Contextual and dynamic stressor appraisals

Contextual factors influenced athletes' stressor appraisals. Giacobbi and colleagues (2004) reported dimensions of stressor appraisals for athletes transitioning to the first year of university as "being away

from home" and "academics". In a different context, such as adolescents' professional soccer clubs, stressors included social evaluation, contractual stressors, and playing at a higher level (Reeves et al., 2009). These stressor appraisals reflected the contextual demands associated with playing at a soccer academy, which likely did not emphasize academics in the same way transitioning to university would. In addition to broader contextual factors, stressor appraisals may be sport-specific or even position-specific. At a team level, athletes' stressor appraisals were influenced by perceptions of their coach (Tamminen, 2007). At the level of a specific playing position, Gilbert (2000) noted that among soccer players, one athlete "experienced a great deal of stress due to her position as a goalkeeper" (p. 237).

It is possible athletes' stressor appraisals are influenced by an accumulation of factors, which include past experiences as well as contextual conditions (Sagar, Lavalley, & Spray, 2007). Chase and colleagues (Chase, Magyar, & Drake, 2005) found that gymnasts' previous injury experiences produced feelings of apprehension, anxiety, and fear, which influenced the fear of becoming injured again. The implication is that athletes' stressor appraisals do not occur in isolation and only in relation to their immediate performance. Stressor appraisals occur in the context of athletes' entire lives and the conditions surrounding their sport experience.

Athletes' stressor appraisals were also dynamic and changed over time. In a season-long study of swimmers, Giacobbi et al. (2004) noted that athletes appraised stressors in a more positive or benign manner as the season progressed, and the authors suggested that changes in athletes' appraisals were related to changes in the athletes' social network over the season. In a study of stressor appraisals and coping over a 31-day period, Nicholls et al. (2005b) found that initially athletes were primarily concerned with their physical performance, but later in the season mental performance became a greater concern. Increases in mental performance stressor appraisals coincided with the golfers' participation in important tournaments. In the studies reported above, stressor appraisals changed in relation to context (i.e. social networks and importance of competitions).

At a micro-level, Nicholls and Polman (2008) found that some of the golfers' reported stressor appraisals remained consistent (i.e. score), while reports of other stressors such as the environment (i.e. wind, tree), performance, and mistakes varied over six holes of golf. Overall, then, changes in athletes' stressor appraisals occurred within competitive events and across longer and shorter periods of time. These changes were interconnected with developments in athletes' social networks and their continuously changing environments.

Contextual and dynamic coping

Much as stressor-appraisals changed in response to contextual conditions, coping responses were also highly contextual. It has been reported that athletes' coping appears to change as they appraise new stressors over the season. For example, Giacobbi et al. (2004) found athletes used forms of emotion-focused coping (e.g. humour/fun, venting) throughout the season, but cognitive appraisals and active cognitive efforts emerged during the latter parts of the season, possibly as adaptational responses to new stressor appraisals. Another study showed that as athletes experienced new conditions over the course of a season they appraised different stressors, which may have forced the development of new coping strategies (Eubank & Collins, 2000). Giacobbi et al. (2004) also reported that changes in athletes' use of social support influenced subsequent stressor appraisals. As coping changed over the season, athletes appeared to be more likely to appraise stressors as challenges rather than as threats. The influence of social networks in this process will be described in further detail below.

Coping was also dynamic and subject to change over longer and shorter terms. In their 31-day study of adolescent golfers, Nicholls et al. (2005b) found

athletes reported an increase in all coping functions (problem focused, emotion focused, and avoidance coping) during days 11–15, which included the athletes' most important competitions. The frequency of coping fluctuated over time, as did the use of specific coping strategies. For example, whereas problem-focused coping remained stable during days 16–25, emotion-focused and avoidance coping increased during days 21–25. There was then an increase in problem- and emotion-focused coping in the final 6 days, but a decrease in avoidance. This fluctuating pattern of coping was also found in a study of adolescent rugby players (Nicholls & Polman, 2007). Nicholls and Polman (2008) also found that golfers' coping appeared to change over the six holes as stressor appraisals changed. For example, "Dan" used "swing thoughts" (identified as a problem-focused cognitive technique-oriented coping strategy) for every hole, but also used a "shot plan" (a problem-focused shot preparation coping strategy) for holes 1, 2, 5, and 6, and he used positive appraisal (an emotion-focused strategy) for holes 3 and 4. That is, athletes used different coping strategies to deal with different stressor appraisals and in some cases the athletes appraised up to five consecutive stressors before deploying a coping strategy.

