## SOCIAL SUPPORT AND COPING WITH INTERPERSONAL SPORT STRESS

### DURING EARLY ADOLESCENCE

by

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### Abstract

This dissertation investigated early adolescent athletes' social resources and coping responses during sport-specific stressful events. Guided by Lazarus' (1991a, 1999) Cognitive-Motivational-Relational theoretical model of stress and emotion, a multi-step approach was utilized to examine theoretical and descriptive questions about early adolescents coping and social support. Specifically, 575 adolescent team sport athletes (n = 290 male, n = 285 female) between the ages of 11 and 15 years identified the individuals who provide supportive resources to the athlete (i.e., social support network), the types of social support (i.e., perceived social support), perceptions of social support (i.e., perceived social support), as well as the coping strategies and coping function(s) used to manage interpersonal difficulties in sport.

The findings extend empirical research within the youth sport literature. An important finding concerns the relatively few coping strategies that athletes reported (M = 2.42, SD = 1.40) when asked to recall the management of a stressful interpersonal event with a semi open-ended questionnaire. Confirmatory factor analyses revealed an acceptable fit for the multidimensional structure of social support for both males (TLI = .947, CFI = .961) and females (TLI = .949, CFI = .962). Descriptively, findings demonstrated that early adolescent athletes social support network size, received social support, and perceived social support was similar to that reported in the social support literature. MANOVA analyses revealed a main effect in favour of girls, for all three social support dimensions. Structurally, support for a direct effect model between social support dimensions and coping was demonstrated. No support was found for the

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mediation of perceived social support between the relations of the other social support dimensions and coping. The structural relation, however, was moderated by gender. Received social support was related to boys coping, while perceived social support and social support network size significantly related to girls coping. The findings are discussed with respect to the implications for the conceptual understanding and measurement of early adolescent coping and social support in sport.

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To my Grandfather, E. James Hoar

The Lesson: The value of an education

#### Chapter 1

### Introduction

Competitive sport can be stressful for adolescents (Brustad, 1993a; Gould, Wilson, Tuffey, & Lockbaum, 1993). Although the pediatric sport stress literature concludes that most youth athletes adequately manage their sport stress (e.g., Donnelly, 1993; Gould, Wilson, et al., 1993; Passer, 1988), there are numerous adolescents who do experience excessive stress (Hall & Kerr, 1997). Research has demonstrated that these individuals report increased levels of competitive trait anxiety, increased burnout, decreased levels of self-esteem, decreased levels of enjoyment and satisfaction with sport experiences, low personal and team competency expectations, as well as increased state anxiety during situations where outcomes are perceived to be important (Brustad, 1993a; Gould, 1993; Gould, Wilson, et al., 1993).

Over the past two decades, sport researchers have directed considerable attention and energy towards understanding why some athletes experience such detrimental stress responses during competitive sport experiences while others do not. Research efforts have primarily focused on the identification of particular aspects of competitive sport that contribute to the experience of stress for adolescent athletes, the magnitude of stress produced by different sport-related contexts, as well as the consequences of such stress experiences. While this research has assisted in the understanding of adolescents experience of stress during sport, a more complete understanding of these individual differences would seem to include what it is that adolescent athletes actually do when they experience stress. Very little systematic research has examined *how* adolescent athletes manage or cope with stressful experiences.

Coping is most commonly defined as the cognitive and behavioural efforts used to handle demands that are perceived by the individual to be taxing (Lazarus & Folkman, 1984). Coping is conceptualized to include all thoughts and/or actions exerted by the individual in the attempt to manage a taxing demand by either changing the nature of the demand, changing some aspect of self, changing the meaning assigned or appraisal of the demand, or managing the emotional response. Coping has been identified as a critical factor contributing to the individual differences observed in athletes stress experience (Crocker & Graham, 1995; Dale, 2000; Gould, Eklund, & Jackson, 1993; Gould, Finch, & Jackson, 1993; Hardy, Jones, & Gould, 1996). Researchers have only recently begun to examine the influence of coping within the athletic context despite the abundance of literature written health, education, and psychological fields.

A second critical factor contributing to individual differences in the response of stress is social support (Aldwin, 1994; Lazarus, 1991a, 1999). Social support is formally described as the provision of social resources through interpersonal relationships, which function to enhance physical, social and emotional well being (Shumaker & Brownell, 1984). Social support is multidimensional, with research consistently demonstrating three conceptually distinct and related dimensions including (a) social support network, differences in interpersonal connectedness; (b) received social support, social resources actually given to the supported individual; and (c) perceived social support, the individual's sense of being supported (Barrera, 1986; Sarason, Sarason, & Pierce, 1990). Empirical evidence reveals that social support contributes to health related outcomes associated with stress (Cohen & Syme, 1985; Komproe, Rijken, Ros, Winnubst, & Hart, 1997). It is proposed that the interpersonal relationships adolescents maintain within

sport, such as family, friends, and coaches, all have the potential to assist an adolescent athlete to successfully manage stressful transactions experienced in sport (Brustad, 1993b; Coakley, 1993). While some research has examined social support in athletes (e.g., Hardy, Richman, & Rosenfeld, 1991; Rosenfeld, Richman, & Hardy, 1989; Udry, 1997), very little research has examined the mechanisms through which social support functions to influence the well being of athletes. Conceptually, it is likely that social support functions to influence well being during stressful transactions through the coping process.

Based on theory and empirical evidence, two conceptual models are hypothesized to describe the relation between social support and coping. A direct effects model posits that each dimension of social support (i.e., social support network, received social support, perceptions of social support) directly predicts coping during a specific stressful transaction. In contrast, a mediation model holds that the relation between coping and the two social support dimensions of social support network size and received social support is mediated by perceptions of social support. It is a primary objective of this dissertation to compare these hypothesized models to determine which model best describes the relation between social support and coping within an adolescent athlete sample.

Understanding the relation between social support and coping may be particularly important for gaining insight into the experience of stress during *adolescence*. It is well documented that adolescents undergo a variety of maturational changes such as biological and sexual maturity, increased cognitive capacity, development of differentiated and abstract cognitive abilities, the formation of an autonomous identity apart from family, and sustained relationships with peers (Gaber & Brooks-Gunn, 1996;

Peterson & Lefert, 1995). Further, these maturational changes may contribute to shifts observed in the social interactions and relationships formed during adolescence, as well as psychological and emotional experiences such as stress and coping (Belle, 1989; Brustad, 1998; Lazarus, 1999; Peterson, Kennedy, & Sullivan, 1991; Weiss & Bredemeier, 1983). Empirical research within the education, health, and psychology fields consistently demonstrate age and gender related differences in social support and coping during adolescence (Belle, 1989; Berndt & Hestenes, 1996; Boekaerts, 1996; Fields & Prinz, 1997; Seiffge-Krenke, 1995; Shulman, 1993). Such research, however, has been scant within the sport literature.

The general purpose of this dissertation is to examine the nature of early adolescent athletes' social support and coping with sport specific stress. To address this purpose, a number of specific objectives will be examined including, i) to obtain descriptive evidence of early adolescent athletes social support network size, received social support resources, perceptions of social support from specific providers within the sport context, coping strategy use, and the functional use of coping strategies for sport specific stress, (ii) to evaluate the multidimensional structure of social support within the sport context, (iii) to evaluate two conceptual models describing the relation between social support and coping for early adolescent athletes, iv) to examine gender as a possible moderator of the social support and coping relation during early adolescence, and v) to examine gender differences in the size of early adolescent athletes' social support network, the amount of received social support, the perceptions of available support, and functional use of coping strategies.

### Chapter 2

#### *Literature Review*

### 2.1 General Conceptualizations of Stress in Sport

"...When we do simulations of our routine, its like I get a bit of the butterflies because like, it is sort of like judging where we are right now. So if we do bad, then our coach will be really disappointed. So it is like I get nervous and don't want to mess up in practice". (Alice, 14 years, Synchronized Swimming)<sup>1</sup>.

"...just the little things, like the coach getting mad at you for no apparent reason and you just don't understand where they're coming from..." (Barbara, 14 years, Synchronized Swimming)<sup>2</sup>.

"Like I am trying to get my routines good for competition and my coaches are like, "ooh that's not good", so you've got to make it better. Its just really not hard, but its harder than like if you are doing skills that you're learning new." (Courtney, 14 years, Gymnastics)<sup>3</sup>.

Sport can be 'stressful' for adolescent athletes (Brustad, 1993a). Stress is a multifaceted phenomenon and is generally conceptualized within the sport literature, as (i) a physiological state, (ii) an environmental event, or (iii) an experience that arises from the transaction between the person and the environment (Aldwin, 1994; Frank, 1994; Lazarus, 1991a; Wheaton, 1997). The athlete's quotes describe the different conceptualizations of stress. Studies examining athlete's experience of stress since the early 1990s has predominately utilized the transactional perspective to guide research (Hardy et al., 1996). Richard Lazarus is the major proponent of this perspective. He defines stress as "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well being." (Folkman, 1984, p. 840). Defined in this manner, stress is neither a physiological response (i.e., a troubled reaction) nor a stimulus (i.e., a noxious stimulus), but a

combination of both stimulus and response (Lazarus, 1999). Lazarus (1999) contends that stress is generated by the assignment of meaning about what is happening between the person and the environment. For example, Courtney states that 'making the routines better is not that hard, but it is harder than you are doing skills that you're learning new'. In this quote, Courtney explains that the condition of 'making routines better' is not threatening in general or during times when she is first learning skills that make up the routine. To this athlete, competition preparation influences the meaning of 'making routines better' so that it is significantly more threatening or stressful in that circumstance. The transactional perspective of stress as theorized by Lazarus (1991a, 1999) will be the theoretical framework of this dissertation research.

# 2.2 Cognitive-Motivational-Relational Model of Stress and Emotion: A Meta-Theoretical Framework for the Examination of Stress

Lazarus' (1991a) Cognitive-Motivational-Relational model of stress and emotion offers general propositions about the stress process. A relational approach to stress asserts the existence of a particular type of relation between the person and environment. That is, in order for the relation to be evaluated as stressful, certain conditions must be met. The person must strive to obtain something within the environment (Lazarus, 1999, 2000a). In the absence of a goal or a personal stake, the encounter cannot generate stress. Further, an evaluation of the potential impact of the environment in facilitating or thwarting goals that are deemed important to the person is also a necessary and critical component in the generation of stress within a person-environment relationship (Lazarus, 2000a). The evaluation of one's personal stake in the encounter is a function inherent of the person-

environment relation and thus, is theorized to mediate the person-environment relationship. Formally, this evaluation process is labelled cognitive appraisal and coping. Cognitive appraisal and coping are interdependent processes of which the activation of both is necessary in the stress experience (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Lazarus, 1991a, 1999).

2.2.1 Cognitive appraisal. Cognitive appraisal is a subjective judgement leading to the generation of personal meaning of the person-environment relationship during an encounter (Folkman, 1992a; Lazarus, 1991b). Its purpose is to (a) indicate whether or not the encounter has adaptational significance for the person's well being, and (b) if it is significant to a person's well being, to classify the encounter in terms of relative harm or benefit to the individual (Smith, 1993). Appraisal varies and is subject to modification as the encounter enfolds. Associated with this process are cognition, subjective feeling, physiological changes, and action tendencies (Lazarus, 1991a). These responses prepare and mobilize the person to manage the person-environment relationship (Smith & Lazarus, 1993).

Cognitive appraisal is theorized to have two interrelated processes, primary and secondary appraisal. During primary appraisal, the individual evaluates the potential impact of the environment (i.e., threat, loss, harm, or challenge) to personal well being. It is an assessment of whether the situation is important (i.e., goal relevance), whether personal goals are being attained or threatened (i.e., goal congruency/incongruency), and the type of ego involvement activated (Lazarus, 1991a). During all or most emotions, diverse aspects of self-identity or personal commitments such as self- and social esteem,

moral values, ego-ideals, meanings and ideas, and other persons and their well being are involved (Lazarus, 1991a). When personal commitments, in the form of important goals and core beliefs of the ego-identity, are at stake a person is likely to perceive stress (Folkman, 1984, Lazarus, 1991a).

Primary appraisal assesses "What do I have at stake in this encounter?" whereas, secondary appraisal is the assessment of "What can I do?" (Folkman, 1992a). Secondary appraisal is an evaluation of whether any given action might prevent harm, ameliorate it, or produce additional harm or benefit (Lazarus, 1991a). It is an evaluation based on an assessment of blame and credit of who is responsible, coping options available to deal with the situation, and whether for any reason things are likely to change psychologically for the better or worse (Folkman & Lazarus, 1990; Lazarus, 1991b). Secondary appraisal is not a process of lesser importance or of secondary timing, compared to 'primary' appraisal, but rather a process of different content. Essentially, primary and secondary appraisals operate in cooperation with each other to form a subjective judgement regarding the subjective meaning of the person-environment relation during an encounter.

The subjective judgement, or cognitive appraisal, formed during a specific encounter is influenced by a number of antecedent and person characteristics (Folkman & Lazarus, 1990; Lazarus, 1999). The nature of the danger, its imminence, ambiguity, and duration are environmental factors that may affect cognitive appraisal (Folkman & Lazarus, 1990; Lazarus, 1999). Patterns of motivation (e.g., values, commitments, and goals), beliefs about oneself and the world, and recognition of personal resources for coping (such as social support) are person factors that may affect cognitive appraisal transactions (Folkman & Lazarus, 1990). Difference in the influence of these various

antecedent factors upon cognitive appraisal help to explain quantitative and qualitative individual differences in the experience of psychological stress (Folkman & Lazarus, 1990).

2.2.2 Coping. Coping is theorized to be the second mediator within the stress process (Folkman & Lazarus, 1988). Coping is defined as "constantly changing cognitive and behavioural efforts used to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person." (Lazarus & Folkman, 1984, p.141). Once psychological stress is experience, the person must deal with or manage the emotional state of harm/loss, threat, or challenge. Thus, the initial appraisal of the person-environment relation influences the coping process. Cognitive appraisal influences coping through (a) determining which efforts are available to the individual within his/her coping repertoire, (b) what available coping efforts will effectively manage a troubled transaction, and (c) the degree to which the individual can effectively execute coping efforts to bring about desired outcomes (Folkman & Lazarus, 1990). Coping, in turn, changes the nature of the person-environment relation as well as subsequent appraisal, emotion and coping (Lazarus & Folkman, 1984; Lazarus, 1991b). In effect, an individual will engage in coping responses in order to reduce the environmental demand personal resources discrepancy. The stress (emotion) – coping process as theorized within Cognitive-Motivational-Relational model is shown in Figure 2.1 (Lazarus, 1991a, 1999).

To understand coping during a transaction, it is crucial to discern the "with what" the person is coping with, not simply a description of the coping experience (Lazarus & Lazarus, 1994). People do not experience the objective environment in the same manner.



Figure 2.1. Cognitive-Motivational-Relational theoretical model of stress and emotion (Lazarus, 1991a, 1999).

For example, participation in Olympic competition, a major event that is potentially stressful, affects athletes differently (Gould, Eklund, et al., 1993). Differences in cognitive appraisal of the objective event bring about differences in coping action. Thus, coping is best understood when assessed in light of individuals' cognitive appraisal (Lazarus & Lazarus, 1994).

Coping is theorized to have two broad-based functions (Lazarus & Folkman, 1984). Problem-focused coping reflects both cognitive and behavioural efforts to obtain information about what to do and/or mobilize actions for the purpose of changing the reality of the troubled person-environment relation (Folkman & Lazarus, 1990; Lazarus, 1993a, 1999). In most cases, problem-focused coping strategies are exercised when the individual perceives the troubled person-environment transaction to be amendable to change through action (Lazarus, 1993b). Emotion-focused coping, on the other hand, reflects cognitive and behavioural efforts to regulate emotions generated by the personenvironment relation *without* changing the realities of the stressful situation (Folkman & Lazarus, 1990; Lazarus, 1993a, 1999). It is theorized that emotion-focused coping efforts operate in one of two capacities: (i) to change the personal meaning of what has happened by reappraising the stressful interaction in a more benign and less threatening way, and/or (ii) to change the way in which the stressful interaction is attended to (as in vigilance or avoidance) (Lazarus, 1993a; Lazarus & Lazarus, 1994).

### 2.3 Conceptual and Measurement Issues Related to Coping

2.3.1 Coping stability versus coping as a process. A key tenet of the Cognitive-Motivational-Relational theory is that coping is a process (Lazarus, 1991a). That is, coping is conceptualized to fluctuate in accordance to changing person-environment transactions (Aldwin, 1994; Ayers, Sandler, & Twokey, 1998; Coyne & Gottlieb, 1996). Lazarus and Lazarus (1994) argue, "coping is not just a fixed set of strategies that are drawn on when they are needed, but a changing pattern that is responsive to what is happening" (p. 153). Individual differences in coping are therefore due to the variability within and among the stressful situations. Conceptualized in this way, researchers focus on what the person *actually* does in particular situations, and how thoughts and actions are responsive to the environment as the stressful episode unfolds (Aldwin, 1994; Ayers et al., 1998; Coyne & Gottlieb, 1996).

It has been argued that "people do not approach each coping context anew, but rather bring to bear a preferred set of coping strategies that remains relatively fixed across time and circumstances" (Carver, Scheier, & Weintraub, 1989; p. 270). Coping researchers, who support this argument, assume that coping is stable and consistent across stressful transactions (Aldwin, 1994; Coyne & Gottlieb, 1996; Schwarzer & Schwarzer, 1996). Coping is assessed through the endorsement of strategies that are *usually* employed to handle problems, without attention paid to specific stressful episodes (Aldwin, 1994; Schwarzer & Schwarzer, 1996). It is assumed that (a) individuals employ the same coping strategies in dealing with different stressful problems, and that (b) the generalized descriptions of coping accurately describe specific coping behaviours used during specific stressful encounters (Aldwin, 1994). Thus, any individual differences in coping are due to differences in personal coping styles. Schwarzer and Schwarzer (1996) comment that while the "coping style" perspective helps to reduce the complexity of coping, it does so at a high price: "It assumes that uniqueness of situation-specific coping

responses only represents a negligible aspect" (p.108). Lazarus and his colleagues (Folkman & Lazarus, 1990; Lazarus, 1993a; Lazarus & Lazarus, 1994) comment that while it is legitimate and useful to assess stable patterns of coping, it is only part of the picture. Whether coping is assessed as a stable or contextual construct is like looking at different sides of the same coin (Lazarus, 1991a).

The assessment of coping from both coping style and transactional coping perspectives has traditionally used very similar methodology (Aldwin, 1994). Typically, coping is assessed through a standardized instrument, with differences between the two approaches highlighted only by the instructions provided to complete the coping measure. However, it is argued greater attention needs to be applied to the types of measures employed and consequently the conclusions that are drawn (Ayers et al., 1998; Coyne & Gottlieb, 1996; Schwarzer & Schwarzer, 1996). Ayers et al. (1998) note that while researchers tout the importance of adopting a transactional perspective, the typical approach in developing and using existing coping measures has followed a coping style perspective.

The use of standardized coping instruments carries the implication that people can be characterized by some preferred ways of coping during stressful encounters and that they continue to apply the same strategies over time (Coyne & Gottlieb, 1996; Schwarzer & Schwarzer, 1996). Thus, the use of standardized coping instruments appears to be appropriate for those researchers who adopt a coping style perspective. Further, because measures of coping styles are intended to assess relatively stable dimensions of coping, it is important to establish adequate psychometric properties; including internal

consistency, test-retest reliability, and a stable factor structure (Ayers et al., 1998; Parker & Endler, 1992; Schwarzer & Schwarzer, 1996).

A common criticism of coping measures is the failure to establish recommended standards of psychometric reliability and validity (e.g., Crocker, Kowalski, & Graham, 1998; Schwarzer & Schwarzer, 1996; Stone & Kennedy-Moore, 1992). However, the failure to establish adequate psychometric properties may not lie in the ability of the instrument to capture the construct coping, but rather due to the inappropriateness of coping checklists to assess coping as a process. Coyne and others (Ayer et al., 1998; Coyne & Gottlieb, 1996; Schwarzer & Schwarzer, 1996) assert that there is considerable ambiguity and inconsistency in what standardized coping checklists assess in specific situations and that its use is incompatible with the transactional perspective.

It is further argued that standardized coping checklists are developed based upon a narrow conception of adult coping efforts and consequently is not capable of capturing the full range of thoughts and actions that are employed during a specific situation (Compas, 1998; Coyne & Gottlieb, 1996). This provides a limited and potentially distorted picture of the coping process especially for adolescents who are in the process of developing coping strategies required to handle complex demands within adulthood (Aldwin, 1994; Compas, 1998).

An additional measurement issue is the debate regarding the appropriateness of applying traditional psychometric criteria to the interpretation of coping scale scores (Coyne & Gottlieb, 1996). Parker and Endler (1992) argue that it is essential that coping scales be reliable as determined through traditional psychometric methods. Other researchers (e.g., Aldwin, 1994; Coyne & Gottlieb, 1996; Folkman, 1992b; Schwarzer &

Schwarzer, 1996; Stone & Kennedy-Moore, 1992) argue that reliability of coping scales is not conceptually compatible with the transactional perspective. For example, the conceptual understanding of coping to vary across time and situations, suggests that testretest reliability (as a measure of construct stability over time) is an inappropriate criterion (Coyne & Gottlieb, 1996; Schwarzer & Schwarzer, 1996). Nor does internal consistency necessarily make sense. If an individual effectively employs a given strategy during a specific encounter, it is not reasonable to expect that other strategies would also be used. When one item is used at the expense of other items within the same strategy, internal consistency scores can be dramatically affected (Stone, Greenberg, Kennedy-Moore, & Newman, 1991; Stone & Kennedy-Moore, 1992).

The decision to use a standardized coping checklist needs to be carefully considered (Aldwin, 1994; Ayers et al., 1998; Coyne & Gottlieb, 1996). Researchers are encouraged to consider the use of a broader range of methods to assess coping such as semi-structured interviews and customized checklists tailored to specific hypotheses and objectives clearly articulated within the design of the investigation (Ayers et al., 1998; Coyne & Gottlieb, 1996; Schwarzer & Schwarzer, 1996; Stone & Neal, 1984). Within the developmental literature, Compas and his colleagues (Compas Malcarne, & Fondacaro, 1988; Compas & Williams, 1990; Compas, Worsham, Ey & Howell, 1996) employed an open-ended instrument for adolescents to self-identify coping strategies used during a recent stressful encounter.

The current research is conceptualized and guided by a transactional perspective to stress and coping. Specifically, a description of the relation between social support (a coping resource) and coping within a stressful sport context among male and female

adolescent athletes is examined. Careful consideration of the purposes and hypotheses of the study (see Section 2.9) rendered the modification of Compas and colleagues' (Compas et al., 1988; Compas & Williams, 1990; Compas, et al., 1996) open-ended coping instrument specifically for the study.

2.3.2 Coping operationalized. What constitutes as coping is one of the most discussed issues in the research (Ayers et al., 1998; Schwarzer & Schwarzer, 1996). Coping has been described in the literature as a strategy, a tactic, a response, cognition, or behaviour (Schwarzer & Schwarzer, 1996). Lazarus and Folkman's (1984) definition limit the conceptualization of coping to include only cognitive and behavioural efforts. Thus, this definition rejects the notion of coping as a habitual, autonomic, or unconscious response, an issue that is heavily debated in the literature (Coyne & Gottlieb, 1996). Further, a coping strategy need not be successful or adaptive to be classified as coping (Folkman et al., 1986; Folkman & Lazarus, 1990; Lazarus, 1993a). Coping is simply those efforts made to manage the demands of the situation, whether or not those efforts are successful (Folkman, et al., 1986). Whether a coping strategy is "good" or "bad" for adaptation depends on the type of person, the type of threat, the stage of the stressful encounter, and the outcome modality being studied (e.g., morale, social functioning, or somatic health) (Lazarus, 1993a, 1999). The choice of coping strategy, therefore, will vary with the adaptational significance and requirements of threat, which will vary over time (Lazarus, 1999).

When researchers attempt to identify specific coping strategies employed during specific transactions, such as planning, acceptance, seeking social support; coping is

assessed at the micro-level (Compas, et al., 1988; Crocker, et al., 1998). The majority of research focused on identifying specific coping strategies has primarily been from adult samples (e.g., Carver et al., 1989; Gould, Eklund, et al., 1993; Gould, Finch et al., 1993; Park, 2000). Relatively fewer studies have attempted to identify coping strategies commonly employed by adolescent samples (e.g., Gould, Udry, Bridges, & Beck, 1997; Ryan-Wenger, 1992).

Developmental coping researchers advocate that the assessment of coping at the micro-level is necessary for understanding the subtlies of the coping process among children and adolescents across different domains or contexts (Compas, Malcarne, & Banez, 1992). This may be especially important when understanding coping in terms of individual differences (i.e., biological, social, cognitive development) and different environmental situations (e.g., school achievement, sport). There are not, however, adequate measurement instruments to assess individual differences in coping among adolescents. Typically, coping research has employed standardized coping checklists that were developed from adult samples, and there is a lack of agreement about the most appropriate categories that best describe the coping process of adolescents (e.g., Crocker & Isaak, 1997; Smith, Smoll, & Ptacek, 1990). Further, the coping measures have not been well validated for an adolescent population (Crocker et al., 1998). Consequently, research has not yet determined whether items on the coping instruments are representative of adolescent coping efforts.

Not all theoretical coping questions are best answered by micro-analytic methods. For example, Aldwin (1994) asserts that questions pertaining to coping stability are difficult to answer by examining the specific coping strategies. During a stressful person-

environment transaction such as an athletic competition, there may be many different ways to handle the resultant psychological stress. Micro-analysis assessment of repeated occurrences of the transaction (e.g., multiple athletic competitions) may reveal that a variety of different individual coping strategies are used across multiple competitions. Such a result leads to the conclusion that coping is unstable over time. However, it is plausible that the different individual coping strategies employed were directed towards one purpose (i.e., changing the environmental stressor, or managing emotions). Thus, it is important to address the strengths and weaknesses of the types of assessment available in order to determine which methods are best for examining the theoretical operations of the coping process.

2.3.3 Coping dimensions. The number of specific coping strategies that an individual can apply in any trouble person-environment transaction is endless (Schwarzer & Schwarzer, 1996). Theoretically and empirically, researchers have attempted to reduce the number the total possible responses to a more parsimonious set of dimensions (Aldwin, 1994; Ayers et al., 1998). "Conceptualized dimensions are a prerequisite of coping measurement because a pure inductive collection of many single responses that have been factor analyzed would result in an unstable solution and could hardly be replicated in further studies" (Schwarzer & Schwarzer, 1996; p.110). Most commonly coping has been classified by the function or the purpose it is intended to serve (Compas, Worsham, & Ey, 1992; Crocker et. al., 1998). In the pediatric sport coping literature, two sets of functional coping categories have emerged including problem-focused/emotion-focused coping, and approach/avoidance coping.

Problem-focused coping includes both cognitive problem-solving efforts (e.g., planning, problem-solving) and direct behavioural efforts (e.g., active coping, informational seeking, increased effort) that functions to alter the person-environment transaction by acting upon the environment (Folkman & Lazarus, 1990; Lazarus, 1991a). In most cases, problem-focused coping strategies are exercised when the individual perceives the troubled person-environmental transaction to be amendable to change through action (Lazarus, 1991a). Perception of coping options, possible consequences of the coping efforts, and necessary skill to produce desired actions assist the individual in determining whether confrontive problem-focused coping efforts will bring about the desired outcome (Crocker et al., 1998). There are, however, occasions when the transaction is appraised to be controllable, and yet problem-focused coping is not employed. Situations where this becomes particularly evident are during interpersonal transactions (Lazarus & Lazarus, 1994). The appraisal of short and long-term interpersonal and social consequences of specific expressions and behaviour may bring about coping efforts that result in quite different behaviour than expected (Crocker et al., 1998). For example, to dissipate the distress experienced during a coach-athlete argument, an athlete may cognitively disengage rather than increase effort to have the coach understand her point of view because such behaviour could increase the distressful experience.

The second function of coping, emotion-focused, is directed towards managing emotional responses to a troubled person-environment transaction (Lazarus, 1991a). Seeking social support for emotional reasons, acceptance, wishful thinking, venting of emotions are all examples of emotion-focused coping efforts (Carver et al., 1989;
Crocker & Graham, 1995). These coping strategies are typically used when problemfocused efforts do not alleviate the emotional distress and when the person-environment transaction is resistant to change (Lazarus & Lazarus, 1994).

Another approach to capture coping dimensions is to categorize coping as either approach or avoidance coping. Efforts to direct attention towards the problem in an effort to prevent or control it are referred to as approach (or vigilant, monitoring, sensitization) coping (Ebata & Moos, 1991; Folkman & Lazarus, 1990; Miller, Brody, & Summerton, 1988). These efforts function to alter the emotional response by (a) leading to plans of action that act directly on the troubled person-environment transaction, and (b) by directly affecting the cognitive appraisal underlying the emotional response (Folkman & Lazarus, 1990). In contrast to approach coping, efforts to divert attention away from the source of distress are referred to as avoidant (or blunting, repression) coping (Ebata & Moos, 1991; Folkman & Lazarus, 1990; Miller et al., 1988). Folkman and Lazarus (1990) comment that coping by avoidance methods is one of the most common ways in which people deal with stress. Watching a funny movie, jogging, taking a vacation are all examples of avoidance coping strategies. Avoidance efforts primarily function to remove oneself from the source of distress thereby neutralizing the distressing emotions and, in some cases, to improve the emotional state of the individual (Folkman & Lazarus, 1990). Interview data from U.S. Championship figure skaters (e.g., Gould, Finch, et al., 1993) and U.S. alpine and freestyle ski team members (e.g., Gould, et al., 1997) attest that athletes use avoidance strategies to deal with the many demands of competitive sport (such as external pressure regarding potential to make it to the top, high performance

expectation, time demands, financial concerns, conflict with coach, and physical demands on the body).

Concern has arisen regarding the inconsistency of items in standardized coping checklists to determine the intended coping function from one sample to the next as well as across different person-environment transactions (Crocker et al., 1998; Parker & Endler, 1992; Spirito, 1996). Traditionally, a priori or factor analytic techniques were used on the items of coping scales to establish higher order functions of coping. However, a single coping strategy can take on multiple functions for a specific personenvironment transaction (Lazarus, 1991a). For example, developing a plan to execute a play against a difficult opponent during a game of basketball is likely to (a) increase feelings of control over the opponent (i.e., emotion-focused coping), (b) dictate a series of successful movements against the opponent (i.e., problem-focused coping), and (c) avoid possible defeat by the opponent (i.e., avoidance). Furthermore, the age of the individual as well as the gender may affect the intended functional purpose of a specific coping strategy. Compas et al. (1988) reported that young adolescents reported coping strategies that served a specific function, while the older adolescents reported using coping strategies that served more than one function.

Stone and others (Stone & Neale, 1984; Compas et al., 1988; Coyne & Gottlieb, 1996) recommended open-ended coping instruments for the examination of coping function as measured by the endorsement of specific coping strategies. The advantages of the open-ended instrument are that it is shorter in length compared to a standardized coping checklist and permits for a wider array of coping strategies to be identified. An expert or the individual can then classify coping strategies into higher-order functional

coping units. Compas and his colleagues (Compas et al., 1988; Compas & Williams, 1991; Compas et al., 1996) used an open-ended coping measure to assess coping of older children and adolescents. The study participants listed all possible ways that the stressful situation could be managed and then placed a checkmark beside the coping strategies that were actually used. Researchers and/or the participants then classified the coping strategies endorsed into the functions of problem-focused coping, emotion-focused coping, and dual focused coping (Compas et al., 1988; Compas et al., 1996).

Based on the advantages of open-ended measures, I adopted the methods from Compas et al. (1996). A modified open ended coping instrument, the Youth Coping Questionnaire (YCQ), was adapted to assess adolescent athletes coping within the current research. The YCQ assesses problem focused coping, emotion focused coping, and avoidance functional coping. Participants first list all coping strategies used to manage the identified stressful situation. Athletes then indicate the function(s) each strategy intended to serve based upon definitional descriptions of each function (see Section 3.2.3 for a detailed description of the YCQ).

## 2.4 Moderators of Adolescent Coping

Adolescence has been identified as a critical period for the development of coping skills for psychosocial adjustment and general adaptation (Aldwin, 1994; Feldman, Fisher, Ransom, & Dimiceli, 1995). It is a developmental period in which the individual is confronted with a series of complex and interrelated changes and events that must be mastered or managed (Seiffge-Krenke, 1995). Upon achieving early adolescence, a child experiences a number of biological, cognitive, social, and emotional changes including,

(a) puberty, including adult stature and reproductive capabilities, (b) cognitive abstract thinking, (c) peer group conformity and pressures to try new experiences, (d) changes in school structure, (e) gender intensification, (f) changing relational dynamics with parents and family, and (g) shifting social expectations (Graber & Brooks-Gunn, 1996; Petersen et al., 1991). The experience of such maturational events have been empirically linked with elevated levels of stress that adolescents must manage (e.g., Greene & Larson, 1991; Omizo, Omizo, & Suzuki, 1988; Smetana, Yau, Restrepo, & Braeges, 1991; Timko, Moos, & Michelson, 1993). Additionally, adolescents growing need for autonomy places the onus on them to manage challenges and stress with less guidance from adults than before (Feldman et al., 1995). Further, this occurs at a time in the individuals' life when there is minimal life experience to draw from and when their egocentrism makes personal problems loom large (Feldman et al., 1995).

Research demonstrates that adolescents respond to increases in stress in a variety of different ways, rather than with a uniform response (Compas et al., 1988; Gould, Wilson, et al., 1993). Thus, individual differences must be considered when understanding adolescents coping. The transactional perspective asserts that individual differences in coping are best understood when examined relationally between the environment and the person (Coyne & Gottlieb, 1996; Lazarus, 1991a). That is, a relational approach to stress considers not only the environmental stimulus, but also the personal characteristics that make a person vulnerable to it (Lazarus, 1999). While a number of different factors that have been identified in the literature that contribute to differences in coping among adolescents, this dissertation will consider three different potential moderators. The three factors considered include age, gender, and sport context.

The following sections will review the literature examining the independent and combined contributions of these moderating variables on individual differences of adolescent athletes coping.

2.4.1 Age as a Moderator of Adolescent Coping. The age of the individual has been observed to contribute to individual differences in adolescents coping (Aldwin, 1994; Boekearts, 1996; Fields & Prinz, 1997; Seiffge-Krenke, 1995). With respect to age, extensive empirical research shows that adolescents experience stress and cope differently then adults (Boekaerts, 1996; Fields & Prinz, 1997; Frydenberg, 1997; Hoffman, Levy-Shiff, Sohlberg, & Zarizki, 1992; Rice, Herman, & Petersen, 1993). In general, as adolescents deal with a variety of normative (e.g., physiological, social, intellectual, and school changes) and non-normative (e.g., academic achievement, family conflict, illness, and death) stressors, coping increases in sophistication across the adolescent age period (Boekearts, 1996; Compas, 1998; Fields & Prinz, 1997; Frydenberg, 1997). Specifically, both the structure of coping within an individual's coping repertoire (i.e., the number and type of cognitive and behavioural strategies) and pattern of coping strategies used change as the individual matures to adulthood (Ayers et al., 1998; Compas et al., 1988; Fields & Prinz, 1997).

Fields and Prinz (1997) conducted a meta-analysis of the published child and adolescent coping research in order to form generalizations about the coping process with respect to chronological age. Adolescent coping, when compared to childhood coping, reflected (a) the employment of fewer specific coping efforts overall, and (b) greater coping strategy-stressor specificity. The authors also concluded that with age, adolescents

develop a greater variety of cognitive strategies within their coping repertoire. Although this seems paradoxical, this conclusion was drawn from research that assessed the possible strategies that the adolescent reported that *could* be used during any stressful situation. When asked to report strategies that were *actually* used, only a select few cognitive coping strategies were actually employed by both early and late adolescents. However, late adolescents reported a greater number of cognitive strategies that *could* be used compared to the early adolescents. In other words, early adolescents typically reported a similar number of cognitive strategies that were actually used compared to those that could be used. Late adolescents, on the other hand, reported a significantly smaller number of cognitive coping strategies actually used, compared to the number of cognitive coping strategies that could possibly be employed. The researchers also reported that early adolescents tended to use more emotion-focused strategies than problem-focused, while older adolescents tended to employ more problem-focused strategies than emotion-focused. Additionally, it was found that as adolescents aged, the avoidance coping strategies employed changed from being primarily behavioural (e.g., watching TV) to cognitive (e.g., day dreaming).

Most of the research examining age related differences in adolescent coping has been guided by adult models of coping that are extended to adolescents (Aldwin, 1994; Boekaerts, 1996; Seiffge-Krenke, 1995). Adolescent coping researchers have recently expressed concern with this practice (Boekaerts, 1996; Compas, 1998; Lazarus, 1999). It is argued that the use of adult coping models does not permit researchers to examine mechanisms unique to adolescence that contribute the moderating influence of age during this stage of the lifespan (Compas, 1998). The unique challenges inherent to adolescence

and the limited resources available during this phase of development contribute to an experience of stress that is different from adults. Conceptually valid theoretical framework and measurement tools are needed to appropriately study mechanisms related to the *developmental* nature of stress and coping with an adolescent population (Compas, 1998; Seiffge-Krenke, 1995).

In its current state, the adolescent coping literature has failed to examine coping from a *developmental perspective* (Compas, 1998; Lazarus, 1999). Rather, research continues to demonstrate age-related differences. A notable exception is a monograph published by Inge Seiffge-Krenke in 1995. Drawing on extensive data from a series of studies with a total of 2176 German adolescents (ages 12-19 years) and more than 1000 adolescents from Israel, Finland, and the United States, Seiffge-Krenke (1995) concluded that age 15 years appears to be the critical age for achieving a maturational status that reflects more sophisticated coping.

At about age 15 in Seiffge-Krenke's data, adolescence seems to be marked by the development of cognitive processes from simple, concrete, and more self-centered thinking to *complex, abstract,* and *relational thinking*. Early adolescents who operate at earlier level of social cognitive maturity are, for example, unlikely to differentiate between sources of support. They are less able to recognize links between current behavior and long-range outcomes and they are possibly more motivated by self-centered needs. In contrast, late adolescents, having already reached a more mature social cognitive level, select social support strictly in accordance to the problem at hand, consider current options more often, think about the future consequences of their actions, and reflect about their position with respect to the perspectives of others" (as cited in Lazarus, 1999; p. 181-182; italics added.)

Recently, two conceptual models embedded within the theoretical framework of

Lazarus (1991a) Cognitive-Motivational-Relational theoretical model have been

advanced in the literature to assess adolescent coping. Monique Boekaerts (1996) posited

that adolescents actively construct and regulate their environment. This is accomplished through appraisal and emotion evaluations, as well as coping actions (Boekaerts, 1996). Cognitive, physical, and psychosocial maturation during adolescent development impacts both appraisal and coping processes. Specifically, maturation of self-schema and belief systems (including personal and social resources) enable adolescents to become more skilled at appraising factors such as the meaning of the situation, personal ability to control the situation, changeability of the situation on its own, possible recurrence of the situation, uncertainty created by the situation, and personal experiences with that type of situation (Boekaerts, 1996). A specific construction, or appraisal, of the environment acts as a strong steering mechanism for coping intention (e.g., problem-focused, emotionfocused, avoidance). It is assumed that through experience with stressors and modeling within an individual's environment that an adolescent's coping repertoire widens. Boekaerts suggested that a coping repertoire is the learned sequences for controlling specific problems and regulating specific emotions. Thus, it is hypothesized that adolescent development both influences the appraisal-coping process and is influenced by the appraisal-coping process.

Similar to Boekaerts (1996), Seiffge-Krenke (1995) posited that adolescents' evaluation of stressful experiences and efforts to manage their distress are influenced by developmental changes of personal resources. Specifically, Seiffge-Krenke addressed the influence of self-concept and personality. She also focused on the influence of dramatic changes in adolescents' relationships with parents and peer groups during this time of development as additional theoretically important factors affecting adolescent coping. Together, both personal resources and changes in relationships with parents and peers

contribute to how a stressor is evaluated, as well as the intended function of coping efforts. Thus, the changing relation between the adolescent and his/her social environment would seem to be a significant factor contributing to age related individual differences in coping (Frydenberger, 1997; Harter, 1999; Lazarus, 1999; Sieffge-Krenke, 1995).

2.4.2 Gender as a moderator of coping. A clear pattern exists in both the adult and adolescent coping literatures that males and females cope differently (Feldman et al., 1997; Kurdek, 1987; Piko, 2001; Porter & Stone, 1995; Ptacek, Smith, & Dodge, 1994; Ptacek, Smith, & Zanas, 1992). In general empirical results demonstrate that women report more emotion-focused coping methods such as venting or expressing emotions and seeking out social support for emotional reasons. Men, on the other hand, report the use of avoidance coping strategies such drug and alcohol use and turning against others. To date, empirical research has not demonstrated clear gender differences in men and women's utilization of problem-focused coping. Researchers have advocated for a better understanding of these gender differences because (a) men and women have been shown to differ on a host of environmental, cognitive, and physiological factors that have been shown to relate to the coping process in general, and (b) coping relates to mental and physical health, and gender differences in coping may help to explain why men and women differ in the frequency of certain psychological and physical disorders (Ptacek et al., 1994).

Two central hypotheses have emerged to explain gender differences in coping: (i) the structural hypothesis, and (ii) the socialization hypothesis. Proponents of the

structural hypothesis (e.g., Billings & Moos, 1984; Folkman & Lazarus, 1980) asserted that gender differences in coping were the result of differences in the types of personenvironment transactions appraised as stressful. Men and women occupy different social roles in society that affect the types of transactions experienced and thus, the types of coping strategies deemed most adaptive to manage the transaction (Rosario, Shinn, March, & Huckabee, 1988). Consequently, the same event is appraised differently by the two genders and this contributes to gender differences in coping (Ptacek et al., 1992).

According to the socialization hypothesis, men and women are socialized to deal with stressful transactions in different ways due to widely held sex role stereotypes and gender-role expectations (Porter & Stone, 1995; Ptacek et al., 1992; Rosario et al., 1988). In North America, men place a high value on autonomy and are socialized to deal instrumentally with stress. Women, on the other hand, place an emphasis on social connection and are socialized to express emotion, employ emotion-focused coping, and seek the support of others (Feldman et al., 1995; Ptacek et al., 1992). The socialization hypothesis predicts that during similar stressful transactions, males will tend to favour problem-focused coping, whereas females will be more likely to favour emotion-focused coping or to seek social support (Porter & Stone, 1995; Ptacek et al., 1992)

In general, adolescent coping researchers have concluded that there is support for the socialization hypothesis. Girls generally report using a greater amount of social support independent of the type of stressful encounter. Boys, on the other hand, report a preference to manage stressful events without the support of others (Aldwin, 1994; Boekaerts, 1996; Frydenberg, 1997; Seiffge-Krenke, 1990, 1995). A caveat to this research is the deficiency in accounting for the content of, as well as the appraisal of the

person-environment transactions reported as stressful by adolescent boys and girls (Porter & Stone, 1995). Thus, it is difficult to discern whether differences in adolescent coping are due to socialization differences or to differences in the stressful person-environment transactions reported.

Gender differences in coping emerge during early adolescence and become more pronounced with age (Boekaerts, 1996; Frydenberg, 1997). Adolescence has been implicated as a critical period in the formation of an individual's identity, which includes the adoption of gender-roles (Harter, 1999; Samtrock, 1998). Researchers demonstrate that during this phase of maturation an intensification of gender roles occurs that is expressed as a rather rigid conformity to gender stereotypes (Barbee, Cunningham, Winstead, Derlega, Gulley et al., 1993; Feldman et al., 1995). The onset of puberty as well as changing psychological and social forces function together to increase adolescents' awareness of gender and are thought to precipitate the intensification of gender roles during this stage of development (Feldman et al., 1995).

2.4.3 Organized sport as a moderator of coping. Organized sport carries a set of values and social norms that affects the attitudes and behaviour patterns that adolescents exhibit (McPherson & Brown, 1988). Eitzen and Sage (1997) state that the objectives of organized youth sport in North America are to teach children and adolescents (a) culturally relevant sport skills, and (b) the attitudes and values of success-striving, competitive achievement, personal worth through sport outcomes, punctuality, respect for authority, and discipline through their social relationships with teammates, opponents, parents, coaches, and officials. To the extent that these objectives are accomplished,

adolescent athletes are presented with a unique set of demands, constraints, and opportunities compared to that of other social contexts such as leisure activity, family, and school (Lazarus, 1999; McPherson & Brown, 1988). This, in turn, contributes to the development of coping responses which enable the athlete to better manage the demands of the social context (Crocker et al., 1998; Gould, 1996; Gould, Wilson, et al., 1993; Hardy et al., 1996). Unfortunately, the amount of attention devoted to how adolescent athletes cope with sport related stress is relatively sparse compared to that with adult athletes. This has been primarily due to a lack of strong theoretical framework guiding research efforts, as well as measurement tools to assess stress, emotion, and coping in adolescent populations (Crocker et al. 1998). As of 2000, five adolescent coping studies had been published in the sport literature. The best way to describe this research is to provide an overview of the actual studies. These studies have (a) examined the stability or consistency of coping across time and different competitive sport contexts, (b) tried to identify stable coping styles, (c) examined the relation between coping styles and other psychological constructs, (d) examined gender differences in the use of coping efforts, and (e) identified coping as a moderator variable of the stress-injury relation.

Smith et al. (1990) examined the conjunctive moderator effects of coping and social support within the stress-athletic injury relation with a sample of 250 male and 201 female high school athletes. A conjunctive moderator is a specific combination of or pattern of multiple predictors that maximizes the relations between a predictor variable (i.e., stress) and an outcome variable (i.e., injury outcome). Coping was assessed using the Athletic Coping Skills Inventory (Smith, Smoll, & Schutz, 1988), a sport specific measure designed to measure a range of general psychological and coping skills.

Correlational analysis demonstrated that social support and coping shared little common variance with each other and thus, acts as distinct resources. Hierarchical regression analysis demonstrated that when considered separately, coping skills and social support did not increase the predictability for injury occurrence. However, athletes low in both coping skills and social support exhibited significant stress-injury relations. The authors concluded that coping skills and social support together are better able to predict the occurrence of athletic injury when adolescent athletes are dealing with negative life events than either coping skills or social support alone (Smith et al., 1990).

In a non-theoretical based study, Ryska (1993) examined the relation between coping styles and reported competitive state anxiety with a sample of 270 male and female high school tennis players. Coping styles were established based upon Williams and Krane (1992) definition of stress coping styles. Williams and Krane outlined four stress coping styles based upon the constructs of social desirability and trait anxiety including: (1) Low-anxious coping style (low trait anxiety, low social desirability), (2) Repressive coping style (low trait anxiety, high social desirability), (3) High-Anxious coping style (high trait anxiety, low social desirability), and (4) Defensive High-Anxious coping style (high trait anxiety, high social desirability). Ryska reported that no differences were found between coping style and the reported levels of competitive state anxiety.

Kolt, Kirby, and Lindner (1995) examined the coping efforts adolescent male and female competitive gymnasts employ when experiencing a performance slump. In total, 115 gymnasts (n = 83 female, and n = 32 male) between the ages of thirteen and twenty participated. Coping was assessed with a sport-modified questionnaire of Folkman and

Lazarus (1985) Ways of Coping Checklist. Results demonstrated that the gymnasts most frequently employed the strategies of increased effort and resolve, wishful thinking, seeking social support, and problem-focused coping. Significant gender differences were also reported with female gymnasts seeking more social support.

In an attempt to identify stable coping styles among adolescent athletes, Anshel (1996) examined the existence of approach and avoidance coping styles among a sample of 421 adolescent team sport athletes currently participating in a wide variety of sports at various competitive levels. In response to eight different competitive team sport stressors (e.g., a physical or mental error, a "bad" call or penalty from the official) athletes identified coping strategies they usually use from a list of eighteen strategies on a coping scale developed for the purposes of the study. Anshel classified coping strategies a priori into four coping styles, approach-problem-focused, avoidance-problem-focused, avoidance-emotion-focused, and avoidance (avoidance-problem-focus) coping styles were independent as evidenced by weak to moderate correlations between the categories of coping.

Crocker and Isaak (1997) examined the process of adolescent coping in sport guided by Lazarus' (1991a; Folkman & Lazarus, 1985) theory of stress and emotion. The consistency of coping patterns was examined in three different swim meets and in the one week training periods following competition with 25 age-class adolescent swimmers. Results demonstrated that competition was associated with an inconsistent pattern of coping, while practice situations were associated with a more stable coping pattern. These results, therefore, only partially support the argument that coping use changes with

different transactions over time. Differences found in coping consistency between the competition and training contexts were explained, in part, to the differing nature of competitive and training contexts, systematic differences in ego-involvement, and methodological differences (Crocker & Isaak, 1997). First, the swimming demands of training and competition are different. During training, swimmers must deal with the variable demands associated with swimming meets such as race importance, facing other top swimmers, and audience (coach, parent, teammate) expectations. Thus, during the practice context coping efforts may be solely directed towards managing regimented demands, whereas during competition coping efforts are likely to be directed towards any number of demands perceived to be threatening. Second, competition and practice situations bring about different opportunities of ego-involvement. Differences in egoinvolvement can influence how individuals perceive, plan, behave, and emote during physical activity settings. Lastly, differences in reporting what the athletes "actually did" and what the "usually did", answering questions in an individual setting versus answering questions in a group setting, and the use of a specific coping dimension measurement scale were all offered as potential methodological problems that could account for coping consistency differences observed between competitive swimming and training situations (Crocker & Isaak, 1997).

It is difficult to draw generalizations regarding adolescent coping in sport because of the inconsistent theoretical and measurement approaches across the studies. Nevertheless, two main findings have emerged from the literature. First, some evidence exists that demonstrates contextual demands (i.e., competition) contribute to differences observed in coping efforts during sport related stressful encounters (Crocker & Isaak,

1997). Second, social support appears to be an important coping strategy for adolescent athletes, particularly for females.

The evidence of gender differences in adolescent coping within the organized sport context illustrates how personal attributes (such as age, gender, race, and socioeconomic status) often interact with contextual factors to influence the stress experience (Lazarus, 1991a, 1999; McPherson & Brown, 1988). Among the personal attributes that interact with the environment to influence stress experiences, gender has received the greatest attention in the sport literature. Sport researchers claim that the attitudes and values proscribed by organized sport (i.e., competitiveness, autonomous achievement) are incompatible with the traditional female gender-role (Greendorfer, Lewko, & Rosengren, 1996; Miller & Levy, 1996). Consequently, girls participation in sport is associated with a gender-role conflict (Czisma, Wittig, & Schurr, 1988). Gender role conflict is a phenomenon where female athletes experience a sense of conflict between personal gender values and societal expectations of femininity (Miller & Levy, 1996). The experience of gender-role conflict is hypothesized to account for observed differences in female athletes and nonathletes attitudes and behaviours (e.g., stress and coping). Research, however, has not supported the existence of a gender role conflict among female athletes (Allison, 1991; Miller & Levy, 1996). This is possibly due to (i) female athletes being more masculine than female non-athletes, (ii) female athletes possessing more positive self concepts about athletic participation than female nonathletes, and (iii) female athletes receiving different socialization into sport experiences than non-athletes (Miller & Levy, 1996).

The sport coping literature generally, mirrors findings from the developmental literature and generally, does not lend support for the gender role conflict (Crocker & Graham, 1995; Gould et al., 1997; Kolt et al., 1995). Analyses of interviews conducted with 21 U.S. alpine and freestyle ski team members who suffered season ending injuries revealed that, for the most part, female and male ski team members used similar coping strategies in dealing with the recovery from injury (Gould et al., 1997). Some gender differences, however, did emerge. Whereas, males cited working hard toward accomplishing goals more often, females reported using determination motivation, personal determination, distracting self-kept busy, and seeking social support more often. Females were also more likely to report that support from coaches and staff facilitated recovery. Crocker and Graham (1995) examined the coping efforts used in managing athletic performance stress with a sample of 235 competitive athletes between the ages of fifteen to thirty years. They found that female athletes reported higher levels of seeking social support for emotional reasons as well as increasing effort in response to goal frustration. Kolt et al. (1995) also found gender differences in the coping efforts of 115 adolescent male and female gymnasts. Females were found to employ greater amounts of social support when attempting to handle performance slumps. This result, however, should be viewed with caution due to differences in size of the female and male samples.