Finally, coping is dynamic in that it appears to change over the course of development. Reeves et al. (2009) reported that early adolescents used avoidance concurrently with problem-focused coping, but used few emotion-focused strategies. Middle adolescents used social support and emotion-focused strategies frequently, whereas avoidance coping was less common. Middle adolescents also employed a greater range of coping strategies to deal with appraised stressors compared with early adolescents. The use of abstract coping strategies such as using tactical concepts to improve performance may be related to the cognitive developmental status of athletes (Holt & Mandigo, 2004), although the process by which these coping strategies develop is not well understood. Gilbert (2000) attempted to describe the processes by which athletes develop coping strategies, but she reported that as the study progressed the athletes were "largely unable to unpack and discuss this process" (p. 200).

Coping resources and processes of acquisition

Coping resources. Adolescent athletes' coping was related to the development or availability of coping resources. Athletes with a "reservoir" or range of coping resources may cope more effectively with appraised stressors than athletes who do not possess a range of coping strategies (Gilbert, 2000; Nicholls & Polman, 2007). Thus, the suggestion is that the more coping strategies available to the athletes, the

more effective their coping will be. Athletes may cope most effectively by using a few “tried and true” strategies, but maintain an arsenal of back-up strategies for use in times of need (Eubank & Collins, 2000; Tamminen, 2007). There may be a reciprocal effect between the development of coping resources and the perception of pre-competitive cognitions (anxiety) as facilitative, such that as athletes develop coping resources, they begin to perceive anxiety as facilitative, which in turn facilitates the development of new coping strategies (Eubank & Collins, 2000).

Reflection and learning. The development or acquisition of coping skills appears to be related to a process of reflection and learning among athletes. Reeves et al. (2009) reported that reflection and learning was mentioned frequently by both early and middle adolescents as a coping strategy, although athletes’ awareness of coping strategies may not fully emerge until late adolescence. On the other hand, Nicholls et al. (2005b) found that when adolescents failed to cope with stressors, they reported “no coping attempt”. Thus, it appeared they were unable to reflect on coping until asked during research interviews. It appears that not all athletes engage in a process of reflection and learning about their coping efforts and it may be a process that emerges later in adolescence (Tamminen, 2007).

Effective coping is a skill. Coping is a skill that can be learned or acquired with accumulated experience. There is some evidence to suggest that older, more experienced athletes cope more effectively with stressors than younger, less experienced athletes on a team (Holt et al., 2007). Nicholls (2007a) reported that elite golfers had effective coping responses in relation to most stressors they experienced. The experiences associated with performing as a highly competitive athlete may contribute to the development of effective coping. Alternatively, athletes who are effective copers may succeed at attaining high levels of sport performance. These propositions remain unexplored and it is unclear which explanation is most accurate.

Athletes may develop coping strategies through an experiential learning process that is highly malleable to change (Giacobbi et al., 2004). This suggestion was supported by Gilbert’s (2000) study of adolescent soccer players, in which she found that three (of five) athletes used a coping strategy during the study because they had used it successfully in the past. Gilbert suggested coping is a skill and, to be most effective, coping strategies must be practised and rehearsed on a regular basis. Reinforcing the need for practising coping, Nicholls and colleagues (Nicholls, Holt, & Polman, 2005a) found athletes’ ineffective

coping was associated with strategies that were *not* well learned (such as speeding up and trying too hard).

Coping skills may be taught through interventions, such as in Nicholls’ (2007b) study, in which a golfer was provided with a coping training programme. The athlete reported using fewer ineffective coping strategies as the study progressed and a 9-month post-intervention social validation interview suggested longevity of training effects. Although Reeves et al. (2009) suggested that middle adolescence is the key phase for teaching coping skills, further information is needed regarding the timing by which adolescent athletes may acquire coping skills.

Social networks as assets and liabilities

Because of the intricate and complex nature of social networks, this category was described as having both “assets and liabilities” for athletes’ coping (cf. Udry, Gould, Bridges, & Tuffey, 1997). First, social networks influenced the ways in which athletes appraise stressors (Giacobbi et al., 2004). For example, one athlete reported that “it’s good to have a team because everyone is going through the same things . . . It helps to know you are not the only one going through it” (Giacobbi et al., 2004, p. 9). On the other hand, members of a social network may have a negative influence on athletes’ stressor appraisals. Sagar et al. (2007) noted that some athletes felt that failure made their coach unhappy, thus perceiving failure to have adverse consequences for their relationship with their coach, as well as with team-mates and parents. It is unclear whether negative interactions with parents and coaches lead to stressor appraisals, or if athletes appraise stressors and then consider the consequences of these appraisals in relation to their social network.