Although existing research does not support the existence of gender role conflict for female athletes' coping, this construct should not be disregarded. To date, very little research exists studying how adolescent athletes manage sport specific stress. Intuitively, it would seem that boys and girls experience sport differently due, in part, to adherence to traditional gender roles supported in a wide variety of contexts (such as school, family,

leisure activity) other than sport. This, in turn, may affect the coping strategies applied across similar stressful situations in different contexts. For example, a female athlete who experiences stress as a result of disagreeing with an authority figure may choose to use different coping strategies based on the context. In school, the athlete may choose to discuss the problem with the teacher, making sure that both individuals do not feel bad in the interaction. In the sport setting, however, the same athlete may choose to only manage her upset feelings rather than confront the coach. The difference in coping may result from the different expectations of the contexts.

Researchers (e.g., Aldwin, 1994; Boekaerts, 1996; Seiffge-Krenke, 1995) argue that experience with specific person-environment transactions are an important mechanism for developing adaptive coping skills during adolescence. Participation in sport offers unique experiences for developing adaptive coping skills and makes an important contribution to individual differences in coping (Coleman, 1991; Donnelly, 1993; Eitzen & Sage, 1997). It has been estimated that as many as 16 to 20 million North American youth between the ages of six and sixteen years participate in organized sport and that the average youth spends approximately 12 hours a week for eighteen weeks engaged in sport participation (Gould, 1996). Given the pervasive influence of sport within the lives of youth, it is surprising (and disappointing) that relatively little is actually known regarding how youth handle the demands inherent to the context. Thus, it would seem that a better understanding of how specific types of experiences in youth sport contribute to the adoption of adaptive coping skills is an important area in need of further research. One area that has increased significance during adolescence is interpersonal relationships afforded in the sport context. Numerous studies and

monographs have underscored the key role that parents, peers, and coaches play in shaping the psychosocial outcomes associated with youth sport participants (e.g., Babkes & Weiss, 1999; Black & Weiss, 1992; Brustad, 1993b; Brustad, 1996; Coakley, 1993; Gould, 1996; McPherson & Brown, 1988; Smoll, Smith, Barnett, & Everett, 1993). While studies have examined the role of others in development of adolescent athlete's self-concept, self-esteem, motivation, and experience of anxiety, almost no research has examined the role of others as a resource related to coping with sport-related stress.

A primary focus of this research is to examine the nature of early adolescent male and female social resources provided by significant others in sport and the coping functions exerted to manage a sport related stressful encounter. This research will also include the examination of the relation between athletes' social resources and coping. Because both theory (i.e., Lazarus' Cognitive-Motivational-Relational model of stress and emotion) and empirical research demonstrate the moderating influence of the person and the environment on coping, it was deemed necessary to constrain these factors when examining the social support-coping relation. Specifically, the sample was restricted to include male and female early adolescent athletes (i.e., athletes between the age of eleven and fifteen years). Stressful person-environment transactions were constrained as being interpersonal in nature within the sport context (e.g., challenges or difficulties with coaches, teammates, opponents, parents, or referees).

## 2.5 Social Support

Resources are a critical part of coping (Lazarus, 1999), with a major resource being social support (e.g., Carpenter & Scott, 1992; Gore, 1985; Komproe et al., 1997;

Pierce, Sarason, & Sarason, 1996; Sandler, Miller, Short, & Wolchick, 1989; Seiffge-Krenke, 1995; Shulman, 1993). This resource may be particularly important to individual differences in adolescent coping, as the changing social environment and the development of social-cognitive abilities affect the social support resources that adolescents access during this stage of maturation. Further, there is some empirical evidence that suggests development changes associated with social support are linked to age and gender-related individual differences in coping during adolescence (Griffith, Dubow, & Ippolito, 2000; Seiffge-Krenke, 1995; Shulman, 1993).

A wealth of literature has emerged examining the influence of an individual's social environment on his/her physical, social and emotional well being over the past thirty years. Social support is conceptualized as "an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well being of the recipient" (Shumaker & Brownell, 1984, p.11). Traditional approaches to the study of social support reflected an environmental perspective (Lazarus, 1999). Specifically, the study of social support traditionally focused on the role of social support networks and the provision of specific resources. In other words, traditional approaches focused on how much social support was available to people and how it facilitated health.

Recent social support research focuses on a psychological perspective in which social support can have both a positive and negative impact on physical, mental, and emotional well being (Lazarus, 1999). Rook (1992) asserted that social relationships do not positively enhance the recipients well being when (a) the type of social support exchanged is not the type of support that is needed, or (b) the amount of social support

exchanged is either too much or not enough compared to the amount that is needed, or (c) the social support engenders a false sense of self-efficacy. Social support that is beneficial is dependent on the ability of the individual to cultivate social relationships that provide desired social supportive resources and to draw on them under stress (Lazarus, 1999). That is, "social support has its beneficial effects [on health and well being] by facilitating or augmenting psychological and environmental processes that the individual must set in motion to overcome the objective problem that is taxing his or her resources or to decrease the magnitude of aversive emotions that are generated by the problem" (Lazarus & Folkman, 1984; as cited in Cutrona, 1990, p. 4). Thus, social support is an important resource that shapes appraisal and coping during specific person-environment transactions (Lazarus, 1991a, 1999). This may be accomplished through (a) directly affecting the immediate environment, (b) constraining thoughts, feelings, and actions, (c) resources made available to the individual, and (d) shaping personal variables such as motives and belief systems (Lazarus, 1999).

Although social support is not considered to be a direct mediator of the stress process as theorized by Lazarus (1991a, 1999), substantial empirical data suggests that social support has an important role within the stress-health relation (e.g., Cohen, Sherrod, & Clark, 1986; Davis, Morris, & Kraus, 1998; Helsen, Volleberg, & Meeus, 2000; Herman-Stahl & Petersen, 1996; Lohman & Jarvis, 2000; Udry, Gould, Bridges, & Tuffey, 1997). Moreover, recent advances showing that social support is a multidimensional construct has resulted in research efforts to examine how the conceptually distinct dimensions of social support punctuate the stress-health relation in

different ways. The role of social support within the stress process will be considered in Section 2.8, following the discussion of the multidimensional nature of social support.

## 2.6 The Multidimensional Nature of Social Support

There are a number of social support definitions. Cohen and Syme (1985) describe social support as "resources provided by other persons" (p. 4), whereas Cobb (1979) conceptualized social support to be information that leads an individual to believe that he or she is cared for and loved, esteemed, and valued, and belongs to a network of communication and mutual obligation. Procidano and Heller (1983) stated that social support is the perceived availability of assistance in a person's network to cope adequately with stressors. From the various definitions social support reflects three distinct dimensions: (a) social support network, or the idea that differences in interpersonal connectedness influences how people respond to various types of situations; (b) received social support, or the identification of supportive components of the environment; and (c) perceived social support, or the individual's sense of being supported (Barrera, 1986; Sarason, Sarason, Brock, & Pierce, 1996; Sarason, Pierce, & Sarason, 1990; Vaux, 1985).

Research has consistently demonstrated that although the three dimensions of social support are conceptually interrelated, they are independent constructs and should be considered theoretically distinct (Barrera, 1986; Dunkel-Schetter & Bennett, 1990; Pierce et al., 1996; Sarason, Shearin, Pierce, & Sarason, 1987; Schwarzer & Leppin, 1991; Vaux & Harrison, 1985). A comprehensive understanding of the relation of social support with constructs such as stress and coping require that attention be paid to each

dimension of social support as well as the interrelation among the dimensions (Sarason, Pierce, et al., 1990). Pierce et al. (1996) warn that isolated dimensions of social support are insufficient to acquire an adequate understanding of the role of social support in such processes. Thus, attention must be paid to all dimensions of social support when examining its role in stress and coping in adolescent athletes.

2.6.1 Social network. The social support network is conceptualized as the structural dimension of social support and includes all social relationships and involvements that are potential sources of supportive behaviour and foster the feeling that one is supported (Cauce Manson, Gonzales, Hiraga, & Lui, 1994; Cohen & Syme, 1985; Vaux, 1985). Support obtained from a social network is assumed to be reflective in the structural features of a network (Sarason et al., 1996). For example, an assumption in the research is that large social support networks are associated with higher levels of social support because there are more members from whom the support seeker can obtain needed resources (Barrera, 1986). The structural features of social networks include: (a) size or the number of members within the social network, (b) density or the degree of interconnectedness among members of a social network, (c) degree of reciprocity within specific interpersonal relationships of the social network, (d) durability of interpersonal relationships, (e) intensity of relationships or the interconnectedness of specific interpersonal relationships within the social network, (f) frequency of contact among members of the social network, (g) dispersion or physical location of members from one another, and (h) homogeneity of social relationships (Gore, 1985; House & Kahn, 1985;

Vaux, 1985). The research presented in this dissertation will specifically examine social support network size.

Four basic types of social support networks have been identified including significant other network, exchange network, interactive network, and global network (Milardo, 1992). Significant other networks are composed of an arrangement of important individuals with whom the person is intimate, such as family and close friends. On average, people report approximately five members who they would consider to be members of this type of social network. People become members of such a network through history of significant personal communications. Significant other networks are the most common type of social support network studied (Milardo, 1992).

Exchange networks are larger than significant member networks and are made up of a collection of people who routinely provide (or are thought to provide) sources of aid such as material and emotional support (Milardo, 1992). On average, individuals report approximately twenty members who they would consider to be apart of their exchange network. Compared to the significant member network, exchange networks include a wider array of friends, neighbours, and co-workers (Milardo, 1992). This dissertation will describe the exchange network of adolescent athletes.

Interactive and global networks are comprised by a large number of people in comparison to significant other and exchange networks, as they reflect all the interpersonal interactions experienced within individuals' social environment. Interactive networks are rarely observed within the research and represent a collection of individuals whom one typically interacts with on a day-to-day social experience (Milardo, 1992). Individuals' global network consist of all those people who are known to an individual

and is limited to those persons who are living, are known by name, and who would also recognize the respondent. Results drawn from the scant research investigating interactive and global networks reveal that (a) these networks are large, (b) respondents are unable to guess their sizes accurately, and (c) the size of these networks do not predict the sizes of any other kind of network (e.g., exchange network) (Milardo, 1992).

2.6.2 Received social support. Researchers who examine received social support focus on the actual functions or social resources that are provided to individuals through their social interactions (Vaux, 1985). Although theorists disagree on how specific social resources should be categorized, there is wide agreement that a variety of social resources exist (Albrecht & Adelman, 1984; Cutrona, 1990; Cutrona & Russell, 1990; Pines, Aronson, & Kafry, 1981; Rosenfeld et al., 1989; Udry et al., 1997; Weiss, 1974). Several different categorization schemes exist to classify different types of social resources (e.g., Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Kahn, 1979; Schaefer, Covne, & Lazarus, 1981; Weiss, 1974). An extensive review of the literature led Cutrona and her colleagues (1990; Cutrona & Russell, 1990) to conclude that five basic social resources are exchanged during supportive interpersonal transactions. These resources include: (a) emotional support, the ability to turn to others for comfort and security during times of stress, leading the person to feel that he or she is cared for by others; (b) social integration or network support, a person's feeling part of a group whose members have common interests and concerns; (c) esteem support, the bolstering of a person's sense of competence; (d) tangible aid, concrete instrumental assistance; (e) information support, providing the individual with advice or guidance concerning possible solutions to a

problem. Empirical evidence has been found that social resources can be measured as independent and distinct dimensions or combine to form a single second-order factor reflecting a global social support construct (Cutrona & Russell, 1990). This dissertation is interested in the different dimensions of received social support that adolescent athletes obtain from different providers. Thus, received social support dimensions related to information support, emotion support, esteem support, and tangible support will be studied.

2.6.3 Perceived social support. Perceived social support is the individual's perception of the amount and quality of support available either within specific interactions or within certain relationships (Vaux, 1985). In other words, it is a *belief* that if the need arose, there are others who are willing and able to provide support. Social support is not an objective property of social relationships. That is, "...it is not possible to determine whether a specific social interaction constitutes social support without reference to the cognitive appraisal of that interaction." (Sarason, Pierce, et al., 1990, p. 497). Measures have typically operationalized perceived social support as satisfaction with the support received, perceived availability and quality of support, and beliefs that one is cared for, respected by, and involved with family, friends, and others (Cauce et al., 1994; Sarason et al., 1987; Vaux, 1985).

Three different models have been advanced in the literature describing how individuals develop beliefs or perceptions of social support. First, early research emphasized an environmental model where perceptions of social support were formed based upon the past experience with different social interactions (Cauce et al., 1994;

Lakey, McCabe, Fisicaro, & Drew, 1996). Dimensions of the social support network (e.g., size of social network, composition of social network, patterns of interconnectedness among network members, accessibility or frequency of contact with network members) and the actual receipt of social resources are theorized to influence individuals beliefs and expectations for possible future support in that environment. For example, knowledge that many people are available (i.e. a large versus small social network) is hypothesized to influence beliefs that greater social support resources are available to cover a variety of needs, and thus enhance a person's perception of available support (Cutrona, 1986). Some empirical research has found support for the environmental model (e.g., Davis et al., 1998; Lakey & Cassady, 1990; Lakey et al., 1996; Lakey, Moineau, & Drew, 1992).

The second model describing the construction of perceptions of social support favours person factors (i.e., personality) (Cauce et al., 1994; Cutrona, 1990; Lakey et al., 1996; Sarason, Sarason et al., 1990). Sarason, Sarason, et al. (1990) hypothesized that perceived social support reflects a generalized sense of acceptance that is founded in early childhood attachment. Research supports this hypothesis in that the development of perceived social support in new settings has been found to be related to person variables such as negative affectivity, social competence, and agreeableness (Lakey et al., 1996). Advocating a social-cognitive approach, Sarason, Sarason et al. (1990) asserted that perceptions of social support operate, in part, as a cognitive personality variable in which stable organized beliefs about the quality of one's interpersonal relationships lead to biased interpretations and recall of social interactions (Cutrona, 1990; Lakey & Cassady, 1990). That is, two individuals with objectively identical social support resources may

describe these resources quite differently based upon belief structures that were formed in part from different bonding experiences with others in their early childhood social environment. In a review of the empirical research examining the role of personal factors in the development of perceptions of social support, it was reported that perceived support is (a) stable over time and acts as a traditional personality characteristic, (b) associated with social competence and recollections of parental care, (c) highly correlated with measures of self-referent cognitions, (d) associated with a positive bias in the evaluation of supportive behaviours, and (e) predictive of better memory for support relevant behaviour (Lakey et al., 1996). It is noted, however, that perceived social support as a personality variable has only been able to account for a small portion of the variance in predicting individuals who will positively perceive support to be available during interpersonal interactions (Lakey et al., 1996).

Recently, a third model has been advanced to describe the formation of perceived social support beliefs. The interaction model predicts that perceived social support resides in neither in the person nor in the environment but in the match between the two (Lakey et al., 1996). That is, generalized perceptions of others as supportive are assumed to result from the interaction between the person (i.e., stable organized belief systems about social interactions) and environmental cues (i.e., social network membership status and history of social support received). To investigate the interaction model, Lakey et al. (1996) examined the relative contribution of person, environment, and interaction of person by environment support variables in explaining the variance in general perceived support. Results reported across three different samples indicated support for the person, environment, and interaction model. The person and environmental variables accounted

for 8% and 20% of the explained variance, respectively. The person by environment support variable, however, was judged to be the most important determinant of perceived social support across the three studies accounting for approximately 41% of the explained variance.

One objective of this dissertation is to describe early adolescent athlete's perceptions of social support from specific providers such as family, peers, and coaches. Understanding the contribution of factors (i.e., personality factors, environmental factors) theorized to contribute to athlete's perceptions of social support is beyond the scope of this research. However, the *environmental* model of perceived social support will be used to develop a theoretical link describing the relation between social support and coping. The environmental model will be used because of its structure and predictive capability. An additional objective of this dissertation is to examine the relation between adolescent athlete's social support and coping. To fully understand the social support (i.e., social support network, received social support, and perceptions of social support) be included within the analysis (Bianco & Eklund, 2000; Pierce et al., 1996). The relation between social support and coping will be more fully reviewed in Section 2.9.

## 2.7 Moderators of Social Support

Similar to arguments advanced in the earlier coping sections of this review, a more complete understanding of early adolescent athletes' social support requires the consideration of moderating factors. A number of factors have been identified in the social support literature, however, this dissertation will highlight three factors identified

in the literature that influence the relation of social support and stress in sport. These factors are age, gender, and the context of the person-environment transaction.

2.7.1 Age as a moderator of social support. Social support theorists advocate that age should be considered to be an important moderating variable within the theories of social support (Bruhn & Philips, 1987; Newcomb, 1990a; Pierce et al., 1996; Vaux, 1985). Social support is continually evolving and is a changing process that is modified by growth, the completion of certain developmental tasks, and supportive environmental resources (Bruhn & Philips, 1987). For example, role transitions (i.e., high school student, employee), environmental transitions (i.e., starting high school), development of autonomy from family, development of social skills for obtaining social support, have all been implicated as possible mechanisms that alter the structure of one's social network and understanding of social support during adolescence (Bruhn & Philips, 1987; Cauce et al., 1994; Eccles, Early, Frasier, Belansky, & McCarthy, 1997; Newcomb, 1990a; Sarason, Levine, Basham, & Sarason, 1983; vanAken, Coleman, & Cotterell, 1994; Vaux, 1985). Dramatic shifts in social support are observed during adolescence. The shift away from parents as sole providers of social support to a more peer-based and other significant network system foster the basis for intimate adult-based relationships (Newcomb, 1990a; Vaux, 1985).

For the most part, the influence of development upon adolescent social support has been studied with respect to age-related differences. Specifically, empirical research efforts have primarily concentrated on structural shifts in membership within significant other and exchange social support networks (Milardo, 1992). In addition, some attention

has been directed towards the types of social resources (i.e., received social support) adolescents seek out and perceive to be available with increasing age.

Adolescent relationships with family, peers, and significant other-adults (e.g., school teachers, coaches) are key sources of support (Cauce et al., 1994; Udry et al., 1997; Wentzel, 1998). Empirical research consistently provides evidence that shifts occur in the relative importance that adolescents bestow for the provision of social resources from each social relationship (e.g., adolescent-parent, adolescent-friend, and adolescentteacher) across adolescence. For example, Schonert-Reichl and Muller (1996) compared adolescents (i.e., early adolescents and middle adolescents) help seeking from different sources when confronted with an emotional problem. Results revealed that middle adolescents sought help from friends more often and were more likely to seek out help from professionals than the early adolescents. Across the social support literature, empirical research demonstrates that (a) family (primarily parents) are the primary providers of social support during childhood, (b) parents are regarded as a constant and important source of social support throughout adolescence, (c) peers, as a source of social support, becomes increasingly salient to the early adolescent, (d) after peeking in relative importance as a source of social support during early adolescence, peers remain an important source of social support in addition to parents throughout the remainder of the adolescent development period; and (e) during late adolescence, adolescents seek out support more frequently from significant-other adult sources such as teachers and counsellors in addition to peers and parents (Berndt, 1989; Cauce et al., 1994; Furman, 1989; Furman & Buhrmester, 1992; Gottlieb, 1991; Helsen et al., 2000; Levitt, Guacci-Franco, & Levitt, 1993; Schonert-Reichl & Muller, 1996; Shulman, 1993; Vaux, 1985;

Weigel, Devereux, Leigh, & Ballard-Reisch, 1998; Wentzel, 1998; Wolicik, Beals, & Sandler, 1989).

The shifts in who is considered to be an important source of social support is likely due, in part, to the types of social resources that can be provided and are preferred by the adolescent (Clark-Lempers, Lempers, & Ho, 1991; Harter, 1999; Seiffge-Krenke, 1995; Shulman, 1993). For example, adolescent relationships with parents are found to be important for the provision of affection, reliable alliance, enhancement of worth, and instrumental aid (Clark-Lempers et al., 1991). Adolescent friendships have been documented in providing social support in the form of validation of self-worth, loyalty, companionship, help and guidance, intimate exchange, emotional security, absence of conflict, conflict resolution, as well as affection and security (Weiss, Smith, & Theeboom, 1996). Empirical research demonstrates that the age and gender of the adolescent moderates how relationships are viewed with respect to the provision of resources.

The ability to distinguish among the type of social support resource that is best provided through a specific social relationship emerges during early adolescence (Harter, 1999; Helen et al., 2000; van Aken & Asendorpf, 1997; van Beest & Baerveldt, 1999). Dubow and Ullman (1989) revealed that children between the grades of three and five (N= 361) who perceived specific social resources to be available from a specific network member (such as a parent) also reported perceiving the same social resource to be available from the other members within his/her social support network (such as teachers and friends). van Aken and Asendorpf (1997) interviewed 139 twelve-year-old adolescents regarding their social support network members. Descriptive analysis of the

transcripts revealed that (a) level of support was fairly specific to the particular network member, (b) low support within the family was independent of low support from other relationships, (c) feelings of low self-worth was strongly associated with low social support from mother and/or father, and moderately associated with low social support from classmates; (d) low support from one parent could only be compensated by support from the other parent, and (e) low support from classmates was not compensated by support from other children (van Aken & Asendorpf, 1997). Similarly, van Beest and Baerveldt (1999) found evidence that a lack of parental social support could not be compensated for by peer support for a sample of 1528 urban youth between the ages of 14 to 16 years.

2.7.2 Gender as a moderator of social support. It is well established that male and female adolescents experience and interact with their social environment differently (Belle, 1989; Blyth & Foster-Clark, 1987; Frey & Rothlisberger, 1996; Helsen et al., 2000; Schonert-Reichl & Muller, 1996; Seiffge-Krenke, 1995; Vaux, 1985). Gender differences in social support emerge in late childhood, are most prominent during adolescence, and then stabilize and remain strong throughout adulthood (Barbee, et al., 1993). Specifically, males and females differ in (a) the structural features of the social support network, (b) the amount of social support received, and (c) the perceptions of available social support (Barbee et al., 1993; Belle, 1989; Berndt, 1989; Vaux, 1985). Gender role intensification and socialization differences have been suggested as major contributors to these effects within the social support literature (Barbee et al., 1993; Belle, 1989; Blyth & Foster-Clark, 1987; Vaux, 1985).

An important developmental task during adolescence is the formation of an identity that is autonomous from the family (Harter, 1999). Gender-role has been identified as a key element within an individual's identity and is viewed to develop as a continuing process over the lifespan (Katz & Ksansnak, 1994). Adolescence, however, may be a particularly intensified time of gender role learning because of the congruence of physical maturation, enhanced abstract thinking capability, and identity formation (Hill & Lynch, 1983; Katz & Ksansnak, 1994; Obeidallah, McHale, & Silberesien, 1996). According to the gender-intensification hypothesis, it is theorized that early adolescents experience increased pressure from various socialization agents (i.e., parents, teachers, same-sex peers, opposite-sex peers, siblings) to behave in gender stereotypic ways (Hill & Lynch, 1983). A traditional female gender role emphasizes nurturance and emotional expressiveness (Barbee et al., 1993). On the contrary, achievement, autonomy, and emotional control are emphasized within the traditional male gender role (Barbee et al., 1993). With age, a shift toward greater traditionality is predicted (Hill & Lynch, 1983).

A greater adoption in traditional gender roles observed during adolescence has been implicated in explaining gender related differences in the social relationships that social resources are obtained (Barbee et al., 1993; Belle, 1989; Blyth & Foster-Clark, 1987; Vaux, 1985). In general, empirical research demonstrates that a female gender role orientation favours social support (Barbee et al., 1993). Male and female adolescent social networks do not differ in size or in the types of relationships (e.g., parents, peers, and significant other adults) embedded within the network (Belle, 1989). Rather, it appears that the structural differences between the genders within the social support network are due mainly to the degree of connectedness individuals have with members of

their social network. Female adolescents characterize their relationships with others as being more intimate and less superficial compared to that reported by male adolescents (Helsen et al., 2000). Female adolescents also report receiving social support resources more often and are more satisfied with the social support that is received than are male adolescents (Belle, 1989; Schonert-Reichl & Muller, 1996). Further, there is evidence that females have stronger beliefs that social resources could be obtained if needed than do males (Barbee et al., 1993; Clark-Lempers et al., 1991; Vaux, 1985; Weigel et al., 1998).

Research examining gender differences in social support for adults and adolescents in sport has revealed weak and mixed findings (Hardy et al., 1991; Rosenfeld et al., 1989; Weiss et al., 1996). One explanation for these findings is the influence of context. Barbee et al. (1993) advance that context may influence the obtainment and effectiveness of social support. For example, females may be more likely to be sought out for relationship and emotional problems; whereas, males may be more likely effective in providing informational resources for assistance in handling work or technical problems (Barbee et al., 1993; Hill & Lynch, 1983). There is growing evidence that activities adolescents participate in are not viewed as gender neutral (Bigelow, Lewko, & Salhani, 1989; Chase & Dummer, 1992; Covey & Feltz, 1991; Hill & Lynch, 1983; Kunesch, Hasbrook, & Lewthwaite, 1992). With regard to sport, it has been suggested that the competitive nature of sport does not lend itself to socializing the traditional female gender role (Greendorfer et al., 1996). Instead, competitive sport socializes adolescents to concern themselves with achievement and competency, which supports more of the traditional male gender role (Bigelow et al., 1989; Greendorfer et al., 1996; Miller &

Levy, 1996). Thus, context needs to be considered when examining factors inherent to the person (i.e., gender) as potential moderators of social support.

2.7.3 Organized sport as a moderator of social support. Different social contexts bring about different demands on social support resources (Cutrona, 1990). For example, Zarbatany, Ghesquiere, and Mohr (1992) interviewed 67 early adolescents between the ages of ten to twelve years regarding the supportive behaviours they would like from their same and opposite-sex friends during five different peer activities (e.g., academic, telephone conversations, watching TV./listening to music, sports, games). Analyses revealed that adolescent's friendship expectations varied as a function of the social context. During competitive activities, friends were expected to perform behaviour supportive of self-evaluation such as ego reinforcement and preferential treatment, as well as play fair. During non-competitive activities, friends were expected to display characteristics such as helping, common interests and acceptance (Zarbatany et al., 1992). Thus, the context is an important moderator of desired social resources including who provides social support, the type of social support received, and perceptions of available support.

Sport is a unique environment for the provision of social support (e.g., Rosenfeld et al., 1989; Udry, 1997; Weiss et al., 1996). For example, empirical social support research outside of the sport domain demonstrates that various members of a person's network (for the most part) can provide needed social resources. Within sport, empirical research is mounting that specific types of social support can only be provided by specific members of the social network (Babkes & Weiss, 1999; Gould, Wilson et al., 1993;
Rosenfeld et al., 1989; Smoll & Smith, 1993; Udry, 1997). Moreover, research examining gender differences in social support within the sport context have not yet provided the consistent findings found in similar research studies with non-athletes (Babkes & Weiss, 1999; Hardy et al., 1991; Vaux, 1985).

In sport, Hardy and Crace (1991) identified eight different types of social resources athletes need from their social relationships. These resources include: (a) listening support, is provided by people who listen without giving advice or being judgemental; (b) emotional support, is reflected by actions of comfort and that others care; (c) emotional challenge, is support that challenges an individual's attitudes, values, and feelings; (d) task appreciation, acknowledgement and appreciation of efforts of work completed; (e) task challenge, support that challenges an individual's thoughts about his or her work or activities and leads to greater creativity, excitement, and involvement; (f) reality confirmation, provided by people who are similar or share the same perceptions of events and help to confirm the individual's perceptions of the world and help keep them in focus; (g) material/tangible assistance, financial assistance, products, or gifts provided to an individual; and (h) personal assistance, support in the form of time, skills, knowledge, and expertise for the purpose of helping the individual accomplish specific tasks. Some empirical support has been found within college-aged athletic samples for the eight-factor social resource model (Hardy et al., 1991; Rosenfeld et al., 1989). Research has not yet examined whether adolescent athletes also utilize each of the eightfactor social support resources outlined during specific person-environment transactions in sport (such as injury, poor performance in competition, coach-athlete conflict).

Within the sport domain, empirical research examining the effectiveness of social support in adolescent athletes has produced equivocal results (e.g., Babkes & Weiss, 1999; Donnelly, 1993; Smith et al., 1990; Udry et al., 1997). This may be due, in part, to the examination of social support primarily as a global entity. The failure to delineate among the conceptually distinct dimensions of social support may have confounded empirical efforts to demonstrate the effects of important moderating variables such as gender that contribute to individual differences in social support. Thus, a clearer conceptual understanding of social support within the sport context is likely to emerge when researchers examine this construct from a multidimensional perspective. This result has important implications for understanding the role of social support within the stress process.

## 2.8 Social Support within the Stress Process

A large body of research exists that demonstrates that social support influences mental and emotional health (Komproe et al., 1997). Studies examining how individuals deal with a variety of stressful person-environment transactions (e.g., life stress, crises, mental and physical illness, unemployment, job stress, bereavement, childbirth, mortality risk, athletic injury), suggest that supported individuals are more mentally and physically healthy than unsupported individuals (Hardy et al., 1991; Shumaker & Brownell, 1984).

Little is actually known regarding how social support functions to influence health outcomes related to stress despite considerable speculation and debate within the social support literature (Alloway & Bebbington, 1987; Cohen & Syme, 1985; House, 1981; Komproe et al., 1997). It is likely that social support functions to influence health

related outcomes by affecting both appraisal and coping processes theorized to mediate stressful person-environment transactions (Carpenter & Scott, 1992; Dunkel-Schetter & Bennett, 1990; Dunkel-Schetter et al., 1987; Gore, 1985; Komproe et al., 1997). Thus, social support is conceptualized to be an important *resource* of the stress process. Further, it is speculated that different dimensions of social support affect appraisal and coping differently. The conceptual relation between social support and the stress process within the Cognitive-Motivational-Relational framework (Lazarus, 1991a, 1999) is presented in Figure 2.2.

The social network is hypothesized to influence appraisals formed regarding the person-environment transaction (Carpenter & Scott, 1992; Gore, 1985; Stewart, 1989). Carpenter and Scott (1992) stated that relationships are an important source of feedback that people use to assess their self-concept (see also Harter, 1999). Objective features of one's social network, such as the number of relationships formed (or size of network) or the degree of closeness formed within interpersonal relationships, provides important information about one's ability to exert mastery over the social environment. Further, social support networks also provide information regarding potential coping options that may be available from the social environment (Gore, 1985; Stewart, 1989). Thus, the social support network is hypothesized to influence appraisals regarding person-environment transactions by providing information regarding both personal and environmental coping resources that are potentially available to the individual.

The reception of social support, in contrast to social networks, is hypothesized to moderate the coping actions. This is accomplished through providing resources that are required to meet specific needs evoked by a stressor, such as redirecting problem-solving



Figure 2.2 Conceptual relation between social support dimensions and Lazarus' (1991a, 1999) Cognitive-Motivational-Relational theoretical model of stress and emotion.

strategies, providing tangible aid, offering emotional sustenance, changing coping pattern mechanisms employed to deal with stressful events, and providing a model for the development of coping strategies (Sandler et al., 1989; Shulman, 1993; Stewart, 1989). While research has not yet supported this hypothesis in the sport context, some empirical support has been demonstrated in the general social support literature. For example, Shulman (1993) concluded, based on the results of a discriminate analysis with 121 male and female adolescents, that those who tended to respond most passively when confronted with stressful encounter also reported living with families who were characterized as high in conflict and coercion.

Dunkel-Schetter and her colleagues (Dunkel-Schetter & Bennett, 1990; Dunkel-Schetter et al., 1987) provide some evidence for a reciprocal relation between received social support and coping. On one hand, the reception of social resources acts to influence how an individual handles stressful person-environment transactions. For example, providing information and advice may increase a person's ability to confront and solve a stressful problem. On the other hand, how a person copes with a stressful transaction influences what social resources are provided to the individual through their social network. Thus coping acts as a cue providing both specific and non-specific information regarding what social resources are useful and needed from the social network (Dunkel-Schetter et al., 1987). Data collected from a college sample revealed that the use of problem-solving, seeking social support, and positive reappraisal were all associated with lower levels of received social support (Dunkel-Schetter et al., 1987). It was concluded that the coping strategies (i.e., problem-solving, seeking social support,

positive reappraisal) provided cues to the social network regarding lowered needs or desires for social support.

Perceptions of available support is hypothesized to influence appraisals formed regarding the nature of person-environment transactions, as well as the coping actions employed to handle those demands (Komproe et al., 1997; Pierce et al., 1996; Schwarzer & Lepping, 1991; Stewart, 1989). In general, the beliefs about how others will respond and help in the face of specific transactions are postulated to influence what events are regarded as threatening (Gore, 1985; Pierce et al., 1996; Sandler et al., 1989; Schwarzer & Leppin, 1991). Additionally, global perceptions of social support are thought to impact the intensity of the distressing emotions experienced during demanding transactions (Pierce et al., 1996). For example, the distress that an adolescent gymnast may feel following an argument with her coach over training is likely to be affected by the belief that she is valued and cared for by members of her social network (both in and outside of the gymnasium).

Perceptions of social support are also posited to influence the coping actions employed to handle the demands of a stressful transaction (Pierce et al, 1996; Smith et al., 1990). Pierce et al. (1996) hypothesizes that global perception of support act to mobilize the individual to seek out and obtain assistance. Stern and Zevon (1990) reported an association between adolescents who had negative perceptions of available support from their family members and the use of emotion-focused and avoidant coping such as wishful thinking, denial, and tension reduction when handling stressful demands. From an adolescent sport sample, Smith et al. (1990) found that perceptions of social support interacted with coping to impact the stress-injury relation. Independently, neither

social support nor coping during stressful transactions influenced athletes' rate of injury occurrence. Rather, it was found that during high stress, athletes with low coping skills and low perceptions of support had the greatest incidence of athletic injury (Smith et al., 1990).

Thus, social support plays an important role in the stress process through its relation with appraisal and coping. Moreover, there seems to be some evidence that suggests different dimensions of social support have qualitatively different relations to appraisal and coping (Dunkel-Schetter et al., 1987; Pearlin & Schooler, 1978; Stern & Zevon, 1990; Smith et al., 1990). As of yet, research has not examined the interrelated nature among the social support dimensions in its relation to stress. Consequently it is unclear whether different dimensions of social support influence the stress process independently and/or interact with one another. Moreover, it is unknown how important moderator variables such as gender and context (e.g., sport) might influence individual differences in the relation of social support to the stress process.

#### 2.9 The Research Question

The primary objective of this dissertation is to understand the nature of early adolescent athletes' social resources and coping responses. Embedded within this objective are several theoretical and descriptive questions regarding social support and coping that haven't been fully addressed within the sport literature with early adolescents. This dissertation attempts to improve upon past research efforts. First, this research is theoretically grounded. Two conceptual models have been posited to explain the hypothesized relationships between social support and coping. These models have been

formed based upon empirical findings and Lazarus' (1991a, 1999) Cognitive-

Motivational-Relational theoretical model of stress and emotion. Second, social support will be examined as a multidimensional construct. Conceptually, social support researchers argue that the functional influence of social support can only be understood when all dimensions of social support are examined concurrent to one another (Pierce et al., 1996; Komproe et al., 1997). Third, gender is examined as an important moderator of the social support and coping processes. There is little research in the sport literature that examines gender effects on social support and coping in adolescents. Finally, social support and coping are measured using theoretically grounded instrumentation for an adolescent population.

Guided by Lazarus' (1991a, 1999) Cognitive-Motivational-Relational framework, the first theoretical question is what is the relation between social support and coping within the sport context? Based upon the literature, two conceptual models are posited explaining the plausible relations between social support and coping, (i) the direct effects model, and (ii) the mediation model (see Figure 2.3). The direct effects model of social support posits that each of the dimensions of social support (i.e., social support network, received social support, perceived social support) directly influences the function of coping strategies employed during a stressful sport-related competitive transaction. Support for the direct effects model of social support exists if each dimension of social support is independently and significantly related to the function of coping strategies employed. While, empirical research has not yet linked the social support network dimension directly to coping, some studies have demonstrated that received social support and perceptions of social support correlate with coping (Dunkel-Schetter &



Figure 2.3 Direct effect and mediation model describing the relations between social support dimensions and coping.

Bennett, 1990; Dunkel-Schetter et al., 1987; Komproe et al., 1997). In addition, perceptions of social support appear to most strongly relate to coping when compared to the strength of the relations between received social support and coping (Komproe et al., 1997).

A second plausible model relating social support and coping, the mediation model, holds that the relation between coping and the two social support variables of social support network size and received social support is mediated by perceptions of social support. Recent research examining how beliefs about the availability of social support are constructed has implicated both social support network and the reception of social support as two critical environmental factors contributing to the formation of social support perceptions (Lakey et al., 1996). Support for the mediation model of social support exists if (a) social support network and received social support are significantly related to both perceptions of social support and coping function, (b) the relation between perceptions of social support variables and coping function, and (c) presentation of perceptions of social support first within the regression equation extinguishes the significant relations between the other two social support variables and coping function (Baron & Kenny, 1986).

To date, no work has been done that examines (a) how the different dimensions of social support relate to one another during a stressful transaction, and (b) how each of these social support dimensions relate to coping efforts employed to manage stressful transactions. Thus, no hypothesis is forwarded regarding which model will best describe the relation under investigation.

Age, gender, and environmental context have all been identified as important factors influencing social support, coping and the relation between social support and coping. In this dissertation, age and context (i.e., sport) will be constrained and thus, not studied directly. Gender, on the other hand, will be examined. To date, no research has specifically examined gender as a moderating influence on the social support and coping relation of early adolescent athletes. It is conceivable that gender will influence the social support and coping with respect to the strength of the social support dimension and coping relation.

Empirical research indicates that females have more access to social support resources with respect to social support network, received social support, and perceptions of social support compared to males (Barbee et al., 1993). Further, empirical research also suggests that females report seeking more social support directed towards emotional coping functions. This latter finding may be due in part to females' greater access to social support resources. This pattern of results, however, may not be observed within the sport context. That is, the strength of relation between female adolescent athletes' social support and coping may be weaker than that observed in non-sport contexts. It has been suggested that the competitive nature of sport does not nourish close intimate ties among peers, which foster the provision of social supportive resources (Bigelow et al., 1989).

The infrequent use of male adolescents' use of social support may reflect differences in the content of social support resources obtained. That is, gender may influence the types of social support resources that are available and can be obtained during stressful person-environment transactions. According to the socialization hypothesis, males are socialized to act autonomously and to manage stressful transactions

through instrumental means (Feldman et al., 1995). Females, on the other hand, are socialized to act with concern for interpersonal connection and to resolve stressful transactions through expressing emotion and seeking social support (Feldman et al., 1995). Gender differences in social support resources (i.e., social support network size, content types of social support received, and perceptions of available social support) may be important for acquiring coping strategies that are deemed socially acceptable for each gender.

Thus, a theoretical question addressed by this dissertation is, does the gender of an early adolescent athlete moderate the relation between social support and coping within the sport context? Even though no research exists on this question, Lazarus (1999) suggests that gender may be an important variable that moderate the influence of resources, such as social support, within the stress process.

In conjunction with the above research question, descriptive information will also be sought to better understand how gender affects the social support resources and coping function of early adolescent athletes. Specifically, the following relations will be addressed (a) the role of gender in the number and members of social support network for early adolescent athletes, the amount and type of received social support, and the perceptions of available support by early adolescent athletes within the sport context; and (b) the role of gender in the functional purpose of coping efforts used to manage a stressful transaction in sport. Based on the literature reviewed, it is expected that female early adolescents will have fewer members within their social network, received more emotional support, perceive social support to be more readily available, as well as use more emotion focused coping compared to their male counterparts.

#### Chapter 3

#### Methodology

#### 3.1 Participants

3.1.1 Constraint on participation. This dissertation sought to understand early adolescent's social support and coping, within the context of managing interpersonal stress-related encounters in sport. Early adolescents were targeted as the population of interest due to the salience of coping responses and social supportive resources for individual's well-being during this stage of the lifespan (Feldman et al., 1995; Graber & Brooks-Gunn, 1996; Peterson et al., 1991). Early adolescents experience biological, psychological, and social transitions (often simultaneously) that require new ways of adapting (Graber & Brooks-Gunn, 1996). Additionally, research demonstrates that early adolescents experience more life events than older children and adolescents (Ge, Lorenz, Conger, Elder, & Simons, 1994). Graber and Brooks-Gunn (1996) posit that during periods of transition individuals may be at increased vulnerability to how stress is experienced during life events. Resources such as parental social support has been demonstrated to be important component of interventions with early adolescents in protecting against use of high risk behaviours such as smoking and drinking alcohol which has been associated with poor physical and mental health during adulthood (Jessor, 1992). Thus, an understanding of coping and social support during *early adolescence* is important for understanding individual differences in risk and resilience and the development of effective interventions (Compas, 1998; Graber & Brooks-Gunn, 1996).

Among the many different sources of stress that an athlete can experience, interpersonal difficulties with family, peers, and coaches participants are commonly cited

by youth as a source of stress in sport. Yet very little research has been devoted to examining how young adolescent athletes manage this specific source of stress. Thus, two primary constraints were placed on the sample of interest: (a) an age criterion of eleven to fifteen years, and (b) the experience of an interpersonal stress-related encounter.

It was reasoned that interactive *team* sport participants were more likely to experience interpersonal stress and receive help or assistance from others in the sport environment compared to individual sport participants. Interactive team sport athletes depend upon interpersonal interactions (i.e., relationships with parents, teammates, coaches) for both team and individual athletic success. These interpersonal interactions between team members (including coaches and family members) are likely to be perceived by the athletes as positive or negative in nature and consequently evaluate those interactions to be supportive or stressful. Thus, male and female adolescents between eleven and fifteen who participated in interactive team sport and who experienced an interpersonal stress-related encounter in sport were targeted for this research.

3.1.2 Description of participants. In total, 719 early adolescent interactive team sport athletes participated in the study. Participants were recruited from basketball, field hockey, lacrosse, rugby, soccer, and volleyball teams as well as week-long summer sport camps. Thirty-one adolescent athletes, who were younger than 11 years or older than 15 years and had completed the measures, were not included in the sample due to the age criterion. Pilot studies were conducted with ninety-seven participants (N = 58, pilot study; N = 39, preliminary study). The preliminary study was combined with the main

sample in order to increase the power of planned multivariate analyses of data (refer to Section 3.4). Multivariate analysis of variance (MANOVA) tests revealed no significant differences between the two samples on the measured variables of age, gender, and social support variables, F(11, 614) = 1.346, p = .195; as well as stress and coping variables, F(5, 567) = .799, p = .550 (Stevens, 1996; Tabachnick & Fidell, 2001). Thus, it was determined that the two samples could be combined into one large sample (N = 626).

Of the 626 early adolescent athletes, forty-two participants did not report experiencing any interpersonal stress in sport and thus were excluded from the data analysis (as indicated in questions 36 and 40 of the questionnaire; refer to Appendix E). An additional nine participants were excluded due to reporting a non-interpersonal stress encounter. The final sample consisted of 575 early adolescent athletes (n = 290 males; n = 285 females). Participants ranged in age between 11 to 15 years with a mean of approximate 13 years (M = 13.18, SD = 1.22). The socioeconomic index scores (Blishen, Carroll, & Moore, 1987) for family ranged between 0 (no parents currently employed) and 203.48 (both parents working in high socioeconomic indexed occupations such as dentistry) with an average score of 97.73 (SD = 29.15). A European-Caucasian ethnic background was reported by approximately 60% (n = 346) of the participants. Seventeen athletes (3% of the sample) reported a First Nations heritage. A South Asian ethnic background was reported by 31 participants (5% of the sample), while 98 athletes (17% of sample) reported having a South East Asian background. Only nine participants (2% of the sample) identified a Hispanic heritage. 119 participants reported no ethnic heritage (21% of the sample).

#### 3.2 Initial Measurement Development

Information was collected with respect to (a) personal descriptive information; (b) social support including network size, the type and amount of social support received, and perceptions about social support from specific network members; (c) a single interpersonal stress encounter in sport; and (d) coping strategies and its function used to manage the interpersonal stress. Due to a lack of prior research examining these constructs with an adolescent athletic sample, instruments needed to be developed (or modified) to attain the desired information. Five different instruments were adapted for the study including: (i) the General Personal Information questionnaire, (ii) the Appraisal questionnaire, (iii) the Youth Coping questionnaire, (iv) the Sport-Modified Social Support Appraisal scale (APP; Dubow & Ullman, 1989), and (v) the Modified-Social Support Survey (SSS; Richman, Rosenfeld, & Hardy, 1993). The development and pilot testing of instrumentation are reviewed in the following sections.

3.2.1 The General Personal Information questionnaire (GPI). Early adolescent athletes reported gender, age, family socioeconomic status, and ethnic heritage. When collecting data within large multicultural urban centre, it is recommended that such descriptive information be measured because (a) increasing diversity within the demographics of urban centers in North American does not permit researchers to assume that the sample is typical of past research (i.e., Caucasian, middle class), and (b) it permits comparison across samples in future research (Entwisle & Astone, 1994; Phinney, 1990).

Ethnic heritage and family socioeconomic status questions followed recommended guidelines set forth by Ensminger, Forrest, Riley, Kang, et al., 2000; Entwisle and Astone, 1994; Hernandez, 1997. Ethnic origin labels were presented in accordance with the most recent Consensus data from the sampling region were presented (Community Services, 1999). Participants marked all boxes that were adjacent to the ethnic labels applicable to him or her. Space was also made available for the athlete to indicate an ethnic category that was not included in the presented list. Because 'Canadian' and 'American' are not considered to represent a single ethnic heritage, but rather, be multicultural in nature, participants were encouraged to not indicate 'Canadian' or 'American' in his or her response. Participants checked the box for 'no ethnic heritage' if the athlete did not know their ethnic heritage or felt strongly that none of the presented ethnic label did not apply to him or her. Seven general ethnic heritage categories were derived from the ethnic label list (see Table 3.1).

Table 3.1

Cultural Categories and Ethnic Labels Used to Describe Ethnic Origin

| Cultural Category        | Ethnic Origin Label   |
|--------------------------|---|
| European-Caucasian       | One or more of: British, Dutch, French, German, Greek,<br>Irish, Italian, Jewish, Polish, Portuguese, Scottish, Ukrainian |
| Aboriginal               | Native  |
| South Asian              | One or more of: East Indian, Persian  |
| South East Asian         | One or more of: Chinese, Korean, Japanese, Vietnamese   |
| Hispanic/ South American | Hispanic  |
| Other                    | Label given by participant not included in the above list   |

Family socioeconomic status was assessed with the 1981 Socioeconomic Index for Occupations in Canada (Blishen, Carroll, & Moore, 1987). Adolescent athletes indicated the occupations held by both his and/or her father and mother or parental guardians in the space provided (refer to Appendix E). Socioeconomic status scores for each individual parent were assigned based on standardized values within the 1981 Socioeconomic index tables (Blishen et al., 1987). The index derives a socioeconomic score of an occupation based on (a) standardized income earning, (b) educational attainment levels, and (c) social prestige scores. Five hundred and fourteen occupations from the Canadian Classification and Dictionary of Occupations are ranked by the index (Community Services, 1999). A family socioeconomic status score was derived through summing the father's and mother's socioeconomic status ratings.

3.2.2 The Appraisal questionnaire (AQ). To identify and describe the *context* of adolescent athletes' coping efforts, the Appraisal questionnaire measured athletes' appraisal of a specific troubled interpersonal encounter during sport. Athletes were asked to (i) identify and describe the most stressful interpersonal incident occurring in sport within the past year, and (ii) to answer three appraisal questions about the encounter.

Athletes first identified and described the *most stressful* experience that they had faced in sport during the past 12 month that involved another person. To stimulate athletes' memory, examples of stressful experiences reported in previous sport psychology research with adolescent athletes were presented within the instructions of this section of the questionnaire. Examples included experiences with coaches, teammates, parents, officials, and spectators (see Appendix E). Participants described the

stressful experience and identified why it was stressful in the space provided. Athletes then indicated on two forced-choice questions (a) how long the stressful interaction lasted and (b) when the stressful interaction had occurred (refer to Appendix E). These questions were included to further describe the type of stressful interaction. The final question of the Appraisal questionnaire assessed the intensity of the stress experienced with a stress thermometer. The stress thermometer is an analogue scale used to assess the perceived stress of a self-indicated situation (Francis & Stanley, 1989; Kowalski & Crocker, 2001). Participants indicated the amount of experienced stress by marking an 'X' within the thermometer scale. Athletes also wrote the numerical score represented by the 'X' in the space provided adjacent to the thermometer (refer to Appendix E). A participant's response could range from 0 ("no stress at all") to 100 ("most stress ever experienced").

3.2.3 The Youth Coping questionnaire (YCQ). In light of the conceptual and measurement complexities of coping, careful consideration was needed regarding the operalization of the coping construct. Coping was assessed both at the molecular (i.e., coping strategies) and the molar (i.e., coping function) levels (Crocker et al., 1998). However, the molar or functional level of coping (i.e., problem-focused, emotionfocused, and avoidance) was reasoned to be most meaningful way of operationalizing coping in order to understand its relation to social support for an adolescent athlete population. While assessment of coping at the molecular-strategy level permits description of coping efforts, it may not reflect the true nature of the social supportcoping relation as it is possible to use coping strategies without the consideration of

supportive others. It seems more likely that the directed function of specific coping strategies are related to supported relationships.

The YCQ was adapted to assess early adolescent athletes coping function based on the work of Compas and his colleagues (Compas et al., 1988; Compas & Williams, 1990; Compas et al., 1996). The YCQ (a) describes the types of specific coping strategies that individuals use during a self-described stressful encounter, and (b) evaluates the amount of coping effort exerted towards problem-focused, emotion-focused, and avoidance coping functions (refer to Appendix E).

To complete this measure, athletes first listed the efforts (i.e., coping strategies) used to manage the interpersonal stressful encounter that was described earlier within the Appraisal questionnaire. Athletes listed *all* attempted strategies (up to nine) whether or not the strategy was perceived to be successful or not (Compas et al., 1988; Compas & Williams, 1990; Compas et al., 1996). Examples of coping strategies reported by adolescents in prior research (e.g., Crocker & Isaak, 1997; Phelps & Jarvis, 1994; Ryan-Wenger, 1992), were presented in the instructions in order to operationalize coping as well as to stimulate participants' memory. After listing the employed strategies, athletes then indicated (a) how much the coping strategy was used, (b) the amount of functional purpose towards problem-focused coping, "I used this strategy to try to change the situation"; (c) the amount of functional purpose towards emotion-focused coping, "I used this strategy to control or manage my feelings"; and (d) the amount of functional purpose towards avoidance coping, "I used this strategy to physically and/or mentally avoid the situation" using a five-point Likert scale ranging from 0 (used not at all) to 4 (used very much) for each coping strategy listed (refer to Appendix E).

A major challenge with coping measures is scoring. Two different scoring methods have been advocated in the coping literature for in the assessment of coping function. One method, the summed coping score method, assumes that coping strategies *uniformly* contribute towards the overall coping function effort. This assumes there is a linear relation between the amount of coping strategies used and the amount of coping function effort. The second method, termed relative or proportional coping score, produces a value that reflects the extent of utilization of a particular coping strategy (or coping function) relative to the total amount of coping effort expended. Coping researchers have used this scoring method mainly to create coping profiles (e.g., Aldwin, 1994; Valentiner, Holahan, & Moos, 1994; Vitalino, Maiuro, Russo, & Becker, 1987). For example, proportional coping scores have been used to compare individuals who primarily employ problem-focused coping efforts versus those who principally use wishful thinking (Vitalino et al., 1987).

The structure of the data collected by the YCQ, however, does not lend itself to either of these two scoring methods. To sum across coping strategies, an equal number of coping strategies across *individuals* is required. An unequal number of coping strategies is likely to result in an overrepresentation of coping function effort by individuals who reported a large number of coping strategies. Because individuals differ in the number of coping strategies listed while completing the YCQ, the summed score was deemed inappropriate. The relative scoring method was also judged to be inappropriate because theoretically, this method has serious conceptual weaknesses. Coping functions are not orthogonal or independent, but rather are theoretically related in a complex manner (Lazarus, 1999). That is, the amount of problem-focused coping function effort cannot be

determined by the amount of emotion-focused coping effort nor avoidance coping effort. Given those problems, a third coping scoring method, termed mean weighted coping score, was developed as the most appropriate method for obtaining score values on the YCQ. The mean weighted score best reflects individual differences in coping function efforts.