Second, athletes’ social networks influenced the ways in which they coped with stressors. Gilbert (2000) reported that soccer coaches emphasized a strong work ethic and encouraged athletes to continue working hard on the field even though their minds were not in the game. The author suggested that the coaches’ messages may have contributed to the athletes’ use of “working hard” and “not giving up” as coping strategies. Giacobbi et al. (2004) reported that the influence of social networks was prominent in athletes’ use of cognitive forms of coping. In terms of the influence of social networks on the development of coping, Gilbert (2000) also reported that athletes in her study engaged in social modelling of coping strategies by observing parents and coaches exhibiting certain coping behaviours and modelled these behaviours when dealing with their own stressors. Thus, it appears that individuals in the athletes’ social

networks (i.e. parents and coaches) may influence athletes' coping.

Finally, changes in social networks also appeared to have an impact on changes in athletes' coping. As the nature of social relationships changed so too did athletes' stressor appraisals and coping. Giacobbi et al. (2004) reported that as social support networks developed among competitive swimmers, two outcomes were observed: athletes began to use cognitive forms of coping, and they perceived sources of stress as challenges that may offer benefits, rather than perceiving potential for threat or harm (Lazarus, 1999). The degree to which the athletes used social support as a coping strategy was dependent on the quality of relationships.

Positive and negative social interactions. Social networks appeared to influence stressor appraisals and coping through positive and negative social interactions. In terms of positive interactions, athletes used social support to deal with appraised stressors (Chase et al., 2005; Giacobbi et al., 2004). Positive functions of social networks included providing athletes with a sense of emotional support and understanding (Udry et al., 1997). In addition to being a coping strategy in itself, positive social interactions influenced athletes' stressor appraisals as well as the development of coping skills. Giacobbi et al. (2004) provided an analysis of this relationship and reported that as athletes' social support networks developed, athletes began to use cognitive forms of coping and they perceived sources of stress as challenges that may offer benefits.

However, social interactions may have negative implications for the coping process. In a study of athletes struggling with burnout, negative aspects of social relationships with parents and coaches included perceived pressure or having unrealistic expectations and lack of player control (Udry et al., 1997). These aspects of negative social interactions may contribute to athletes' appraisal of stressors. For example, Udry et al. (1997) reported the case of an athlete who said the coach "always expects us to have a winning attitude . . . to me it seems like no one can possibly do that every single day . . . I wasn't able to do that, so it made me depressed, and it had a negative effect on me" (p. 375). The underlying causes of these negative interactions are not entirely clear; however, the authors suggested that, over time, members of the athletes' social networks became overwhelmed by the interpersonal demands associated with interacting with athletes coping with stress. That is, coaches and parents appraised stressors themselves and were prone to experiencing emotional depletion or exhaustion when dealing with athletes who were also appraising competitive stressors.

High standards and social evaluation. This category reflects interpretations about athletes' perceptions of social evaluation or high standards of individuals in their social network. This category is linked to stressor appraisals and aspects of negative social interactions. Reeves et al. (2009) noted that compared with early adolescent athletes, middle adolescents reported that making errors led to worrying about social evaluation by significant others. Athletes have described "letting down significant others" and "negative social evaluation" as common perceived consequences of failure (Sagar et al., 2007). Coaches and parents may unknowingly create stressful sport environments by placing too much emphasis on winning and too much importance on athletic performance, thus creating the perception of high standards for the athlete (Gould et al., 1993). Udry et al. (1997) suggested that important others may have misconceptions about what behaviours would be considered helpful. It is unclear when parental or coach standards are indeed "too high" for adolescent athletes, or whether improvements in communication and positive interactions may reduce athletes' perceptions of pressure. Overall, social networks serve an important, if paradoxical, function within adolescent athletes' stress and coping process. That is, social networks appear to be both an asset and a liability for athletes.