The mean weighted coping score is a mathematically manipulated value that has not received attention in the coping measurement literature. Its advantage is that it can account for the unique contributions from individual coping strategies without a bias from the number of coping strategies employed. Coping function values are derived by (i) weighting the amount of coping function use by the extent of coping strategy use for each individual coping strategy, (ii) summing the weighted coping function scores across coping strategies, and (c) dividing by the total number of strategies to obtain an average coping function score. Individuals with high mean weighted coping function scores (i.e., between 12 - 16), report on average using specific coping function of interest. On the other hand, individuals who score low mean weighted coping function values (i.e., 0 - 4) report on average using specific coping strategies 'a little' directing those coping efforts 'not at all' or only 'a little' toward the coping function of interest.

3.2.4 Sport - Modified Social Support Appraisal scale (s-APP). Global perceptions of social support were assessed with a modified version of Dubow and Ullman's (1989) Social Support Appraisal Scale (APP). The APP is a 31-item scale that was developed to measure whether the child believed he/she is loved, cared for, and

valued by his/her family, peers, and teachers. For the purposes of this research, the modifications reflected perceptions of available social support from a sport social support network (i.e., family, peers, and coaches). The modified instrument was called s-APP (refer to Appendix E). Items of the s-APP are worded in an adapted "structure alternative format" where each item describes two types of children. Sample items include, "Some kids feel that their coaches make them feel like they are not good enough, but others do not. Do your coaches make you feel like you are not good enough?", "Some kids have friends who like to hear their ideas, but others do not. Do your friends like to hear your ideas?", "Some kids are liked by their teammates but other kids are not. Are you well liked by your teammates?" and "Some kids feel left out by their family, but others do not. Do you feel left out by your family?". This wording style, recommended by Harter (1985a), reduces social desirable responses from child and adolescent samples (Dubow & Ullman, 1989). Items are scored on a five point Likert scale ranging from 1 ("never") to 5 ("always"). Items 1, 3-4, 10, 13, 15-17, 21-23, 26, 29 are reversed-scored (refer to Appendix E). Higher scores indicate greater perception of social support from family, peers, and coaches.

Adequate psychometric properties of the APP have been demonstrated with elementary and high school student samples (Dubow & Ullman,, 1989; Wall, Covell, & MacIntyre, 1999). Dubow and Ullman (1989) reported that the APP scale has a Cronbach's alpha of .88, with all item-total intercorrelations exceeding .20. The APP also demonstrated a three-to-four week test-retest correlation coefficient of r = .75. A principal component analysis with a Varimax rotation revealed a three-factor solution (parents, peers, and teacher) with eigenvalues ranging from 6.90 to 2.34. Cronbach's alpha for the

subscales ranged from .78 to .83. Convergent and divergent validity was determined for the APP scale by demonstrating the hypothesized relations with the Social Support Scale for children (Harter, 1985b), the Loneliness scale (Asher, Hymel, & Renshw, 1984), Peer Social Preference scale (French & Waas, 1985), Social Acceptance and Global Self-Worth subscales of Self-Preference Profile for children (Harter, 1985a) and peer nomination of aggression.

*3.2.5 Modified - Social Support Survey (m-SSS).* A modified version of the Social Support Survey (SSS; Richman et al., 1993) assessed (a) social support network size, (b) amount of social support received, and (c) the amount of a specific content type of social support received from specific relationships (i.e., family, peers, and coaches). Eight content types of social support are evaluated, including listening support, sport appreciation, sport challenge, emotional support, emotional challenge, reality confirmation, tangible assistance, and personal assistance (Bianco & Weinberg, 2001; Richman et al., 1993). For each type of social support content, participants evaluate: (i) who provides the support (ii) the amount of support that is received by the specific provider, and (iii) the general amount of support that is received (refer to Appendix C).

The SSS was originally developed for use with adult populations (Richman et al., 1993). Consequently, modifications were necessary for application with an early adolescent sample. The SSS was modified structurally and with respect to the wording of instructions and of particular items. Structurally two modifications were made. First, m-SSS reduced the number of items assessing the amount of received social support from three to a single item. The original version asked athletes to evaluate (i) satisfaction with

current level of support, (ii) difficulty of obtaining more of that support, and (iii) importance of that support to one's overall well being. The latter two items appear to be especially problematic for assessing *received* social support; the content of these two items addresses *perceptions* of social support. The m-SSS modified the received social support items to the use of single simple evaluation of the 'the amount of received social support'. The second structural modification included reducing the allowable space for identifying providers of social support. Milardo (1992) reported that typical adolescent significant other and exchange networks consist of groups between five to twenty members. Thus, providing more the five spaces across eight support content types was deemed to be unnecessary for an adolescent population.

Several wording changes were required to adapt the SSS for an adolescent sporting population. Based on recommendations of Rees, Hardy, Ingledew, and Evans (2000), the instructions were modified so that the participants would consider support from *all* sources including coaches, family, friends, teachers, and teammates. Next, the labels of two social support contents were modified for the *sport context*. Task appreciation support and task challenge support were changed to "sport appreciation support" and "sport challenge support" respectively. Additionally, descriptions of all the social support content (with the exception of listening support, emotional support, and emotional challenge) were modified to direct attention specifically to the sport context (see Appendix C). Third, descriptions of the social support resources were modified to a grade 5 reading level. For example, the description of task challenge support (sport challenge) was changed from "People who challenge your way of thinking about your work or activity in order to stretch you, motivate you, and lead you to greater creativity,

excitement, and involvement in your work or activity" to "People who encourage you to improve your current sport performance and to push yourself to go beyond your limits.

Participants completed the m-SSS in two steps. First, athletes identified the individual members of his/her social network who provided specific types of social support (i.e., listening support, task appreciation, task challenge, emotion support, emotional challenge, reality confirmation, tangible assistance, and personal assistance) by listing the individual's initials and relationship (i.e., parent, family member, friend, teammate, coach, parent's friend) with the participant. If 'no person' provided athletes with a specific content type of social support, participants indicated "no one". Athletes identified only the five *most important* providers for each social support content type. Next, participants indicated the amount of social support that is received from both the individual network member and the social network in general. Per social support content type, athletes indicated the amount of social support received from each listed provider on a five-point Likert scale ranging from 1 (received very little) to 5 (received very much). Athletes' indicating 'no one' did not complete this question since it was irrelevant. The final question assessed the overall amount of social support received (see item "f" of the m-SSS in Appendix C). This item was scored on a five-point Likert scale ranging from 1 (received very little) to 5 (received very much). Athletes who indicated 'no one' indicated '1' (i.e., received very little) on this measure.

In total, three types of social support network size scores were obtained including, (i) the number of individuals who provide the athlete with a specific social support content type, (ii) the number of individuals within a specific role (i.e., family, friend, teammate, coach, other individuals) who provide the athlete with a specific social support

content type, and (iii) a total size of social support network. Social support network size was computed by counting the number of individual's who were identified within the different social support content type scales. The number of providers per content type was summed across all individuals listed. Social support network size per social support content type score ranged from 0 to 5 (individuals). Providers were classified into specific relationships (i.e. family, friends, sport friends (or teammates), and coaches) and the number of providers within specific relationship categories were obtained for each social support content type ranged from 0 to 5 (individuals). A score for the total network size was also obtained. Across the eight different content types, individuals listed were counted. Persons who were listed on more than one type of social support content were counted only once. High scores on this measure indicated a large social support network, whereas low scores indicated a small social support network.

Two types of received social support were obtained, including the amount of social support content received from specific relationships and the overall amount of social support received per social support content type. To obtain a score for the amount of social support received from specific relationships (i.e., coach, family, friends, teammates, and other adults), Likert scale ratings was summed across all identified providers within the specific relationship (for each support content type). Scores range from 0 (no social support received from a specific relationship type for a specific support content category) to 25 (received very much of the content type of support from all possible providers). Higher values indicate greater amounts of received social support

from specific relationship types. Overall received social support scores were determined for each type of social support through rankings on a five-point Likert scale.

Very little research has examined the psychometric properties of the SSS. Richman et al. (1993) reported that the SSS has adequate psychometric properties. Reliability of the SSS was assessed using test-retest methods (both a 2 week and 5 week interval) with a sample of 27 students (Richman et al., 1993). Results were judged to demonstrate acceptable levels of reliability given (a) the small number of respondents, (b) the item-by-item analyses, and (c) the unstable nature of social support. Content and structural validity of the SSS have been assessed using content analysis of the social support literature with results revealing that eight types of social support content are meaningful (Richman, et al., 1993).

## 3.3 Instrument Testing and Modification

*3.3.1 Pilot study.* The primary purpose of the pilot study was to assess the adequacy of the instrumentation for an early adolescent sport sample. Specifically an instrument was judged to be adequate if (i) descriptive means and standard deviations of the data reflected the expected 'normal' range of values as determined by past research and/or theory, (ii) correlations reached expected theoretical values, and (iii) participants perceived the instrument to be relatively simple to complete. It should be noted that full psychometric testing of the instruments was not completed at this stage as the desired sample size would not have provided sufficient power for the analysis (Stevens, 1996; Tabachnick & Fidell, 2001). An additional purpose of the pilot study was to test

administrative procedures of the instruments (i.e., time to complete, ordering of the instruments, and instructional information verbalized).

Fifty-eight early adolescent athletes (n = 21, boys; n = 37, girls) from soccer and field hockey sport clubs within a large urban centre of British Columbia participated in the pilot study. Participants ranged in age 10 and 13 years<sup>4</sup>. This pilot sample represented approximately 10% of the desired sample size. Consent was obtained from the athlete and a legal guardian prior to testing (see Appendix B). Athletes did not receive any compensation for participation in the study.

During testing, athletes completed the questionnaire in four sections (i. s-APP, ii. m-SSS, iii. AQ & YCQ, and iv. GPI, respectively). The ordering of the instruments was based upon question content and response difficulty. The questionnaire was completed independently in a group setting. The participants received verbal instructions prior to each section. The primary research and a research assistant were present to answer any questions and to collect the questionnaire upon completion.

For the purposes of the pilot study, instrument adequacy was judged on the achievement of three conditions: (a) 'normal' range of means and standard deviation, (b) correlations that reach expected theoretical values, and (c) perceived ease to complete the instrument. The adequacy of the s-APP, m-SSS, and YCQ is discussed in light of the set conditions.

(i) s-APP. The means and standard deviation scores of the s-APP are listed in Table 3.2. These values were evaluated to fall within the expected range based on prior research with children and late adolescent samples (Dubow & Ullman, 1989; Wall et al., 1999). Non-significant correlations were found between the scales (see Table 3.3). This

# Table 3.2

Descriptive Values for Social Support, Coping, and Interpersonal Stress Variables from Pilot Study (N = 58)

| Variable                      | M <sup>a</sup> | SD   |
|-------------------------------|----------------|------|
| Overall support network size  | 10.26          | 4.35 |
| Listening support size        | 4.55           | 0.78 |
| Sport appreciation size       | 4.45           | 0.84 |
| Sport challenge size          | 4.05           | 1.10 |
| Emotion support size          | 4.02           | 1.08 |
| Emotional challenge size      | 3.98           | 1.08 |
| Reality confirmation size     | 3.29           | 1.53 |
| Tangible support size         | 3.29           | 1.26 |
| Personal assistance size      | 3.12           | 1.31 |
| Received listening support    | 4.28           | .74  |
| Received sport appreciation   | . 4.22         | .80  |
| Received sport challenge      | 4.32           | .68  |
| Received emotion support      | 4.36           | .76  |
| Received emotional challenge  | 3.88           | 1.12 |
| Received reality confirmation | 4.12           | 1.01 |
| Received tangible support     | 4.53           | .59  |
| Received personal assistance  | 4.09           | .92  |

Table 3.2 (continued).

| Variable                                  | M <sup>a</sup> | SD   |
|---|----------------|------|
| Friends perception of social support      | 61.51          | 5.33 |
| Family perception of social support       | 47.44          | 5.61 |
| Coach perception of social support        | 17.69          | 2.60 |
| Number of coping strategies <sup>a</sup>  | 2.63           | 1.77 |
| Total problem-focused coping <sup>a</sup> | 6.67           | 3.95 |
| Total emotion-focused coping <sup>a</sup> | 7.18           | 3.85 |
| Total avoidance coping <sup>a</sup>       | 6.38           | 3.87 |

Note:  ${}^{a}n = 48$ .

Table 3.3

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Spearman's Rho Coefficients among Perceived Social Support Variables from Pilot

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| Study | (N = | 58) |
|-------|------|-----|
|-------|------|-----|

| Variable                    | 1.  | 2.  | 3. |
|-----------------------------|-----|-----|----|
| 1. Perceived Family Support | -   |     |    |
| 2. Perceived Friend Support | .29 | -   |    |
| 3. Perceived Coach Support  | .23 | .11 | -  |

was not expected as previous research demonstrated significant low to moderate correlations between the scales (Dubow & Ullman, 1989; Wall et al., 1999). The nonsignificant correlations imply that the scales are measuring different sources of perceived social support. This finding may be particularly important for measuring perceived social support in the sport context. Perception of social support in sport may be role dependent, with each provider expected to contribute different types of social support (Richman et al., 1989; Rosenfeld et al., 1991; Udry et al., 1997). Additionally the small sample size may have limited power needed to demonstrate significant correlations.

Athletes had relatively few problems completing the s-APP. In general, almost all respondents reported that the s-APP was "easy" to complete. Difficulties that commonly arose included understanding the meanings of identifiers between never and always (i.e., "if I have one coach who I don't like, but I like all the others, how do I score this item?") and the negatively worded questions. Participants required approximately ten minutes to complete this section of the questionnaire.

In summary, the s-APP was determined to be an adequate instrument to assess perceived social support with an early adolescent sample. Means and standard deviations fell within acceptable ranges. Additionally, the instrument was not reported to be a burden to the participant. Although correlations between the scales were lower than expected this was determined to be reasonable due to possible contextual differences between the education and sport setting and lower power of the sample size.

(ii) m-SSS. Means and standard deviations for social support network size and received social support (in accordance to each of the eight support content types) are listed Table 3.2. Although values fell within the predicted range, patterns in the data

suggest that the m-SSS may be problematic. First, means and standard deviation values revealed that the number of providers of social support favoured the upper end of the scale. It is plausible that an early adolescent athlete may have many more members who provide him/her with a specific type of social support content. Restricting the scale to only five members may truncate the data thereby limiting the variance that typically exists with an early adolescent sample (Tabachnick & Fidell, 2001). An additional concern was the decrease in means across the scales suggesting the possibility of a presentation and/or maturational influence.

Similar to the social support network size descriptive scores, the standard deviation values for received social support scales were quite small. This result is a concern for multivariate statistical procedures; however, it is likely to be representative of an early adolescent sample. Early adolescent athletes might not have the cognitive ability to assess the amount of social support that can be obtained from a social support provider (Keating, 1990). Thus, an early adolescent is likely to judge any amount of received social support to be 'quite a bit' based upon concrete evidence derived from responses to earlier questions. That is, an athlete who reports receiving moderate to high amounts of a specific content type of social support from each of the five members of his/her network identified, is likely to deduct that he/she receives "very much" social support regardless of how much support is actually possible to receive.

Low to moderately strong relationships were found between the number of providers of different support content types (see Table 3.4). This result implies that certain types of social support content are provided by a similar number of providers, while other types of social support content differ in the number of providers. Low to moderate relationships

# Table 3.4

Spearman's Rho Coefficients among m-SSS Social Support Network Size Variables from Pilot Study (N = 58)

| Variable                | 1.    | 2.    | 3.    | 4.    | 5.    | 6.    | 7.    | 8. |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|----|
| 1. Listening support    | -     | .,    |       |       |       |       |       |    |
| 2. Sport appreciation   | .63** | -     |       |       |       |       |       |    |
| 3. Sport challenge      | .63** | .60** | -     |       |       |       |       |    |
| 4. Emotional support    | .54** | .75** | .78** | -     |       |       |       |    |
| 5. Emotional challenge  | .43** | .41** | .59** | .64** | -     |       |       |    |
| 6. Reality confirmation | .57** | .53** | .68** | .69** | .69** | -     |       |    |
| 7. Tangible assistance  | .19   | .05   | .10   | .11   | .20   | .27   | -     |    |
| 8. Personal assistance  | .25   | .33*  | .42** | .43** | .61** | .59** | .45** | _  |

Note. \**p* < .05. \*\**p* <.01.

were also demonstrated among received social support scales (see Table 3.5). Approximately two-thirds of the relations achieved statistical significance. Further, the pattern of significant relations found does not support the proposed eight-factor model as theorized by Hardy and Crace (1991).

The m-SSS was evaluated to be burdensome for an early adolescent athlete sample. Athletes asked many questions and failed to maintain attention and motivation to complete the questionnaire in a timely manner. On average, twenty minutes was required to complete the m-SSS. The participants did not fully understand (a) the definition of several types of social support content including the conceptual differences between different sources of support, and (b) the procedures for completing the measure. Younger athletes also had difficulty recalling members of their social support network who actually provided him/her with specified types of social support content. This latter observation is consistent with child development research. Gottlieb (1991) commented that individuals under the age of 11 (i.e., pre-adolescence) associate the general provision of social support with the *role* of the actual provider not the content type of social support. In other words, the athlete is able to state that his mother cares for him and provides support for him during sport because that is what mothers are suppose to do; but is unable to report that in terms of emotional support his mother is one person out of many who provide that source of support for him during sport. With age, the athlete becomes increasingly capable of distinguishing what sources of social support an individual provides regardless of the role that person obtains (Gottlieb, 1991).

In summary, the m-SSS was evaluated to be inadequate for an early adolescent athlete sample. The data obtained was problematic and logistically, the m-SSS was too

## Table 3.5

Spearman's Rho Coefficients among m-SSS Received Social Support Variables from Pilot Study (N = 58)

| Variable                | 1.                | 2.    | 3.    | 4.   | 5.    | 6.    | 7.    | 8. |
|-------------------------|-------------------|-------|-------|------|-------|-------|-------|----|
| 1. Listening support    | -                 |       |       |      |       |       |       |    |
| 2. Sport appreciation   | .55**             | -     |       |      |       |       |       |    |
| 3. Sport challenge      | .53**             | .52** | -     |      |       |       |       |    |
| 4. Emotional support    | .09               | .22   | .31*  | -    |       |       |       |    |
| 5. Emotional challenge  | .27               | .35*  | .47** | .30* | -     |       |       |    |
| 6. Reality confirmation | .35* <sup>.</sup> | .17   | .32*  | .23  | .55** | -     |       |    |
| 7. Tangible assistance  | .39*              | .41*  | .25   | .23  | .31*  | .48** | -     |    |
| 8. Personal assistance  | .56**             | .37*  | .41*  | .28  | .36*  | .40*  | .61** | -  |

Note. \**p* < .05. \*\**p* <.01.

difficult to complete efficiently by early adolescent athletes. Thus, modification of the m-SSS was necessary before proceeding.

(iii) YCQ. Ten athletes from the pilot sample did not report experiencing any interpersonal stress within the past year of sport participation. Consequently, these individuals did not complete the YCQ. The analysis on YCQ is therefore, based on a sample size of 48 early adolescent boys and girls. The YCQ revealed that, on average, early adolescents reported using approximately three different coping strategies (M = 2.63; SD = 1.77) when attempting to manage interpersonal sport stress (refer to Table 3.2). Coping strategies were used for various functions. That is, a single coping strategy
not only varied on the functional strength of problem-focused, emotion-focused and avoidance, but also across individuals. This finding follows theoretical propositions about the nature of coping (Lazarus, 1991a). It was found that, on average, early adolescent athletes reported problem-focused coping values of 6.67 (SD = 3.95), emotion-focused coping values of 7.18 (SD = 3.85) and avoidance coping values of 6.38 (SD = 3.87) (refer to Table 3.2). Correlational analyses revealed that the three coping function scales are moderately related (refer to Table 3.6). Although these values are higher than that reported with older adolescent athletes (Kowalski & Crocker, 2001), these values are within the expected range.

Table 3.6

Spearman's Rho Coefficients among Coping Variables from Pilot Study (n = 48).

| Variable                        | 1.    | 2.    | 3. |
|---------------------------------|-------|-------|----|
| 1. Total problem-focused coping |       |       |    |
| 2. Total emotion-focused coping | .68** | -     |    |
| 3. Total avoidance coping       | .54** | .51** | -  |

Note. \*\*p <.01.

The sample of early adolescent athletes experienced low to moderate difficulty in completing the YCQ. Younger athletes (i.e., under 11 years of age) in particular had difficulty understanding what a coping strategy was and recalling what they had done to "cope" or "manage what was happening in the situation".

In summary, although some concern exists with the high correlational relations formed between scales, the YCQ was evaluated to be adequate for assessing functional coping of early adolescent athletes over the age of 10 years. Means and standard deviations fell within acceptable ranges. Strong relations between the functional coping scales were judged to reflect the theoretical nature of coping for an early adolescent population. Finally, the YCQ required little time and was found to be relatively simple for adolescents over the age of 10 years.

To conclude, it was reasoned that the instruments developed to assess perceived social support (s-APP) and coping (YCQ) was adequate for a sample of athletes ranging in age from 11 to 13 years of age. The m-SSS, however, was problematic and requires modification.

3.3.2. Instrument modification and preliminary study. Modifications were made to the m-SSS based on results from the pilot study. First, the eight content categories of social support were reduced to four broader content categories. Second, the number of possible persons who could be endorsed as providers of a specific content type of social support was extended from five to eight. These modifications were made specifically to reduce the conceptual confusion between different content types of social support and reduce the time needed and subsequent burden to complete the measure with an *early adolescent* population. This modified instrument was renamed the Youth-Social Support Survey (y-SSS) (see Appendix E).

Reducing the number of social support content categories clarified the conceptual differences between social support content thereby reducing the early adolescent

participation burden without diminishing the content validity of the instrument. Empirical evidence (within sport and developmental psychology) demonstrates that individuals naturally differentiate between the types of help received from others into four or five broad content groupings. For example, sport research using qualitative methods classify received social support content of elite athletes into the higher-order themes of information, emotional, esteem, and tangible support to describe the data (e.g., Rees, Ingledew, & Hardy, 1999; Udry, 1997; Udry, et al., 1997). A similar pattern of findings exists within the child development social support literature. Berndt and Hestenes (1996) observe that among both clinical and developmental researchers, the content classifications most commonly discussed include esteem support, information support, instrumental support, and companionship. Furthermore, recent work provides strong evidence against the eight-factor content model of received social support in a sport setting (Rees et al., 2000). Collectively, these research findings seem to suggest that a four factor content model is appropriate for assessing received social support with an early adolescent sport sample. The y-SSS includes the social support content dimensions of (i) information support (i.e., people who provide advice or guidance concerning possible solutions to a problem), (ii) emotional support (i.e., people who provide comfort and security), (iii) esteem support (i.e., people who bolster or enhance an athletes' sense of sport ability through acts such as giving positive feedback, complimenting ability, and publicly recognizing the athletes' efforts), and (iv) tangible support (i.e., people who share resources in order to help manage difficult situations, for example, by loaning or providing money, physically helping with tasks, driving to sport practices and games, and talk to others on the athletes' behalf).

The second modification to the m-SSS included increasing the number of individuals that could be identified as providers of social support from five to eight. Most of the athletes sampled in the pilot study reported between 4 and 5 individuals per social support content type. Limiting the number of individuals who provide specific types of social support to five may have created a ceiling effect and it was unclear if the reported network size was accurately reflected (Ghiselli, Campbell, & Zedeck, 1981). This problem may be further inflated by reducing the number of social support content scales to four broad dimensions. The combined danger was that all of the different persons who adolescent athletes consider to be important social support providers may not be identified due to the restriction in number of content types of social support assessed. Thus, a more accurate assessment of the size of adolescent athletes' social support network size required extending the space provided from five to eight possible sources.

The y-SSS was tested to assess the adequacy of the modified instrument. Participants included 39 early adolescent male (n = 13) and female (n = 26) soccer and field hockey athletes from a large urban center in British Columbia. Athletes ranged in age from 11 to 15 years and represented the target population of the study. Procedures for contacting and consequent testing of the athletes followed methods outlined in the first pilot study (see Section 3.3.1). Parental and athlete consent was obtained prior to testing (refer to Appendix B). All participants completed the s-APP, y-SSS, AQ, YCQ, GPI instruments; however, only the y-SSS was examined for the purposes of preliminary testing.

Similar to the first pilot study, adequacy of the y-SSS was judged on the achievement of the following conditions: (a) mean and standard deviation values that

reflected the 'expected' empirical and theoretical range, (b) correlations demonstrating the expected theoretical strength, and (c) perceived ease to completing the instrument. The means and standard deviations are listed in Table 3.7. The mean values of the number of identified social support providers on the y-SSS are similar to that of the m-SSS suggesting that, on average, early adolescent athletes identify between 4 to 5 different individuals providing specific types of social support. The difference between the two scales is the increase in size of the standard deviation of social support network size for individual social support content types. This result suggests that the number of individuals who are identified in the provision of social support varies across early adolescent athletes. The y-SSS measure is able to capture this variance more so than the previously used m-SSS. Similar to findings with the m-SSS, means of received social support were found to favour the upper end of the scale on all measured types of content. As discussed earlier (see Section 3.3.1), these values were considered to be within the acceptable range.

Correlations between social support network size and received social support scales are displayed in Tables 3.8 and 3.9, respectively. Theoretically, it is expected that similar scales will be correlated moderately with one another, while dissimilar scales demonstrate weak relations. The pattern of correlations for received social support followed theoretical expectations. The pattern of correlations for social support network size, however, was different to what was theoretically expected. This result may be due to the poor power caused by the sample size.

# Table 3.7

Descriptive Values of Social Support Variables of y-SSS from Preliminary Study (N = 39).

| Variable                     | М    | SD   |
|------------------------------|------|------|
| Overall support network size | 8.59 | 2.39 |
| Information support size     | 5.23 | 1.58 |
| Emotion support size         | 4.44 | 1.67 |
| Esteem support size          | 4.26 | 1.83 |
| Tangible support size        | 3.62 | 1.63 |
| Received information support | 4.12 | .73  |
| Received emotion support     | 4.15 | .78  |
| Received esteem support      | 4.08 | .77  |
| Received tangible support    | 4.13 | .77  |

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### Table 3.8

Spearman's Rho Coefficients among y-SSS Social Support Network Size Variables from the Preliminary Study (N = 39).

| Variable                    | 1.    | 2.    | 3.   | 4. |
|-----------------------------|-------|-------|------|----|
| 1. Information support size | -     |       |      |    |
| 2. Emotion support size     | .46** | -     |      |    |
| 3. Esteem support size      | 03    | .22   | -    |    |
| 4. Tangible support size    | .45** | .63** | .35* | -  |

Note. \**p*<.05. \*\**p* <.01.

Table 3.9

Spearman's Rho Coefficients among y-SSS Received Social Support Variables from the Preliminary Study (N = 39)

| Variable               | 1.    | 2.    | 3.    | 4. |
|------------------------|-------|-------|-------|----|
| 1. Information support | -     |       |       |    |
| 2. Emotion support     | .33*  | -     |       |    |
| 3. Esteem support      | .39*  | .52** | -     |    |
| 4. Tangible support    | .52** | .42** | .59** | -  |

Note. \**p*<.05. \*\**p* <.01.

Subjective evaluation of the y-SSS revealed that the measure was considerably less onerous than the m-SSS. Early adolescent athletes had little difficulty understanding the definitions of social support and the conceptual differences between social support content types. Few questions were asked by participants after instructions were presented, and athletes responded positively to informal questions (i.e., "Did you find the measure easy or difficult?"). This finding, together with the descriptive and correlation values led the conclusion that the y-SSS was adequate for the assessment of social support network size and received social support with early adolescent athletes.

### 3.4 Main Study Data Collection Procedures

Prior to data collection, ethical consent from the Advisory Committee on Ethics in Behavioural Science Research was obtained (see Appendix A). Coaches were consulted for an appropriate testing time(s) and location coinciding with a training session. Approximately one week before the designated testing day, athletes and their parents were given an information letter describing the study and a consent form for athletes participation (see Appendix D). Athletes also received verbal information describing the procedures. Completed consent forms were required to be returned to the primary researcher and/or a trained research assistant prior to testing. Athletes who participated in the study received a water bottle.

At the scheduled testing time, athletes were instructed to complete the questionnaire in four sections. The primary researcher (and/or trained research assistants) supervised the testing session and was available for providing instructions and answering procedural questions. Verbal instructional procedures for completing each section were given before participants completed the measure(s). Athletes completed the s-APP during section one, the y-SSS during section two, the AC and YCQ during section three, and the GPI during section four. Questionnaires were completed independently in a group setting. Participants completed each section following the procedural instructions regardless if

they had completed all questions in the prior section. Participants who had not finished a section were instructed to complete those questions at the conclusion of all four sections. Each questionnaire was assigned an identification number for confidentiality, thereby ensuring an individual adolescent athlete could not be linked to a specific questionnaire. Athletes were asked to check over answers to ensure that responses accurately reflected the experience and that no questions were left unanswered before returning the completed questionnaire to the primary researcher (and/or the trained research assistant).

#### 3.5 Data Analytic Techniques

A variety of univariate and multivariate statistical techniques were used to answer the questions posed by the current research including: content analysis, correlations, multivariate analysis of variance (MANOVA) and structural equation modeling. Data was screened prior to data analytic procedures to ensure that it was in the appropriate form (Kelloway, 1998; Stevens, 1996; Tabachnick & Fidell, 2001). Specifically, data was examined for (a) accuracy of data input, (b) amount and distribution of missing data, (c) normality of variable distributions, linearity and homoscedasticity of relations between variables, (d) univariate and multivariate outliers, and (f) perfect or near perfect relations (i.e., correlations) between variables. Procedures applied for data screening followed recommendations of Tabachnick and Fidell (2001).

*3.5.1 Content analysis of coping*. To parsimoniously describe athletes' coping, content analysis was applied to the coping strategies identified. Content analysis is an inductive method of interpreting recalled coping responses into coping strategy categories

and then counting the number of instances the coping categories are employed by the adolescents (Silverman, 2001). A four-step procedure was followed including: (1) Transcription of coping responses, (2) Establishment of coping strategy categories, (3) Operationally define coping strategy categories, (4) Rating of coping responses to coping strategy categories, and (5) Reliability of coping response rating. The procedures used have been recommended by other sport researchers using inductive analysis to assess coping (e.g., Côté, Salmela, Baria, & Russell, 1993; Gould, Jackson, & Finch, 1993; Scanlan, Ravizza, & Stein, 1989). Multiple raters were used to increase the rigor of coding data into coping strategy categories. Specifically, three graduate students (i.e., two Ph.D and a senior master level student, including the primary researcher) knowledgeable in coping literature completed the content analysis of the coping data.

*3.5.2 Correlation.* Evidence of construct validity for social support and coping function was provided in part through correlation analysis. Pilot research forewarned the possibility of skewed data from the social support scales. Certain characteristics with the data such as restriction in range (or skewness) and outlier scores have the potential to lead to spuriously low or high Pearson r correlation coefficients (Shavelson, 1988; Tabachnick & Fidell, 2001). An alternative approach is to use Spearman's Rho correlation coefficient to assess the nonlinear monotonical relation between the measured coping and social support variables. It was expected that correlation coefficients for scales of the same social support or coping function dimension would be higher than between scales of different social support dimension and coping function scales.

3.5.3 One-way MANOVA. One-way Multivariate Analysis of Variance (MANOVA) tests were utilized to compare between genders on social support and coping variables. Wilks' Lambda was used to determine the existence of a main effect for gender. Significant main effects were investigated using a Roy-Bargmann stepdown analysis. When correlations between dependent variables are in excess of .30, stepdown analysis allows a statistically pure examination of dependent variables with the Type I error rate controlled (Tabachnick & Fidell, 2001). In stepdown analysis, priorities are assigned to dependent variables (i.e., social support and coping variables) according to theoretical or practical considerations (Stevens, 1996; Tabachnick & Fidell, 2001). The highest priority dependent variable is tested within univariate analysis of variance (ANOVA) with appropriate adjustment of alpha. The remaining dependent variables are tested in a series of analysis of covariance (ANCOVA), each with successive covariates to see what, if anything, it adds to the combination of dependent variables already tested (Stevens, 1996; Tabachnick & Fidell, 2001).

3.5.4 Structured equation modeling. Structural equation modeling procedures were performed by applying EQS 5.7 (Bentler, 1995) to test the theoretical structures of social support and coping as well as the theoretical relation between both constructs. The structural modeling process centers around two steps including validating the measurement model and fitting the structural model (Diamantopoulos & Siguaw, 2000; Kelloway, 1998). Model estimation was conducted on the covariance matrix using maximum likelihood procedure, which is the standard method of estimating free parameters in a structural equation model (Chou & Bentler, 1995; Hoyle & Panter, 1995).

The maximum likelihood method makes estimates based on maximizing the probability that the observed covariances are drawn from a population assumed to be the same as the reflected in the coefficient estimates (Ullman, 2001). In accordance with Hoyle and Panter (1995), multiple indexes were used to evaluate model fit including: (i)  $\chi^2$  (chisquare), (ii) Satorra-Bentler's (1994) scaled  $\chi^2$ , (iii) the Tucker-Lewis index (TFI; Tucker & Lewis, 1973; type-2 index), (iv) the comparative fit index (CFI; Bentler, 1989, 1990; type-3 index), and (v) Root Mean Square Error of Approximation (RMSEA).

Maximum likelihood estimation procedure assumes that the measured variables are continuous, have a multivariate normal distribution, and come from a large sample (West, Finch, & Curran, 1995). Violations to scaling and normality assumptions are problematic because with large samples, significant tests are reduced in the power, with results leading to (a)  $\chi^2$  goodness-of-fit tests rejecting true models, and (b) too many significant tests of parameter estimates (West et al., 1995). Data with extreme kurtosis (i.e., the extent to which the height of the curve differs from the normal curve) poses the greatest threat to significant tests of model estimation (West et al., 1995). Mardia's coefficient, a test of multivariate skewness and kurtosis, is recommended prior to model estimation testing. A significant coefficient indicates problems of multivariate normality in the data. Taking into account the sample size and extent of non-normality, non-normal data can be accommodated in structure equation modeling with the use of robust testing statistics (West et al., 1995).

To state that a model 'fits' refers to the extent to which the hypothesized model is consistent with the data (Diamantopoulos & Siguaw, 2000). Model fit can be evaluated in a number of ways including: (a) the absolute fit of the model to the data, (b) the fit of a

model to the data relative to other models, and (c) the degree of parsimonious fit of the model relative to the other models (Kelloway, 1998). Thus, in accordance to recommendations of Hoyle and Panter (1995), multiple fit indices were used. The  $\chi^2$  (chisquare) is the most common absolute fit index but it complicated by sample size and nonnormal distributions (Hoyle & Panter, 1995). It is recommended that Satorra-Bentler's (1994) scaled  $\chi^2$  be reported along side  $\chi^2$  when variables depart from normality (Hoyle & Panter, 1995; West et al., 1995). The Tucker-Lewis index (TFI; Tucker & Lewis, 1973; type-2 index) and the comparative fit index (CFI; Bentler, 1989, 1990; type-3 index) are incremental fit indexes that assesses the proportional improvement in fit in comparison to a baseline or "null" model (i.e., specifies no covariance among variables) (Hoyle & Panter, 1995). TFI and CFI values above 0.90 are recommended and interpreted as a good fit (Hoyle & Panter, 1995). The RMSEA assesses the fit function of the target model adjusted by the degrees of freedom (Browne & Cudeck, 1993). Browne and Cudeck (1993) suggests that a RMSEA value below 0.08 indicates a good fit to the data, and values less than 0.05 indicate a very good fit to the data.

In addition to the use of multiple fit indices, nested model comparisons were used to assess the theoretical measurement structure and structural relations of social support and coping function. A nested relation exists between two models if the model with the more free parameters to estimate can match the model with fewer estimated free parameters by constraining some or all of the parameters (Kelloway, 1998). The difference between the two models (with respect to absolute fit to the data) is evaluated through a  $\chi^2$  difference test. Confirmatory factor analysis, latent variable path analysis, and sequential tests of invariance were conducted using the structural equation modeling procedure. Confirmatory factor analysis was used to test the theoretical measurement structure of social support and coping function. The appropriateness of confirmatory factor analysis relies on the ability to a priori specify the relations among factors (Stevens, 1996; Ullman, 2001). Thus, the assessment of the measurement model focuses on the relations between the latent variables and the indicators (Diamantopoulas & Siguaw, 2000). The confirmatory measurement model tests whether (a) scale items can be explained by the proposed number of factors (i.e., three social support dimensions and coping function), (b) each scale item has a non-zero loading on the factor it is intended to measure and a zero loading on all other factors, (c) covariances among factor scores are free parameters, and (d) measurement error is uncorrelated among scale items.

Latent variable path analysis considered both the measurement and the structural components relating social support and coping constructs (Kelloway, 1998). Similar to confirmatory factor analysis, the measurement model examined the relation between the social support/coping dimension and the scales that purported to measure it. Based on recommendations of Anderson and Gerbling (1988), fit of the measurement model was evaluated and confirmed before proceeding with evaluation of the structural component. The structural model considered the hypothesized relations between the constructs (Ullman, 2001). That is, the aim of this part of the analysis was to determine whether the direct or mediated theoretical relations are supported by the data. Four issues are relevant to the evaluation of structural model fit, including (i) the signs of the parameters representing the paths between the constructs are in the hypothesized direction (i.e.,

positive or negative), (ii) whether parameters of the hypothesized relations are significant, (iii) the magnitude of the estimated parameters of the hypothesized relation, and (iv) the amount of variance of coping accounted for by the social support dimensions (Diamontopoulos & Siguaw, 2000).

Sequential tests of factorial gender invariance were used to determine gender differences in the measurement structure of social support and coping function. A chisquare difference test was used to evaluate the change in model fit by adding equality constraints when fitting a model simultaneously for male and females (Bentler, 1995). First, simultaneous group analysis is conducted with no constraints. The goodness-of-fit indexes for more constrained models are compared to the unconstrained model. A nonsignificant chi-square test would indicate invariance across the genders on the constrained parameters. The order of recommended constraints follows: (a) equivalence of factor loadings; (b) equivalence of factor loadings and factor variance; (c) equivalence of factor loadings and factor covariance; (d) equivalence of factor loadings, factor variance, and factor covariance; (e) equivalence of factor loadings, factor variance, factor covariance, and error variance (Bentler, 1995; Marsh, Hey, Johnson, and Perry, 1997). Marsh et al. (1997) state that a non-significant test of invariant factor loadings is the minimum level required to demonstrate a non-difference in simultaneous group analysis.

#### Chapter 4

#### Results

### 4.1 Data Screening

Data was screened prior to multivariate data analytic procedures following the recommendations of Tabachnick and Fidell (2001). Frequency analysis revealed that relatively few data points were missing. To prevent reduction in the power of multivariate analyses through loss in sample size, missing data points were replaced with system mean values (the mean values generated from participants with no missing data) (Tabachnick & Fidell, 2001).

Multivariate normality analysis revealed several variables had distributions that deviated from normalcy (refer to Table 4.1). Received information support, received emotion support, received esteem support, and perceived social support from friends were moderately skewed in a negative direction. Received tangible support and perceived social support from family had substantial negatively skewed distributions. Coping and perceived coach social support variables had normal distributions. Tabachnick and Fidell (2001) recommend that non-normal variables should be transformed when statistical inference is planned unless there is a compelling reason not to do so. One compelling reason is that transforming non-normal variables causes the scaling of the variable to be disrupted, making interpretation of the variable difficult. Further, data analytic indices exist that are robust to non-normal variables (Tabachnick & Fidell, 200; West et al., 1995). Thus, it was decided for the purposes of the current study to not transform the non-normal social support variables.

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Scale Score Range, Scale Reliability, Descriptive Means and Standard Deviation, and

Normality Statistics of Social Support and Coping Variables

| Variable                       | Scale<br>Range | Male <sup>b</sup> | Female <sup>c</sup> | Total<br>Sample <sup>d</sup> | Skewness          | Kurtosis          |
|--------------------------------|----------------|-------------------|---------------------|------------------------------|-------------------|-------------------|
| Total social network size      | 0-32           | 7.43<br>(3.02)    | 9.26<br>(3.29)      | 8.34<br>(3.28)               | 0.870*<br>(.102)  | 0.831<br>(.203)   |
| Information<br>network size    | 0-8            | 4.92<br>(1.86)    | 5.42<br>(1.73)      | 5.17<br>(1.81)               | 0.064<br>(.102)   | -0.862*<br>(.203) |
| Emotion<br>Network size        | 0-8            | 4.14<br>(1.81)    | 4.91<br>(1.85)      | 4.52<br>(1.87)               | 0.345<br>(.102)   | -0.703*<br>(.203) |
| Esteem<br>network size         | 0-8            | 4.22<br>(1.82)    | 5.06<br>(1.80)      | 4.63<br>(1.86)               | 0.211<br>(.102)   | -0.562<br>(.203)  |
| Tangible<br>network size       | 0-8            | 3.54<br>(1.80)    | 4.00<br>(1.79)      | 3.77<br>(1.81)               | 1.809*<br>(.102)  | -0.131<br>(.203)  |
| Scale Reliability <sup>a</sup> | .86            |                   |                     |                              |                   |                   |
| Received information support   | 1 – 5          | 4.03<br>(0.82)    | 4.10<br>(0.74)      | 4.06<br>(0.78)               | -0.817*<br>(.102) | 1.259*<br>(.203)  |
| Received emotion support       | 1 – 5          | 3.97<br>(0.91)    | 4.18<br>(0.83)      | 4.08<br>(0.89)               | -0.967*<br>(.102) | 1.050*<br>(.203)  |
| Received esteem support        | 1 – 5          | 4.08<br>(0.86)    | 4.23<br>(0.78)      | 4.15<br>(0.83)               | -0.909*<br>(.102) | 0.851*<br>(.203)  |
| Received tangible support      | 1 – 5          | 4.18<br>(0.93)    | 4.29<br>(0.76)      | 4.24<br>(0.85)               | -1.399<br>(.102)  | 2.631*<br>(.203)  |
| Scale Reliability <sup>a</sup> | .76            |                   |                     |                              |                   |                   |

## Table 4.1 (continued).

|                                | Scale   | L                 |                     | Total               |                   |                  |
|--------------------------------|---------|-------------------|---------------------|---------------------|-------------------|------------------|
| Variable                       | Range   | Male <sup>D</sup> | Female <sup>c</sup> | Sample <sup>a</sup> | Skewness          | Kurtosis         |
| Perceived family<br>Support    | 11 – 55 | 47.50<br>(5.84)   | 47.98<br>(5.78)     | 47.74<br>(5.81)     | -1.264*<br>(.102) | 2.158*<br>(.203) |
| Perceived friend<br>Support    | 14 - 70 | 57.74<br>(6.27)   | 59.87<br>(6.14)     | 58.80<br>(6.29)     | -0.746*<br>(.102) | 0.902*<br>(.203) |
| Perceived coach<br>Support     | 4 – 20  | 15.06<br>(2.87)   | 15.22<br>(3.05)     | 15.14<br>(2.96)     | -0.345<br>(.102)  | -0.385<br>(.203) |
| Scale Reliability <sup>a</sup> | .66     |                   |                     |                     |                   |                  |
| Number of coping strategies    |         | 2.31<br>(1.42)    | 2.53<br>(1.38)      | 2.42<br>(1.40)      | 1.802<br>(.102)   | 5.440<br>(.203)  |
| Problem-focused coping         | 0 – 16  | 6.90<br>(4.39)    | 6.57<br>(4.24)      | 6.74<br>(4.32)      | 0.355*<br>(.102)  | -0.660<br>(.203) |
| Emotion-focused coping         | 0 - 16  | 7.05<br>(4.30)    | 7.30<br>(4.11)      | 7.17<br>(4.21)      | 0.186<br>(.102)   | -0.627<br>(.203) |
| Avoidance coping               | 0-16    | 6.96<br>(4.82)    | 5.56<br>(4.10)      | 6.26<br>(4.53)      | 0.386*<br>(.102)  | -0.690<br>(.203) |

Scale Reliability<sup>a</sup> .79

Note: <sup>a</sup>Scale reliabilities defined as squared multiple correlations were obtained from EQS. <sup>b</sup>n = 290. <sup>c</sup>n = 285. <sup>d</sup>N = 575. \*p < .001.

Univariate and multivariate outlier scores are problematic for multivariate statistical analytic procedures (Stevens, 1996; Tabachnick & Fidell, 2001). Social support and coping variables were examined for any cases with very large standardized scores (i.e., z scores greater than 4.0) (Stevens, 1996). Analyses revealed two univariate outliers, with one outlier found for perceived family social support and other perceived friend social support. Mahalanobis' distance test statistics revealed multivariate outliers existing on the combination of social support and coping variables. One method recommended for reducing the influence of outliers is to reduce the outlier score so that its z score value is no longer an outlier (Tabachnick & Fidell, 2001). The score value for perceived family social support was manually changed to 30.25 for participant number 455, while the perceived friend social support score was manually changed to 40.0 for participant number 936. Mahalanobis' distance test re-ran on the coping and social support (including the changed perceived social support variables) variables revealed multivariate outlier scores within the acceptable range.

Multicollinearity is a problem of moderate to high intercorrelations among predictors (Stevens, 1996). The Variance Inflation Factor (VIF) statistic did not indicate a problem of multicollinearity. However, collinearity diagnostics revealed that multicollinearity problems may exist. Tabachnick and Fidell (2001) state that the criteria for identifying multicollinearity include a Conditioning index greater that 30 and at least two variance proportions greater than 0.50 for a given root number. The Conditioning index revealed two eigenvalue scores greater than 30.0 and nine variance proportions were found to be greater than .50.

### 4.2 Psychometrics of Coping and Social Support Instruments

4.2.1 *Reliability*. Internal consistency analyses of the s-APP scales revealed two scale items to be poor indicators of the perceived friend and perceived coach support. Specifically, items 4 ('Some kids have friends who make fun of them, but other kids do not. Do your friends make fun of you?) and 31 ('Some kids have a hard time talking to their coaches, but other kids do not. Do you have a hard time talking to your coaches?')

were problematic in terms of interpreting the questions meaning. With the two items removed, scale reliabilities were  $\alpha = .82$  (perceived family),  $\alpha = .83$  (perceived friend support), and  $\alpha = .70$  (perceived coach support).

Scale reliabilities of the y-SSS and YCQ were computed using maximum likelihood method in EQS (EQS 5.7b; Bentler, 1995). These reliability coefficients are computed as a squared multiple correlation coefficient. Overall measure reliability is computed using the following equation (Ullman, 2001):

(Standardized loading)<sup>2</sup>

 $\overline{(\text{Standardized loading})^2}$  + (Square standardized errors)

The reliability coefficients produced are essentially equivalent to those derived through Cronbach's alpha (Ullman, 2001). Table 4.1 reveals the reliability coefficients of the social support and coping function instruments. Measure reliability scores for the s-APP, y-SSS and YCQ were acceptable.

4.2.2. Validity. Construct validity of social support and coping was evaluated through scale correlations as well as by confirmatory factor analysis (Ghiselli et al., 1981; Tabachnick & Fidell, 2001).

**Correlation**. One method to demonstrate construct validity is to provide evidence of convergent validity (Ghiselli et al., 1981). Convergent validity refers to high intercorrelations among measures of a construct that are theoretically similar. For example, intercorrelations between scales of perceived social support should be stronger compared to intercorrelations between the scales of perceived social support and received social support. Thus, it is expected that correlations among scales within social support

and coping dimensions will be stronger compared to intercorrelations of scales across dimensions.

Spearman's Rho correlation was used to determine the relations among scale scores within coping and social support dimensions. Correlational results demonstrated stronger relations among social support and coping dimensions than between the scales of different dimensions, supporting convergent validity (see Tables 4.2 through 4.8). Correlation coefficients for social support network size scales ranged from  $r_s = .45$ (female emotion support network size and tangible support network size) to  $r_s = .70$ (male information support network size and emotion support network size), correlation coefficients for received social support scales ranged from  $r_s = .29$  (female received information support and received tangible support) to  $r_s = .55$  (female received emotion support and received esteem support), and correlation coefficients for perceived social support ranged from  $r_s = .27$  (female perceived family support and perceived coach support) to  $r_s = .51$  (female perceived friend support and perceived coach support) to  $r_s = .44$  (male problem-focused coping and mean weighted avoidance coping) to  $r_s = .65$  (female emotion-focused coping and mean weighted avoidance coping).

Gender differences were found in the pattern of significant correlations. Three quarters (i.e., 12 of 16) intercorrelations between received social support and social support network size were found to be statistically significant with the female sample, whereas only six relations were statistically significant with the male sample (refer to Table 4.3). For boys, coping function indicators were statistically related to received

Spearman's Rho Correlation Coefficient among Social Support Variables (N = 575)

| Variables                            |           | 5         |          | 4.        | 5.      | é.       | 7.       | ∞.        | .6      | 10.      | 11. |
|--------------------------------------|-----------|-----------|----------|-----------|---------|----------|----------|-----------|---------|----------|-----|
| 1. Perceived Family support          |           |           |          |           |         |          |          |           |         |          |     |
| 2. Perceived Friend Support          | .37**     | ١         |          |           |         |          |          |           |         |          |     |
| 3. Perceived Coach Support           | .33**     | .49**     | ı        |           |         |          |          |           |         |          |     |
| 4. Information Network size          | .13**     | .17**     | .14**    | ı         |         |          |          |           |         |          |     |
| 5. Emotion Network size              | .17**     | .18**     | .15**    | **99.     | I       |          |          |           |         |          |     |
| 6. Esteem Network size               | .16**     | .15**     | .14**    | .57**     | .62**   | ı        |          |           |         |          |     |
| 7. Tangible Network size             | .08       | .15**     | .11**    | .51**     | .52**   | .55**    | 1        |           |         |          |     |
| 8. Received Information Support      | .37**     | .34**     | .33**    | .20**     | .22**   | .19**    | .19**    | ı         |         |          |     |
| 9. Received Emotion Support          | .34**     | .25**     | .26**    | .18**     | .30**   | .22**    | .19**    | .51**     | ı       |          |     |
| 10. Received Esteem Support          | .34**     | .33**     | .35**    | .10*      | .18**   | .18**    | .12**    | .48**     | .51**   |          |     |
| 11. Received Tangible Support        | .25**     | .20**     | .14**    | .05       | .08     | .03      | 05       | .31**     | .32**   | .36**    | ı   |
| Note: Bold values are intercorrelati | ions betv | veen soci | al suppc | urt varia | bles of | differen | it dimen | isions. 1 | Von bol | d values | are |

intercorrelations between social support variables of the same dimension. \*p<.05. \*\*p<.01.

| Females       |
|---------------|
| Males and     |
| /ariables for |
| ial Support V |
| among Soc     |
| Coefficient   |
| Correlation   |
| arman's Rho   |
| Spe           |

| Variables        | 1. <sup>a</sup>             | 5.                 | 3.            | 4.           | 5.             | 6.          | 7.            | 8.                                   | 9.                  | 10.         | 11.             |
|------------------|-----------------------------|--------------------|---------------|--------------|----------------|-------------|---------------|--------------------------------------|---------------------|-------------|-----------------|
| 1. <sup>b</sup>  | ı                           | .37**              | .38**         | .15**        | .18**          | .14*        | .03           | .38**                                | .41**               | .36**       | .27**           |
| 5.               | .37**                       | ı                  | .46**         | .12*         | .10            | .14*        | .11           | .26**                                | .16**               | .35**       | .20**           |
| Э.               | .27**                       | .51**              | ı             | .10          | .15*           | .16**       | .12*          | .37**                                | .25**               | .35**       | .17**           |
| 4.               | 60.                         | .17**              | .18**         | ı            | **02.          | .62**       | .53**         | .12*                                 | .11                 | .03         | .05             |
| 5.               | .14*                        | .18**              | .16**         | .58**        | ı              | **99.       | .55**         | .19**                                | .20**               | .05         | .07             |
| 6.               | .18**                       | .08                | .12*          | .48**        | .52**          | 5 I.        | .57**         | 60.                                  | .15**               | 60.         | 05              |
| ٢                | .12*                        | .15*               | .11           | .46**        | .45**          | .49**       | ı             | .15**                                | .16**               | .07         | 05              |
| <u>∞</u>         | .39**                       | .38**              | .29**         | .28**        | .26**          | .30**       | .22*          | ı                                    | .49**               | .46**       | .34**           |
| 9.               | .32**                       | .31**              | .27**         | .22**        | .38**          | .25**       | .19**         | .53**                                | ı                   | .46**       | .30**           |
| 10.              | .38**                       | .38**              | .35**         | .16**        | .29**          | .24**       | .15*          | .50**                                | .55**               | t           | .39**           |
| 11.              | .25**                       | .24**              | .20**         | .03          | .08            | .10         | 06            | .29**                                | .35**               | .34**       | ı               |
| Note. 1. Perceiv | ed family sur               | oport; 2. Pe       | rceived frier | nd support;  | 3. Perceive    | d coach suj | oport; 4. Inf | ormation n                           | etwork size         | ; 5. Emotio | n network size; |
| 6. Esteem netwo  | ork size; 7. T <sup>ɛ</sup> | angible netv       | vork size; 8. | . Received i | nformation     | support; 9  | . Received    | emotion sup                          | pport; 10. R        | eceived est | eem support;    |
| 11. Received tai | ngible suppor               | t. $^{a}n = 290$ , | males abov    | e diagonal.  | $b_n = 285, 1$ | females bel | ow diagona    | l. * <i>p&lt;</i> .05.* <sup>3</sup> | * <i>p&lt;</i> .01. |             |                 |

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Spearman's Rho Correlation Coefficient between Coping Variables (N = 575)

| 1.    | 2.                        | 3.                                      |
|-------|---------------------------|---|
| -     |                           |   |
| .58** | -                         |   |
| .49** | .56**                     | -                                       |
|       | 1.<br>-<br>.58**<br>.49** | 1. 2.   - .58**   .58** -   .49** .56** |

Note. \*\**p*<001.