Meta-synthesis of qualitative research on adolescent athletes' stressor appraisals and coping

Based on the aforementioned categories and in order to synthesize the findings, a model of qualitative research on adolescent athletes' stress and coping is proposed (Figure 2). This model should be viewed as the primary outcome of the current study. Within this model, it is suggested that stressor appraisals and coping are interrelated at a micro level (signified by (a) in Figure 2), and the recursive nature of these interactions has been well documented. This suggests that as stressor appraisals change, so too does coping, which influences subsequent stressor appraisals. Stressor appraisals and coping are also contextual and dynamic, suggesting that they change rapidly depending on the circumstances, yet they are also bound by athletes' situational (i.e. team or position) and developmental differences. Stressor-coping interactions (b) influence the development of coping resources, such that past stressor appraisals and coping efforts affect the development of coping resources through a process of reflection and learning, and experiential learning. The acquisition of coping skills in turn affects subsequent stressor appraisals and coping episodes. The development of coping is also influenced by the nature of athletes' social networks (c), specifically through positive and

negative social interactions. Social networks (d) influence the micro-level aspects of stressor appraisals and coping efforts via positive and negative interactions, and high standards and social evaluation expressed through communication between athletes and members of their social network. Micro-level stressor appraisal and coping in turn affect relationships with members of athletes' social networks. Athletes' social networks may be a source of support or they may be viewed as potential stressors, alluding to the paradoxical influence of social networks.

Discussion

The main aim of this study was to create an integrated theoretical perspective of the qualitative adolescent sport stressor appraisal and coping literature. Having gone through the process of meta-data analysis, we produced a synthesis of the qualitative research in the area (Figure 2) that fulfilled our primary purpose. Our secondary aim was to critique theoretical and methodological issues in the literature, and this was achieved through the meta-method and meta-theory analyses conducted to complete the meta-synthesis. In the following discussion, we first consider issues related to the primary purpose before considering issues related to the secondary purpose.

The meta-synthesis (Figure 2) led us to five main conclusions about the state of knowledge in the adolescent coping literature. First, our findings confirmed that research has widely documented the dynamic, recursive process of appraisal and coping. This is theoretically consistent with Lazarus (1999) and there is no pressing need for additional qualitative research to establish the recursive process of appraisal and coping. However, new and innovative designs may help shed light on the conditions that influence the recursive process of appraisal, coping, emotions, and associated outcomes.

Second, the findings highlighted the active role of adolescents in acquiring coping resources through an experiential learning process. One issue that has yet to be widely studied is how adolescent athletes learn to cope with stressors in sport. This is an important area for future research. The third issue that the meta-synthesis revealed was the important role of social networks as a macro-level factor in the coping process. This is similar to findings by Kliever and colleagues (2006) from the area of developmental psychology, who suggested that parental modelling and family context contribute to adolescents' coping. Because social influences change as athletes develop and progress in sport (Partridge, Brustad, & Babkes Stellino, 2008), parents and coaches may play more or less important roles in the development of coping

depending on the athlete's age or level of sport participation. Thus at a macro-level, future research should examine the role of athletes' social networks in the development of coping.

This finding regarding social networks has potentially important implications for the creation of interventions to improve adolescents' coping in sport. Most previous studies have concluded with applied implications that involve helping adolescent athletes build a repertoire of coping resources and/or selecting the coping strategies that are "tried and true". We do not question these suggestions, but rather *also* highlight the importance of delivering interventions that focus on athletes' social networks, which were found to be both assets and liabilities. Thus, interventions that also target coaches, parents, and even team/peer interactions may be useful for improving adolescents' coping in sport. This issue does not appear to have been widely considered in the literature to date. This finding also reflects one of the benefits of a meta-synthesis such that by integrating findings from previous studies, it can reveal knowledge that may not be generated by a single study alone.

The fourth issue concerns a concept that our meta-synthesis revealed was relatively under-studied, namely coping effectiveness. We were able to conclude that effective coping is a learned skill because some studies have shown that experienced athletes cope better than less experienced athletes (e.g. Holt et al., 2007). There is evidence that effective coping strategies must be practised (Gilbert, 2000), and that ineffective coping is associated with strategies that are not well learned (Nicholls et al., 2005a). But, few other studies have explicitly set out to examine coping effectiveness. At a rudimentary level, it remains unclear whether adolescent athletes evaluate effective coping in terms of managing their emotions, optimizing the enjoyment and overall quality of their sport experiences, improving their performance, or a combination of all three. Furthermore, it is unclear if subjective evaluations of what constitutes effective coping changes with development. This is an important issue because of the performance orientation in sport; an issue not addressed in models of coping from developmental and social psychology. More research is needed to establish the nature of coping effectiveness and this will produce important information to help provide a foundation for interventions.