## Table 4.5

Spearman's Rho Correlation Coefficient between Coping Variables for Males (n = 290)

| Variables                 | 1.    | 2.    | 3. |
|---------------------------|-------|-------|----|
| 1. Problem-focused coping | -     |       |    |
| 2. Emotion-focused coping | .55** | -     |    |
| 3. Avoidance coping       | .53** | .65** | -  |

Note. \*\**p*<.001.

Spearman's Rho Correlation Coefficient between Coping Variables for Females (n = 285)

| Variables                 | 1.         | 2.    | 3. |  |
|---------------------------|------------|-------|----|--|
| 1. Problem-focused coping | <b>-</b> ' |       |    |  |
| 2. Emotion-focused coping | .60**      | -     |    |  |
| 3. Avoidance coping       | .44**      | .47** | -  |  |

Note. \*\**p*<.001.

social support scales (except problem-focused coping and received tangible support) (refer to Table 4.7). Coping function indicators did not significantly relate to the scales of social support network size, nor perceived social support with the male sample. Girls, in comparison, demonstrated significant relations between select indicators of coping function, received social support, social support network size, and perceived social support (refer to Table 4.7). Thus, gender appeared to influence the relation between the social support and coping function scales.

**Confirmatory factor analysis of social support**. Since no prior research exists confirming the three-factor social support model with an adolescent athletic sample, a confirmatory factor analysis was conducted for a one-factor and three-factor social support measurement model (see Figure 4.1 and Table 4.8). As expected, the three-factor model produced a significantly better fit to the data for both early adolescent boys and girls. Mardia's coefficient testing for multivariate kurtosis was found to be significant for both boys and girls (normalized estimate of Mardia's coefficient was 8.00 for males and

|                              | Problem-focused Emotion-focuse |  | n-focused | Avoidance                          |                                 |                                   |
|------------------------------|--------------------------------|--|-----------|------------------------------------|---------------------------------|-----------------------------------|
| Social Support Variables     | <u> </u>                       | <u>Coping</u> <u>Coping</u><br>Male <sup>a</sup> Female <sup>b</sup> Male <sup>a</sup> Female <sup>b</sup> |           | <u>oing</u><br>Female <sup>b</sup> | <u>Cop</u><br>Male <sup>a</sup> | <u>ing</u><br>Female <sup>b</sup> |
| Perceived family support     | .08                            | .05  | .06       | .12*                               | .03                             | 03                                |
| Perceived friend support     | .05                            | .14*   | .06       | .17**                              | .04                             | .11                               |
| Perceived coach support      | .12*                           | .23**  | .08       | .22**                              | .04                             | .18**                             |
| Information network size     | .09                            | .17**  | .02       | .24**                              | .05                             | .11                               |
| Emotion network size         | .09                            | .10  | .02       | .18**                              | .05                             | .06                               |
| Esteem network size          | .10                            | .18**  | .01       | .16**                              | 03                              | .03                               |
| Tangible network size        | .01                            | .12**  | .01       | .14*                               | .02                             | .14*                              |
| Received information support | .18**                          | .15*   | .15**     | .13*                               | .13*                            | 02                                |
| Received emotion support     | .18**                          | .13*   | .21**     | .13*                               | .18*                            | .01                               |
| Received esteem support      | .18**                          | .11  | .22**     | .10                                | .17*                            | 07                                |
| Received tangible            | .09                            | .02  | .13*      | .01                                | .16*                            | 04                                |

Spearman's Rho Correlation Coefficients between Coping and Social Support Variables

Note.  ${}^{a}n = 290$ , male sample.  ${}^{b}n = 285$ , female sample.



Figure 4.1 Conceptual three-factor and one-factor social support models, respectively.

Goodness of Fit Statistics for Measurement Analysis and Gender Invariance of Social Support

|   |          | Robust      |        |                 |          |          |         | Robust |       |
|---|----------|-------------|--------|-----------------|----------|----------|---------|--------|-------|
| Scale   | $\chi^2$ | $\chi^2$    | df     | $\Delta \chi^2$ | р        | TLI      | CFI     | CFI    | RMSEA |
| Preliminary measurement models of social support <sup>a</sup> |          |             |        |                 |          |          |         |        |       |
| Three   |          | , chining   | mease  |                 | 04015 0  | i boolui | Support | ·      |       |
| factor  | 101.24   | 90.24       | 41     |                 |          | .961     | .971    | .970   | .05   |
| Single  |          |             |        |                 |          |          |         |        |       |
| factor  | 872.54   | 712.01      | 44     | 771.30          | .001     | .497     | .598    | .590   | .18   |
|   |          | Test of ge  | nder i | wariance        | of three | e factor | model   |        |       |
| M1  |          | i est oi ge |        | Ivariance       | or unco  |          | mouci   |        |       |
| $\operatorname{Boys}^{b}$                                     | 86.38    |             | 41     | -               |          | .947     | .961    | .956   | .06   |
| Girls <sup>c</sup>  | 76.73    |             | 41     | -               |          | .949     | .962    | .963   | .06   |
| M2  | 163.11   |             | 82     | -               |          | .948     | .961    |        |       |
| M3  | 175.78   |             | 90     | 12.67           | n.s.     | .950     | .959    |        |       |
| M4  | 179.64   |             | 93     | 16.53           | n.s.     | .951     | .958    |        |       |
| M5  | 180.65   |             | 93     | 17.54           | n.s.     | .950     | .958    |        |       |
| M6  | 277.97   |             | 96     | 114.86          | .001     | .900     | .913    |        |       |
| M7  | 239.99   | i           | 107    | 76.88           | .001     | .934     | .936    |        |       |

Note:  $\Delta \chi^2$  = change in  $\chi^2$ ; TLI=Tucker-Lewis index; CFI=comparative fit index; RMSEA=root mean square error of approximation; M1=Original model analyzed for genders separately; M2=simultaneous analysis with no restrictions; M3=M2 with factor loading (FL) invariance; M4=M2 with FL and factor variance (FV) invariance; M5=M2 with FL and factor covariance (FC) invariance; M6=M2 with FL, FV, FC invariance; M7=M2 with total invariance (FL, FV, FC, and error variance invariant). <sup>a</sup>N = 575. <sup>b</sup>n = 290. <sup>c</sup>n = 285. 12.87 for females). Robust chi-square and CFI are presented in Table 4.8 to correct for the possible problems with model estimation. Standardized factor loadings for scales and factor covariance of the three-factor social support model for boys and girls are presented in Figure 4.2. All factor loadings were significant for both genders. Scale error variances were independent as expected.

Sequential tests of factorial gender invariance were used to determine if gender influences the theorized structure of social support. Results for simultaneous group analysis demonstrated that the chi-square difference test was not significant when factor loadings were held invariant and when factor loadings and factor variance/covariances were constrained to be equivalent (see Table 4.8). There was no evidence of invariance when factor loadings, factor variances and factor covariances were constrained to be equal; nor within the fully constrained model (i.e., factor loadings, factor variance, factor covariance, and error variance).

**Confirmatory factor analysis of social support and coping function model.** Confirmatory factor analysis of the coping function latent construct could not be independently evaluated due to the factor structure of the construct. Coping function was evaluated by three factors. Diamantopoulos and Siguaw (2000) state that models which include a single latent construct as measured by three items produces a just-identified model that is not testable. Thus, the structure of the coping construct was evaluated in conjunction with the social support constructs. Confirmatory factor analysis was conducted for a two-factor social support and coping function model as well as the fourfactor social support and coping function measurement model (see Figure 4.3 and Table 4.9). As expected, the four-factor social support and coping function produced a



Figure 4.2 Factor loadings and correlation coefficients from confirmatory factor analysis of the three-factor social support model for male (n = 290) and female (n = 285) samples, respectively. All relations are statistically significant at p < .01.



Figure 4.3 Conceptual four-factor and two-factor models of social support and coping, respectively.

Goodness of Fit Statistics for Measurement Analysis and Gender Invariance of Social Support and Coping

|  |  | Robust         |     |                 |      |      |      | Robust |       |
|--|--|----------------|-----|-----------------|------|------|------|--------|-------|
| Scale  | χ <sup>2</sup>   | X <sup>2</sup> | df  | $\Delta \chi^2$ | р    | TLI  | CFI  | CFI    | RMSEA |
| D  | Preliminary measurement models of social support and coping <sup>a</sup> |                |     |                 |      |      |      |        |       |
| Four<br>factor<br>Two                                      | 150.33   | 137.67         | 71  |                 |      | .961 | .969 | .969   | .04   |
| factor   | 928.27   | 801.00         | 76  | 767.94          | .001 | .605 | .670 | .661   | .14   |
| Test of gender invariance of four factor measurement model |  |                |     |                 |      |      |      |        |       |
| M1<br>Boys <sup>b</sup>                                    | 110.82   | ,              | 71  | -               |      | .964 | .972 | .972   | .04   |
| Girls <sup>c</sup>   | 109.61   |                | 71  | -               |      | .958 | .967 | .969   | .04   |
| M2   | 220.43   |                | 142 | -               |      | .961 | .970 |        |       |
| M3   | 246.40   |                | 152 | 25.97           | .01  | .956 | .964 |        |       |
| M4   | 253.84   |                | 156 | 33.41           | .01  | .956 | .962 |        |       |
| M5   | 268.25   |                | 158 | 47.82           | .001 | .951 | .958 |        |       |
| M6   | 283.40   |                | 162 | 62.97           | .001 | .948 | .953 |        |       |
| M7   | 355.63   |                | 176 | 128.71          | .001 | .945 | .947 |        |       |

Note:  $\Delta \chi^2$  = change in  $\chi^2$ ; TLI=Tucker-Lewis index; CFI=comparative fit index; RMSEA=root mean square error of approximation; M1=Original model analyzed for genders separately; M2=simultaneous analysis with no restrictions; M3=M2 with factor loading (FL) invariance; M4=M2 with FL and factor variance (FV) invariance; M5=M2 with FL and factor covariance (FC) invariance; M6=M2 with FL, FV, FC invariance; M7=M2 with total invariance (FL, FV, FC, and error variance invariant). <sup>a</sup>N = 575. <sup>b</sup>n = 290. <sup>c</sup>n = 285. satisfactory fit to the data for both boys and girls. Mardia's coefficient for multivariate kurtosis was found to be significant for both boys and girls (normalized estimate of Mardia's coefficient was 10.88 for males and 11.97 for females). Thus, robust chi square and CFI are presented in Table 4.9 to correct for the possible problems with model estimation. Figure 4.4 displays the standardized factor loadings for all measured scales as well as the factor covariance of the full four-factor social support and coping function model. All factor loadings were significant for both genders. Examination of the distribution of 105 standardized residuals further provided evidence of the model adequacy for both boys and girls. No standardized residuals were found to be larger than |0.2|, providing minimal evidence of significant over- or underestimation of fitted correlations (99.05% z < |0.1|, 0% z > |0.2| boys; 92.38% z < |0.1|, 0% z > |0.2| girls) (Crocker, Eklund, & Graham, 2002; Diamantopoulos & Siguaw, 2000).

Sequential tests of factorial gender invariance were used to determine if gender influences the theorized structure of social support and coping function. Results for simultaneous group analysis demonstrated that the chi-square difference test was significant at all levels of testing including invariant factor loadings. This finding suggests that the theoretical structure of social support and coping function is different for boys and girls. Lagrange multiplier test was conducted to examine which parameters could be altered posthoc in order to improve fit indexes. Specifically, Lagrange multiplier tests calculate the decrease in  $\chi^2$  (i.e., modification index) that would result from estimating a non-estimated parameter (Kelloway, 1998). Kelloway (1998) recommends considering parameters with a modification index greater than 5.0 in contemplation of changes to the theoretical to changes to make to the theoretical model. Lagrange



Figure 4.4 Factor loadings and correlation coefficients from confirmatory factor analysis of the four-factor social support and coping model for male (n = 290) and female (n = 285), respectively. Solid lines represent significant relations at p < .01. Dashed lines represent non-significant relations.

multiplier test for releasing constraints revealed that releasing invariant mean weighted avoidance coping factor loading would produce the largest change in chi-square difference resulting in a non-significant test. In other words, statistically, avoidance coping is different for boys and girls.

This result, however, may not be an accurate representation of the nature of early adolescent boys and girls coping, but rather a statistical artefact. Upon closer inspection, a small difference between girls and boys factor loadings for avoidance coping exists (i.e., .20). Both the multicollinear nature of the data as well as the 'power' of analyses inherent to large samples, have likely contributed to the detection of a significant statistical difference. That is, the small different although statistically significant is unlikely to be of *practical* significance. Thus, the measurement structure of the fourfactor social support and coping function model was considered to be the same for both boys and girls in subsequent analysis.

In summary, statistical evidence of reliability and construct validity was offered for the y-SSS and YCQ. With two items removed, Cronbach's alpha coefficient achieved acceptable strength for perceived family support, perceived friend support, and perceived coach support. Squared multiple correlation coefficients computed using maximum likelihood estimation procedures demonstrated that the social support network size, received social support, and coping function scales achieved acceptable reliability values. The pattern of correlations between social support scales of the same dimension and between the scales of different social support dimensions and coping function provided evidence of convergent validity. Confirmatory factor analysis demonstrating superior fit

statistics of the theorized structural model of both social support and the full social support coping function models added further support for construct validity.

### 4.3 Descriptive Analyses of Cognitive Appraisal, Coping, and Social Support

4.3.1 Stress. Transactional coping theorists (i.e., Aldwin, 1994; Lazarus, 1991a) argue that coping is context specific. Thus, in keeping with the transactional approach, coping was examined within a specific context. Participants were asked to recall and describe the most stressful event involving another person in sport. Tables 4.1 and 4.10 list the frequencies, descriptive means, and standard deviations of stressful event descriptor variables. The primary sources of interpersonal stress for the participants were coaches, teammates, and others such as officials, team managers, siblings and non-sport friends. Frequency analyses revealed that two-thirds of the sample (n = 382) recalled an interpersonal stressful event occurring between three to twelve months in the past, while only approximately 15% (n = 95) stressful events occurred within the past month. The stressful events reported were primarily short-term in nature with approximately 50% (n = 294) sample reporting his/her most interpersonal stressful event lasting less than a week. The remaining participants reported moderate-term (25%, n = 139) and long-term (25%, n=140) interpersonal stressful events lasting up to one month, and between one month up to twelve months respectively. On average, athletes reported a moderate intensity of stress (M = 52.56, SD = 23.95). Univariate analysis of variance (i.e., ANOVA) did not demonstrate gender difference in the reported intensity of stress, F(1,573) = 1.88, *p* < .171.
|   |           | Percentage |
|---|-----------|------------|
| Variable  | Frequency | of sample  |
| Duration of Stressful Intera                      |           |            |
| Less than one week                                | 302       | 51.7       |
| One week to one month                             | 139       | 23.8       |
| One month to three months                         | 73        | 12.5       |
| More than three months                            | 70        | 12.0       |
| Occurrence of Stress Intera                       | action    |            |
| In the past week                                  | 35        | 5.6        |
| More than one week but less than one month        | 64        | 10.2       |
| More than one month but less than three months    | 97        | 15.4       |
| More than three month but less that twelve months | 387       | 61.6       |

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Frequencies of Interpersonal Stress Variables (N = 575)

4.3.2 *Coping*. The descriptive findings related to coping will be discussed with respect to coping strategies and coping function.

**Coping strategies**. In total, 1389 individual coping strategies were reported by the entire adolescent sample. On average, athletes identified between two and three coping strategies (M = 2.43, SD = 1.39) to manage the stressful interpersonal event in sport (refer to Table 4.1). Univariate ANOVA did not demonstrate gender differences in the number of coping strategies reported, F(1, 573) = 3.59, p = .058.

A parsimonious description of the identified coping strategies required classification of the coping strategies into higher order coping categories (Crocker, 1992; Crocker & Isaak, 1997; Curry & Russ, 1985; Frydenberg & Lewis, 1993; Gould, Eklund et al., 1993; McCubbin, Thompson, & McCubbing, 1996; Phelps & Jarvis, 1994; Ryan-Wenger, 1992). Based on recommendations within the sport literature (e.g., Côté et al., 1993; Gould, Jackson et al., 1993; Scanlan et al., 1989), a five-step content analysis of coping responses was performed. First, coping responses from the questionnaire were transcribed into a spreadsheet format. Each coping response listed in the open ended space provided was considered to be one unit of information. For example, one participant identified the coping response 'thought about what to do in the next play'. This response was considered as a single coping strategy. All responses were copied verbatim (i.e., in the words used by the adolescents). The transcribed spreadsheet of coping responses was read and re-read by the raters before coding the coping responses to increase their familiarity with the data.

The second step of the analysis involved developing a coping strategy category scheme. It was decided a priori to develop a categorization scheme based on the theoretical and empirical research within the sport and developmental literature. A large number of research studies exist within the developmental literature (cf. Fields & Prinz, 1997; Ryan-Wenger, 1992) that have employed exploratory methods to examine the types of coping strategies used by children and adolescents when managing stress. It was reasoned that the current sample was not theoretically different than the adolescents studied within previous research. Thus, it was expected that the coping responses identified would be similar to that found within the literature. In total, twelve higher-

order coping categories were selected and imposed on the coping responses including: acceptance, active coping, aggressive activities, behavioural disengagement, cognitive reappraisal, focusing on and venting of emotion, isolating activities, mental disengagement, planning, seeking social support, self-controlling activities, and spiritual support (see Table 4.11). The selection of a coping strategy category was based on the frequency of occurrence within the sport and developmental literature. That is, coping strategies that consistently emerged across the empirical research were selected.

A critical component of content analysis is that the categories established are sufficiently precise to enable raters to arrive at the same conclusions when reviewing the same body of data (Silverman, 2001). The third-step of the analysis was to operationally define coping strategy categories. Initial definitions were based upon operational definitions found within the literature (e.g., Crocker & Graham, 1995; Curry & Russ, 1993; Ryan-Wenger, 1992). Category definitions were discussed by all three raters to ensure conceptual clarity of each coping strategy. Operational definitions were revised to clarify any conceptual confusion between coping strategy categories. Coping categories, corresponding operational definitions, and examples of coping strategies classified to the category are listed in Table 4.11.

The final steps of the analysis involved the independent coding of coping responses into the determined categories by each rater and an assessment of agreement between the raters. All coping responses with the exception of three (e.g., i.'a bit', ii. 'all the time', and iii. 'not ever') were categorized by the raters. Congruence between the raters was determined by the multi-rater Kappa coefficient (Looney, 1989). The Kappa coefficient provides a difference measurement between the observed agreements of

.

Operational Definition and Examples of Coping Strategies Coded into Coping Categories

| Coping Category | Operational Definition           | Example Coping Strategies      |
|-----------------|----------------------------------|--------------------------------|
| Acceptance      | A belief that a stressor exists  | Did as I was told, think       |
|                 | and behaviour that causes        | about mistake, played along    |
|                 | one to face the stressor and     | Accepted that it happened,     |
|                 | accept its consequences.         | lived with it.                 |
| Active Coping   | The process of taking active     | Tried harder, didn't give up,  |
|                 | steps to try to remove or        | tried to figure out skill, got |
|                 | circumvent the stressor or to    | extra help from coach,         |
|                 | ameliorate its effects.          | played focused.                |
| Aggressive      | Verbal or motor actions that     | Got in a fight, injured other  |
| Activities      | may be hurtful to living         | player, was aggressive,        |
|                 | beings.                          | yelled at goalie.              |
| Behavioural     | Reducing one's efforts to        | Avoided him, sleep, played     |
| Disengagement   | deal with the stressor, even     | another sport, stayed away     |
|                 | giving up the attempt to         | from teammate, removed         |
|                 | attain goals with which the      | myself from gym, quit the      |
|                 | stressor is interfering.         | team.                          |
| Cognitive       | Thoughts that alter one's        | Thought positively,            |
| Reappraisal     | perception of the                | reframed the situation,        |
|                 | characteristics of the stressor. | did it for me.                 |

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Table 4.11 (continued).

| Coping Category      | Operational Definition         | Example Coping Strategies     |
|----------------------|--------------------------------|-------------------------------|
| Focusing on and      | The tendency to focus on       | Cried, yelled out, swear,     |
| venting of emotion   | whatever distress or upset     | punch a wall, got mad.        |
|                      | one is experiencing and to     |                               |
|                      | ventilate feelings.            |                               |
| Isolating Activities | Behaviour that serves to       | Hid, go to my room.           |
|                      |                                |                               |
|                      | the presence of others.        |                               |
| Mental               | Behaviours and cognitions      | Read a book, watch TV,        |
| Disengagement        | that serve to distract the     | ignored it, thought about     |
|                      | person from thinking about     | other things, played          |
|                      | the stressor.                  | computer games.               |
| Planning             | Thoughts focused on ways to    | Imagined doing skill          |
|                      | modify, prevent, or eliminate  | correctly, strategize for a   |
|                      | the stressor and the           | critical play, think about it |
|                      | appropriate timing for         | thought about solutions.      |
|                      | executing the acts.            |                               |
| Seeking Social       | Non-aggressive behaviour       | Talk to someone, talk to      |
| Support              | that involves seeking          | coach, talked to friends,     |
|                      | information, help, or the mere | tell parents, made friends    |
|                      | presence of another person.    | on team.                      |

Table 4.11 (continued).

| Coping Category   | Operational Definition           | Example Coping Strategies  |
|-------------------|----------------------------------|----------------------------|
| Self-Controlling  | Behaviours or cognitions that    | Breathed hard, listened to |
| Activities        | individuals actively pursue that | music, cleared my mind,    |
|                   | serve to reduce tension          | calmed self down           |
| Spiritual support | Behaviour that suggests an       | Prayed                     |
|                   | appeal to a higher being or      |                            |
|                   | God                              |                            |

the raters and the agreement that is contributed by chance alone. A Kappa coefficient of .80 is interpreted as 80% better classification than would be expected by random assignment of the coping strategies. Looney (1989) recommends that Kappa exceed .70 before proceeding with further data analysis. The congruence between raters on coping category classification could not be reached for 27 of the 1389 coping strategies. Kappa coefficients ranged between 0.82 (isolating activities) to 1.00 (aggressive activities, focusing on and venting emotion, seeking social support, spiritual support) (refer to Table 4.12), and were deemed to be acceptable (Looney, 1989). The most frequent coping strategies reported included seeking social support (n = 330, 23.8%), mental disengagement (n = 307, 22.1%), and active coping (n = 283, 20.4%). Spiritual support (n = 2, 0.1%), isolating activities (n = 10, 0.7%), planning (n = 35, 2.5%), and cognitive reappraisal (n = 38, 2.7%) were the least frequently reported types of a coping strategies used by early adolescent athletes to manage interpersonal sport related stressful events (refer to Table 4.12).

**Coping Function**. The data indicated that the early adolescent athletes used the coping strategies for multiple coping functions. Proportionally, coping strategies were used primarily for emotion-focused coping function (M = 36.29, SD = 15.74), followed by problem-focused (M = 33.91, SD = 16.96) and avoidance (M = 29.80; SD = 16.16). A one-way MANOVA found a significant main gender effect on the set of proportional coping functions, F(2, 572) = 6.99, p < .001, partial  $\eta^2 = .02$ . All three proportional coping function variables were judged to be sufficiently reliable to warrant stepdown analysis and an experimentwise error rate of 5 % was achieved by the appointment of alpha as

# Frequencies of Coping Strategies by Coping Category

|                             |            |                         | Multi-rater              |
|-----------------------------|------------|-------------------------|--------------------------|
|                             | Number of  | Percentage of           | Kappa                    |
| Coping Category             | Strategies | Strategies <sup>a</sup> | coefficient <sup>b</sup> |
| Acceptance                  | 74         | 5.3                     | 0.972                    |
| Active Coping               | 283        | 20.4                    | 0.990                    |
| Aggressive Activities       | 45         | 3.2                     | 1.000                    |
| Behavioural Disengagement   | 87         | 6.3                     | 0.961                    |
| Cognitive Reappraisal       | 38         | 2.7                     | 0.973                    |
| Focusing on and Venting     |            |                         |                          |
| Emotion                     | 45         | 3.2                     | 1.000                    |
| Isolating Activities        | 10         | 0.7                     | 0.818                    |
| Mental Disengagement        | 307        | 22.1                    | 0.995                    |
| Planning                    | 35         | 2.5                     | 0.981                    |
| Seeking Social Support      | 330        | 23.8                    | 0.999                    |
| Self-Controlling Activities | 133        | 9.6                     | 0.964                    |
| Spiritual Support           | 2          | 0.1                     | 1.000                    |

Note.<sup>a</sup> Based on 1359 classified coping strategies.<sup>b</sup>Between three independent raters.

shown in the last column of Table 4.13. A Roy-Bargmann stepdown analysis found that both avoidance and emotion focused coping contributed to the proportional coping function composite dependent variable that best distinguished boys and girls. Proportional avoidance coping, entered first, made a significantly unique contribution, stepdown F(1, 573) = 6.57, p < .01, partial  $\eta^2 = .01$ . In comparison to girls (adjusted mean avoidance coping M = 27.81, SD = 0.87), boys directed a greater proportion of their total coping efforts towards avoidance (adjusted mean avoidance coping M = 31.51, SD =0.87). With proportional avoidance coping as a covariate, proportional emotion coping also significantly contributed to the main gender effect, stepdown F(1, 572) = 7.33, p < .01, partial  $\eta^2 = .01$ . Girls directed a greater proportion of their total coping efforts towards emotion-focused coping (adjusted mean emotion-focused coping M = 37.91, SD= .84) compared to boys (adjusted mean emotion-focused coping M = 34.70, SD = .83).