The fifth and final issue arising from the meta-synthesis was that the model produced (Figure 2) considers a wide body of research examining adolescent athletes' coping at both a micro or episodic level as well as at a macro or adaptive level (see also Skinner & Zimmer-Gembeck, 2009). To relate this research to other comparable literature

within sport, it may be valuable to consider Fletcher and colleagues' (Fletcher, Hanton, & Mellalieu, 2006) meta-model of stress, emotions, and performance. Their model provides a theoretical context for examining coping primarily at an episodic level (see Skinner & Zimmer-Gembeck, 2009), while the present meta-study highlights the relationship between coping at an episodic level and the acquisition of coping skills. The current meta-study also emphasizes the way in which social networks may serve as both assets and as liabilities for adolescent athletes. Moving forward, it would be valuable to consider the role of social networks as they relate to athletes' acquiring coping skills in an adaptive manner. That is, coping at an episodic level may contribute to adaptive outcomes such as the development of coping skills for some athletes; however, this process may be facilitated or impeded by members of the athletes' social network as well as by the athlete's interpretation of anxiety (see Eubank & Collins, 2000).

The secondary aim of the present study was to critique theoretical and methodological issues in the extant literature. The meta-theory analysis confirmed that Lazarus's (1999) theorizing has dominated the adolescent sport coping literature. We drew several conclusions from our analysis of the theory underpinning the research reviewed. Researchers would be well advised to specify exactly which elements of coping they wish to study because there are both micro and macro levels of coping. There is scope for researchers who continue to use Lazarus's (1999) cognitive-motivational-relational theory to specify which aspects of this theory they are studying. This would facilitate the integration of future studies into existing research. The need for more precise use of theory is exemplified by the fact that, within Lazarus's theory, emotion plays a key role in the coping process. However, as yet, the role of emotion in the coping process has not been clearly documented in the adolescent sport coping literature. At this time, it is unclear how adolescents cope with the negative emotions that arise from stressor appraisals versus coping with stressors themselves.

In addition to more precise use of theory, there is also an apparent need to adopt more holistic approaches to study the coping process, which has been identified as necessary for understanding the complexity of coping (e.g. Lazarus, 1999; Neil et al., 2009). It may not be possible for a single study to assess all aspects of the coping process, but it does seem important that studies attempt to embrace multiple concepts of the coping process more completely. For example, studies that move beyond appraisal and coping to also include emotion, effectiveness, and implications for behaviour within this process could make valuable contributions to the

literature. Similarly, further research is also needed to examine how social networks and adolescents' personal resources influence the coping process because previous studies examining these macro level factors have tended not to include also assessments of coping as a process. In calling for more holistic approaches, we acknowledge that the complexity of the coping process creates several methodological challenges for researchers. Researchers from social psychology have observed that whereas qualitative studies tend to examine select elements of the coping process, few studies have examined the ways in which multiple elements of the coping processes interact (Somerfield & McCrae, 2000). Although it may be difficult to study all aspects of coping, the literature could be advanced by more holistic studies.

There also appears to be scope to develop substantive sport-specific theories of coping (as opposed to broader, formal theories; Strauss & Corbin, 1998). Sport is a unique achievement context where successes and failures occur in a public setting, which differs to other achievement domains (such as school). In sport, parents and coaches are emotionally involved in the athlete's performances and can provide more immediate feedback than in other achievement domains. These unique characteristics of sport are not often accounted for in formal theories of coping. Given the likelihood of overlapping stressor appraisals from other areas of athletes' lives (i.e. school, relationships, families), it would be beneficial to examine the impact of these "external" demands on athletes' appraisal of competitive stressors and performance. Figure 2, along with previous sport-specific conceptualizations (e.g. Fletcher et al., 2006), may provide useful starting points for informing the creation of substantive sport-specific theories of coping that take into consideration the broader context of athletes' lives.

We support the continued investigation of Lazarus's (1999; Lazarus & Folkman, 1984) conceptualization of coping, although we agree with researchers who have argued that the failure to adopt diverse theories within a field of research may lead to a reduction in scholarly inquiry, creativity, and growth (Nagle & Mitchell, 1991). To move forward it may be useful for researchers to adopt different models or theories such as Taylor's (2009) stress, coping, and adaptation framework, which incorporates internal/external resources, effects of the event, appraisal, coping, and estimated distress in the study of coping (for a test of the model, see Gidron & Nyklicek, 2009). Alternatively, Jones and colleagues' (Jones, Meijen, McCarthy, & Sheffield, 2009) theory of threat and challenge states examines athletes' dispositional style, appraisals of the demand and

resources (including self-efficacy and control), emotional and physiological consequences, performance consequences, and performance outcomes. Lazarus' theory of coping is not explicitly concerned with development and was derived from research with adults (Compas et al., 2001). Thus, adolescent coping research in sport may benefit from taking a more developmental approach (see Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000; Skinner & Zimmer-Gembeck, 2009), and it may add to our understanding of adolescents' coping if researchers include different theoretical perspectives within their research.

The meta-method analysis revealed several issues, although it is important to first distinguish between qualitative methods versus methodologies. Methods are the techniques used to collect and manage data (e.g. interviews, content analysis, etc.) whereas methodologies are traditions of inquiry (e.g. ethnography, grounded theory, etc.) that provide "guiding plans" for research design. We found that researchers used various methods of data collection such as interviews, diaries, and think-aloud protocols (e.g. Nicholls & Polman, 2008; Tamminen, 2007), which is a promising development that should continue. In fact, Skinner and Zimmer-Gembeck (2007) and Somerfield and McCrae (2000) argued for more research at a micro-level using daily diaries and other such momentary recall approaches to examine coping as an interactive process in real time. However, the studies reviewed tended to use similar analytic techniques, with the majority using basic content or thematic analysis in the absence of a stated methodology (Table I). This is consistent with a "quasi-qualitative" approach, which Culver and colleagues (Culver, Gilbert, & Trudel, 2003) describe as dominating qualitative research within sport psychology.

Our findings (Figure 2) suggest that micro-level coping influences and is influenced by macro-level issues. Increased use of different qualitative *methodologies* may help enhance our understanding of the interaction of micro- and macro-level issues in the coping process (cf. Brustad, 2008). Lazarus (1999) called for the use of narrative methodologies to enable a greater understanding of the person and situational variables that contribute to different appraisals, emotions, and coping efforts. Ethnographic methodologies, which enable researchers to analyse culture or subculture, could be used to examine situational constraints or opportunities within different sport "cultures" that may impact athletes' appraisals of stressors and the development of coping. Similarly, case study methodologies require researchers to establish the boundaries of a case and can be used to help researchers explain the social and environmental factors that influence, and are influenced by, individuals' coping attempts (see

Holt & Hogg, 2002). In addition, grounded theory (Corbin & Strauss, 2008) could be used to create sport-specific theories of coping. However, there is no point in using methodologies for the sake of it. Rather, it is important that research decisions are driven by research questions. In this respect, the current synthesis provides useful direction for research questions by highlighting the need to examine social networks and ways in which athletes acquire coping skills.

To synthesize the points made above concerning coping theory and issues relating to methods and methodologies, it may be worth considering the role of theory in qualitative research. Some qualitative research can be descriptive and atheoretical and still make important contributions to the literature in areas that have not received much previous attention. However, as an area matures it becomes important for qualitative studies to be informed by previous work as a "starting point" to ensure findings do not merely replicate previous knowledge. Theories are often used to create such starting points, and qualitative studies can be informed by theory. Sandelowski (1993) explained that it is incumbent on qualitative researchers to be precise about how theory is used in a study. For example, it may be used to create a conceptual context for a study, used within the latter stages of analysis, or to help compare and integrate findings with previous research. Such clear use of theory is consistent with the arguments we put forward here.

At the procedural level, the quality of a meta-study is judged based on its adherence to principles of design. By carefully outlining the steps taken from the retrieval of the primary research reports to the final presentation of results, we have fulfilled this criterion. Ultimately it is left to the reader to evaluate the rigour of the procedures used. Although every effort was made to conduct an exhaustive search of the literature, it is difficult to ensure every relevant study is found within a specific field of study (Cooper & Lindsay, 1998). This is a limitation of all qualitative meta-studies (Paterson et al., 2001), although we did address this limitation by seeking the assistance of an expert-level searcher (cf. Barroso et al., 2003) in retrieving relevant articles.

In terms of evaluating the outcome of the meta-study, we believe that our findings have the potential to increase understanding of adolescent athletes' stressor appraisals and coping by identifying important themes at both micro and macro levels of research. We have attempted to highlight some of the implications of the theories and methods used in the area of adolescent sport stress and coping research. Overall, we have presented a conceptual model of qualitative adolescent sport coping research (Figure 2) that may inform future research and

practice. We have also presented findings relating to the use of theory and methodological issues, all of which may provide useful considerations for future research. Future studies that build upon the findings of the current research will help advance adolescent sport coping research and ultimately provide evidence that can be used to enhance young athletes' experiences in sport.

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