The amount of coping directed towards a specific function across all coping strategies was computed using a mean weighted score (see Section 3.2.3). Average mean weighted coping function scores ranged from 6.26 (avoidance coping, SD = 4.53) to 7.17 (emotion-focused coping, SD = 4.21) (see Table 4.1). Similar to gender difference findings with proportion of coping effort, a one-way MANOVA found a main gender effect for the amount of functional coping use F(2, 572) = 8.48, p < .001, partial  $\eta^2 = .05$ . Stepdown analysis found that both avoidance and emotion focused coping contributed to the mean weighted coping function composite dependent variable that best distinguished between boys and girls (refer to Table 4.14). Mean weighted avoidance coping, entered first, made a significant unique contribution, stepdown F(1, 573) = 13.96, p < .001, partial  $\eta^2 = .02$ . In comparison to girls (adjusted mean avoidance coping M = 5.56, SD = .27),

Univariate and Stepdown Tests of Gender on Proportional Coping Function (N = 575)

|                 | Univariate         |       | Step  |       |        |
|-----------------|--------------------|-------|-------|-------|--------|
| Coping Function | F                  | df    | F     | df    | alpha+ |
| Avoidance       | 5.73 <sup>a</sup>  | 1/573 | 5.73* | 1/573 | .017   |
| Emotion-Focused | 10.06 <sup>b</sup> | 1/573 | 5.74* | 1/572 | .017   |
| Problem-Focused | 0.64               | 1/573 | 0.00  | 1/571 | .017   |

Note. <sup>a</sup>Significance level cannot be evaluated but would reach p<.05 in univariate context. <sup>b</sup>Significance level cannot be evaluated but would reach p<.01 in univariate context. <sup>+</sup>. An experimentalwise error rate of five percent was achieved by the appointment of alpha for each of the dependent variables. \*p<.017.

#### Table 4.14

Univariate and Stepdown Tests of Gender on Coping Function (N = 575)

|                 | Univariate         |       | Stepdown |       |        |
|-----------------|--------------------|-------|----------|-------|--------|
| Coping Function | F                  | df    | F        | df    | alpha+ |
| Avoidance       | 13.96 <sup>a</sup> | 1/573 | 13.96**  | 1/573 | .017   |
| Emotion-Focused | .51                | 1/573 | 12.47**  | 1/572 | .017   |
| Problem-Focused | .81                | 1/573 | 0.09     | 1/571 | .017   |

Note. <sup>a</sup>Significance level cannot be evaluated but would reach p<.001 in univariate context. <sup>+</sup>. An experimentalwise error rate of five percent was achieved by the appointment of alpha for each of the dependent variables. \*\*p<.017.

boys used more avoidance coping (adjusted mean avoidance coping M = 6.96, SD = .26). Mean weighted emotion-focused coping also significantly contributed to gender differences (with mean weighted avoidance coping as a covariate), stepdown F(1, 572) =12.47, p<.001, partial  $\eta^2 = .01$ . Girls used more emotion-focused coping (adjusted mean emotion-focused coping M = 7.69, SD = .20) compared to boys (adjusted emotionfocused coping M = 6.67, SD = .20).

4.3.3 *Social Support*. Very little research exists that describes the nature of *early* adolescent social support within the sport context. Thus, a purpose of the current research was to describe (a) who provided social resources to early adolescent athletes, (b) how many persons provided social support to early adolescent athletes, (c) how much of different social resources are obtained by early adolescent athletes, and (d) early adolescent athletes perceptions of social support.

Social support network size and providers. Early adolescent athletes reported, on average, eight different individuals belonging to his/her sport social support network. ANOVA demonstrated a significant gender difference in the size of social support network, F(1, 573) = 48.17, p < .001,  $\eta^2 = .08$ . Females identified more individuals (M =9.26, SD = 3.29) compared to males (M = 7.43, SD = 3.02).

Parents, siblings, extended family members, school friends, teammates, coaches, teachers, and adult family friends were the main providers of information, emotion, esteem, and tangible support. Provider categories were created for the purpose of describing social support resources obtained from specific network members. Provider categories included family (e.g., parents, siblings, extended family members), friends

(i.e., peers outside of sport), teammates (i.e., peers within sport), other adults (e.g., teachers, counsellors, team managers, adult family friends), and coaches. Tables 4.15 to 4.19 list the number of participants (and percentage of the sample) who indicated at least one person belonging to a particular provider category.

Across all social resources (i.e., information, emotion, esteem, tangible), family members were most frequently identified as a provider of social support. At least one family member was identified for providing social support by 95.8% (information support), 95.7% (emotion support), 86.6% (esteem support), and 97.6% (tangible support) of the sample. Friends and coaches were the next frequently endorsed providers. Other adults and teammates were the least likely endorsed provider of social support (see Table 4.15).

Statistical testing for true differences in provider provision of social support due to gender could not be performed due to unequal differences in cell sample size (Stephens, 1996; Tabachnick & Fidell, 2001). Nevertheless, frequency scores revealed that boys and girls appeared to rank social support providers differently. The order depended on the type of social resource provided and the gender of the athlete (see Tables 4.16 to 4.19). With respect to information support, a family member was identified most frequently (95.8%) followed by coaches (61.0%) and then friends (57.6%). Females identified teammates (21.7%) and other adults (19.2%) as the least frequent providers of information support. Males, on the other hand, reported teammates (14.5%) were even less likely than other adults (28.4%) to be identified as a provider of information support. A similar pattern was found for esteem support. Family members were reported by almost the entire sample (95.7%) as providers of emotional support.

Descriptive Means and Standard Deviation of Social Network Size and Received Social Support of Social Support Resources for Each Provider Category

|                     | Number of |                     |        |             |          |      |  |  |
|---------------------|-----------|---------------------|--------|-------------|----------|------|--|--|
|                     |           |                     | Provid | lers in     | Received |      |  |  |
|                     | Sampl     | e Size <sup>a</sup> | Netv   | <u>work</u> | Sup      | port |  |  |
| Provider Type       | n         | %                   | М      | SD          | М        | SD   |  |  |
| Information Support |           |                     |        |             |          |      |  |  |
| Family              | 551       | 95.8                | 2.61   | 1.20        | 4.02     | 0.85 |  |  |
| Coach               | 351       | 61.0                | 1.70   | 0.99        | 4.05     | 0.91 |  |  |
| Other Adults        | 137       | 23.8                | 1.37   | 0.70        | 3.67     | 1.14 |  |  |
| Friends             | 331       | 57.6                | 1.86   | 1.16        | 3.63     | 0.95 |  |  |
| Teammates           | 104       | 18.1                | 1.49   | 0.76        | 3.57     | 1.00 |  |  |
|                     | Emo       | tion Suppo          | ort    |             |          |      |  |  |
| Family              | 550       | 95.7                | 2.65   | 1.21        | 4.31     | 0.80 |  |  |
| Coach               | 182       | 31.7                | 1.48   | 0.77        | 3.55     | 1.33 |  |  |
| Other Adults        | 70        | 12.2                | 1.18   | 0.45        | 3.89     | 1.12 |  |  |
| Friends             | 339       | 59.0                | 2.04   | 1.18        | 4.08     | 2.66 |  |  |
| Teammates           | 86        | 15.0                | 1.45   | 0.72        | 3.75     | 1.14 |  |  |

Table 4.15 (continued).

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|                |       |                      | Number of |                 |                |       |  |
|----------------|-------|----------------------|-----------|-----------------|----------------|-------|--|
|                |       |                      | Provid    | lers in         | Rec            | eived |  |
|                | Sampl | le Size <sup>a</sup> | Netv      | vork            | Sur            | port  |  |
| Variables      | n     | %                    | M         | $S\overline{D}$ | $\overline{M}$ | SD    |  |
| Esteem Support |       |                      |           |                 |                |       |  |
| Family         | 498   | 86.6                 | 2.46      | 1.21            | 4.34           | 0.92  |  |
| Coach          | 354   | 61.6                 | 1.70      | 0.96            | 4.09           | 0.94  |  |
| Other Adults   | 85    | 14.8                 | 1.30      | 0.61            | 3.82           | 1.15  |  |
| Friends        | 307   | 53.4                 | 1.94      | 1.14            | 3.92           | 1.00  |  |
| Teammates      | 101   | 17.6                 | 1.57      | 0.88            | 4.10           | 1.10  |  |
|                | Tang  | gible Suppo          | rt        |                 |                |       |  |
| Family         | 561   | 97.6                 | 2.65      | 1.21            | 4.48           | 0.77  |  |
| Coach          | 151   | 26.3                 | 1.39      | 0.72            | 3.70           | 1.13  |  |
| Other Adults   | 111   | 19.3                 | 1.41      | 0.71            | 3.49           | 1.20  |  |
| Friends        | 161   | 28.0                 | 1.76      | 1.07            | 3.69           | 1.10  |  |
| Teammates      | 43    | 7.5                  | 1.46      | 0.69            | 3.66           | 0.97  |  |

Descriptive Values of Male (n = 290) and Female (n = 285) Social Network Size and Received Social Support of the *Information* Social Resource by Provider Type

|               | Number of |                     |                |                 |                |      |
|---------------|-----------|---------------------|----------------|-----------------|----------------|------|
|               |           |                     | Provid         | lers in         | Received       |      |
|               | Sampl     | e Size <sup>a</sup> | Netv           | vork            | Sup            | port |
| Provider Type | n         | %                   | $\overline{M}$ | $S\overline{D}$ | $\overline{M}$ | SD   |
| Family        |           |                     |                |                 |                |      |
| Male          | 275       | 95.2                | 2.56           | 1.16            | 4.04           | 0.90 |
| Female        | 276       | 96.5                | 2.66           | 1.23            | 4.00           | 0.81 |
| Coach         |           |                     |                |                 |                |      |
| Male          | 169       | 58.5                | 1.55           | 0.81            | 4.02           | 0.89 |
| Female        | 182       | 63.6                | 1.84           | 1.11            | 3.71           | 0.98 |
| Other Adults  |           |                     |                |                 |                |      |
| Male          | 82        | 28.4                | 1.33           | 0.68            | 3.53           | 1.19 |
| Female        | 55        | 19.2                | 1.42           | 0.74            | 3.88           | 1.03 |
| Frienda       |           |                     |                |                 |                |      |
| Male          | 159       | 55.0                | 1.92           | 1.06            | 3.78           | 0.96 |
| Female        | 172       | 60.1                | 1.80           | 1.06            | 3.78           | 0.96 |
| Teammates     |           |                     |                |                 |                |      |
| Male          | 42        | 14.5                | 1.43           | 0.69            | 3.37           | 1.01 |
| Female        | 62        | 21.7                | 1.54           | 0.80            | 3.71           | 0.98 |

Descriptive Values of Male (n = 290) and Female (n = 285) Social Network Size and Received Social Support of the *Emotion* Social Resource by Provider Type

|            |            |       | Number of           |                |                 |                |      |
|------------|------------|-------|---------------------|----------------|-----------------|----------------|------|
|            |            |       |                     | Provid         | lers in         | Received       |      |
|            |            | Sampl | e Size <sup>a</sup> | Netv           | vork            | Sup            | port |
| Prov       | vider Type | n     | %                   | $\overline{M}$ | $\overline{SD}$ | $\overline{M}$ | SD   |
| Fam        | ily        |       |                     |                |                 |                |      |
|            | Male       | 283   | 97.9                | 2.60           | 1.17            | 4.27           | 0.88 |
|            | Female     | 267   | 93.4                | 2.71           | 1.26            | 4.35           | 0.72 |
| Con        | h          |       |                     |                |                 |                |      |
| Cua        | Male       | 89    | 30.8                | 1.40           | 0.70            | 3.33           | 1.15 |
|            | Female     | 93    | 32.5                | 1.54           | 0.84            | 3.76           | 1.09 |
|            |            |       |                     |                |                 |                |      |
| Othe       | er Adults  |       |                     |                |                 |                |      |
|            | Male       | 35    | 12.1                | 1.27           | 0.55            | 3.84           | 1.18 |
|            | Female     | 35    | 12.2                | 1.09           | 0.28            | 3.94           | 1.08 |
| <b>r</b> ' | 1          |       |                     |                |                 |                |      |
| Frier      | nds        | 126   | 45.1                | <b>a</b>       | 1.10            | 0.65           |      |
|            | Male       | 136   | 47.1                | 2.04           | 1.19            | 3.65           | 3.31 |
|            | Female     | 203   | 71.0                | 2.04           | 1.19            | 4.37           | 3.31 |
| _          |            |       |                     |                | •               |                |      |
| Tear       | nmates     | •     |                     |                | <b>A</b> 4A     |                |      |
|            | Male       | 29    | 10.0                | 1.24           | 0.49            | 3.35           | 1.30 |
|            | Female     | 57    | 19.9                | 1.55           | 0.80            | 3.95           | 1.02 |

Descriptive Values of Male (n = 290) and Female (n = 285) Social Network Size and

Received Social Support of the Esteem Social Resource by Provider Type

|               | Number of |                     |             |             |                |      |
|---------------|-----------|---------------------|-------------|-------------|----------------|------|
|               |           |                     | Provid      | lers in     | Received       |      |
|               | Sampl     | e Size <sup>a</sup> | <u>Netv</u> | <u>vork</u> | Sup            | port |
| Provider Type | п         | %                   | М           | SD          | $\overline{M}$ | SD   |
| Family        |           |                     |             |             |                |      |
| Male          | 247       | 85.5                | 2.40        | 1.12        | 4.36           | 0.74 |
| Female        | 251       | 87.8                | 2.53        | 1.29        | 4.36           | 0.74 |
| Coach         |           |                     |             |             |                |      |
| Male          | 163       | 56.4                | 1.54        | 1.03        | 4.05           | 0.97 |
| Female        | 191       | 66.8                | 1.83        | 0.76        | 4.14           | 0.94 |
| Other Adults  |           |                     |             |             |                |      |
| Male          | 48        | 16.1                | 1.24        | 0.55        | 3.65           | 1.32 |
| Female        | 37        | 12.9                | 1.39        | 0.68        | 4.04           | 0.87 |
| Frienda       |           |                     |             |             |                |      |
| Male          | 143       | 49.5                | 2.01        | 1.25        | 3.77           | 1.02 |
| Female        | 164       | 57.3                | 1.88        | 1.03        | 4.05           | 0.97 |
| Teammates     |           |                     |             |             |                |      |
| Male          | 34        | 11.8                | 1.47        | 0.85        | 3.86           | 1.15 |
| Female        | 67        | 23.4                | 1.62        | 0.90        | 4.22           | 0.80 |

Descriptive Values of Male (n = 290) and Female (n = 285) Social Network Size and Received Social Support of the *Tangible* Social Resource by Provider Type

|               |       |                     | Num    | ber of      |                |      |
|---------------|-------|---------------------|--------|-------------|----------------|------|
|               |       |                     | Provid | lers in     | Received       |      |
|               | Sampl | e Size <sup>b</sup> | Netv   | <u>work</u> | Support        |      |
| Provider Type | n     | %                   | M      | SD          | $\overline{M}$ | SD   |
| Family        |       |                     |        |             |                |      |
| Male          | 285   | 98.6                | 2.50   | 1.27        | 4.53           | 0.72 |
| Female        | 276   | 96.5                | 2.80   | 1.27        | 4.53           | 0.72 |
| Coach         |       |                     |        |             |                |      |
| Male          | 71    | 24.6                | 1.39   | 0.66        | 3.48           | 1.24 |
|               |       |                     |        |             |                |      |
| Female        | 80    | 28.0                | 1.38   | 0.77        | 3.89           | 0.98 |
|               |       |                     |        |             |                |      |
| Other Adults  |       |                     |        |             |                |      |
| Male          | 48    | 16.6                | 1.33   | 0.65        | 3.44           | 1.33 |
| <b>F</b> 1    | (2)   | 22.0                | 1 47   | 0.70        | 2.50           | 1 10 |
| Female        | 63    | 22.0                | 1.47   | 0.76        | 3.52           | 1.10 |
| Friends       |       |                     |        |             |                |      |
| Male          | 80    | 277                 | 1 83   | 1 23        | 3 65           | 1.02 |
| iviaic        | 00    | 27.7                | 1.05   | 1.25        | 5.05           | 1.02 |
| Female        | 81    | 28.3                | 1.69   | 0.90        | 3.74           | 1.02 |
|               |       |                     | •      |             |                |      |
| Teammates     |       |                     |        |             |                |      |
| Male          | 16    | 5.5                 | 1.30   | 0.68        | 3.53           | 1.20 |
|               |       |                     |        |             |                |      |
| Female        | 27    | 9.4                 | 1.46   | 0.69        | 3.74           | 0.81 |

Friends were the next frequently reported for both females (71.0%) and males (47.1). Approximately one-third of the sample reported the coach as a provider of emotional support, while teammates (19.9% for females, 10.0% for males) and other adults (12.2% for females, 12.1% for males) were the least frequent identified providers. Tangible support was almost exclusively provided by family (97.6%). One quarter of the athletes reported tangible support coming from other provider sources. Friends and coaches were reported by 28.0% and 26.3% of the sample, respectively, followed by other adults (19.3%) and teammates (7.5%).

The size of social support network of specific types of social support ranged between four to five providers (refer to Table 4.1). Information support was provided by the largest network (M = 5.17, SD = 1.81) while tangible support had the smallest social network (M = 3.77, SD = 1.81). A one-way MANOVA found a main effect for gender on the combined set of social support network size variables, F(4, 570) = 8.90, p < .001,partial  $\eta^2 = .06$ . All four social support network size variables were judged to be sufficiently reliable to warrant stepdown analysis. An experimentwise error rate of 5 % was achieved by the appointment of alpha as shown in the last column of Table 4.20. Results revealed that the number of providers for emotional and esteem support made unique contributions to the composite social support network size variable that best distinguished girls and boys (Refer to Table 4.20). The greatest contribution was made by emotional support network size (the highest priority dependent variable), stepdown F(1, 1)(573) = 25.59, p < .01, partial  $\eta^2 = .04$ . Girls had higher number of providers of emotional social support (adjusted mean emotional support network size M = 4.91, SD = 0.11) than did the boys (adjusted mean emotional support network size M = 4.14, SD = 0.11). With

|                     | Univa              | <u>Univariate</u> |         | lown  |        |
|---------------------|--------------------|-------------------|---------|-------|--------|
| Variable            | F                  | df                | F       | df    | alpha+ |
| Emotion support     | 25.59 <sup>a</sup> | 1/573             | 25.59** | 1/573 | .013   |
| Esteem support      | 30.87 <sup>a</sup> | 1/573             | 8.76**  | 1/572 | .013   |
| Information support | 11.26 <sup>a</sup> | 1/573             | 0.62    | 1/571 | .013   |
| Tangible support    | 9.89 <sup>a</sup>  | 1/573             | 0.34    | 1/570 | .013   |

Univariate and Stepdown Tests of Gender on Social Support Network Size (N = 575)

Note. <sup>a</sup>Significance level cannot be evaluated but would reach p<.01 in univariate context. +. An experimentalwise error rate of five percent was achieved by the appointment of alpha for each of the dependent variables. \*\*p<.013.

differences due to emotional support network size already entered, esteem support network size made an unique contribution, stepdown F(1, 572) = 8.76, p < .01, partial  $\eta^2$ =.02. Girls had a greater number of providers of esteem support (adjusted mean esteem support network size = 4.81, *SD*=0.08) than did the boys (adjusted mean esteem support network size = 4.46, *SD* = 0.08).

Tables 4.15 to 4.19 lists the number of specific providers who give early adolescent athletes specific types of support (according to those athletes who reported the specific provider type). On average, approximately three different family members were reported to provide the individual with information support (M = 2.61, SD = 1.20), emotion support (M = 2.65, SD = 1.21), esteem support (M = 2.46, SD = 1.21), and tangible support (M = 2.65, SD = 1.21) (refer to Table 4.15). For all other provider

categories, one to two different individuals were identified on average as providing social support to the male and female athletes (refer to Tables 4.16 to 4.19).

**Received social support**. Early adolescent athletes reported receiving 'quite a bit' of information (M = 4.10, SD = .078), emotion (M = 4.08, SD = 0.78), esteem (M = 4.15, SD = 0.83), and tangible (M = 4.24, SD = 0.85) support in general. One-way MANOVA results similar to that of social support network size, demonstrated that females tended to report greater amounts of received support compared to their male counterparts, F (4, 570) = 2.41, p<.05, partial  $\eta^2$  =.02. Received social support variables were judged to be sufficiently reliable to warrant stepdown analysis and an experimentwise error rate of 5% was achieved by appointment of alpha to .013 (refer to Table 4.21). Stepdown analysis revealed that received emotional support was the only factor to make a unique contribution to the composite received social support variable differentiating boys and girls, stepdown F (1, 573) = 8.32, p<.01, partial  $\eta^2$ =.01. Results demonstrated that girls received greater amounts of emotional support (adjusted mean received emotional support M = 4.18, SD = 0.05) compared to boys (adjusted mean received emotional support M = 3.97, SD=0.05).

In addition to examining the overall amount of social support resources received across the whole sample, the data was also examined to describe the amount of received social support from specific providers. The data provided some evidence that received social resources in the sport context with early adolescent athletes may be determined, in part, by both the provider type and the recipient (i.e., gender) (refer to Tables 4.16 to 4.19). Results should be viewed cautiously, however, since statistical testing for true

|                     | Univ              | Univariate      |        | down  |        |
|---------------------|-------------------|-----------------|--------|-------|--------|
| Variable            | F                 | $\overline{df}$ | F      | df    | alpha+ |
| Emotion support     | 8.32 <sup>a</sup> | 1/573           | 8.32** | 1/573 | .013   |
| Esteem support      | 5.01              | 1/573           | 0.62   | 1/572 | .013   |
| Information support | 1.26              | 1/573           | 0.47   | 1/571 | .013   |
| Tangible support    | 2.34              | 1/573           | 0.20   | 1/570 | .013   |

Univariate and Stepdown Tests of Gender on Received Social Support (N = 575)

Note. <sup>a</sup>Significance level cannot be evaluated but would reach p<.01 in univariate context. <sup>+</sup>. An experimentalwise error rate of five percent was achieved by the appointment of alpha for each of the dependent variables. \*\*p<.013.

differences could not be performed due to unequal cell sizes (Stephens, 1996; Tabachnick & Fidell, 2001). Males and females reported receiving the greatest amount of information support from their coaches and family members (Ms = 4.05 and 4.02, SDs = .91 and .85, respectively). Other adults, friends, and teammates make up a secondary source from which early adolescents report receiving slightly more than 'some' information support (refer to Table 4.16). The amount of emotional support received by male and female athletes differed according to provider type. For girls, the greatest amount of received emotional support came from friends (M = 4.37, SD = 3.31), and family (M = 4.35, SD = 0.72). Teammates (M = 3.95, SD = 1.02) and other adults (M = 3.94, SD = 1.08) were sources of slightly less received emotional support, while coaches (M = 3.76, SD = 1.09) provided the least amount of emotional support for female athletes. For boys, the greatest amount of received emotional support came from family support for female athletes. For boys, the greatest amount of received emotional support for female athletes. For boys, the greatest amount of received emotional support came from family (M = 4.27, SD = 0.88). Other

adults (M = 3.84, SD = 1.18) and friends (M = 3.65, SD = 0.98) were sources of slightly less received emotional support, while teammates (M = 2.35, SD = 1.30) and coaches (M= 3.33, SD = 1.15) provided the least amounts of emotional support for male athletes. With respect to esteem support, both female and male athletes report receiving the most support from family members (M = 4.34, SD = 0.92), followed by their teammates (M =4.10, SD = 0.95) and coaches (M = 4.09, SD = 0.94). In comparison to the other providers, friends (M = 3.92, SD = 1.00) and other adults (M = 3.82, SD = 1.15) were identified as providing the least amount of esteem support to female and male athletes. Girls and boys report that tangible support is received primarily from family members (Ms = 4.53 and 4.43, SDs = 0.72 and 0.82, respectively). For the girls, coaches, followed by friends and teammates are reported to be secondary and tertiary sources of tangible support (refer to Table 4.19). Alternatively, the boys reported that friends followed by teammates and coaches are secondary and tertiary sources of tangible support. Other adults were reported to be the source from whom early adolescents received the least amount of tangible support.

**Perceived social support**. Descriptive means for male and female samples demonstrated that both male and female athletes have high perceptions of social support from family, peers, and coach providers (refer to table 4.1). A one-way MANOVA demonstrated significant gender differences in the combined perceived social support variables F(3, 571) = 6.57, p < .001, partial  $\eta^2 = .03$ . Perceived social support variables were judged to be sufficiently reliable to warrant stepdown analysis. An experimentwise error rate of 5 % was achieved by the appointment of alpha at .016. Stepdown analysis revealed perceived friendship support to be the only source to uniquely contribute to the

composite perceived social support dependent variable, stepdown F(1, 573) = 17.05, p<.01, partial  $\eta^2 = .03$  (refer to Table 4.22). Girls perceived greater amounts of social support from their friends (M = 59.87, SD = 0.37) than did boys (M = 57.74, SD = 0.37).

### Table 4.22

Univariate and Stepdown Tests of Gender on Perceived Social Support (N = 575)

|                          | <u>Univariate</u>  |       | Stepc   |                 |        |
|--------------------------|--------------------|-------|---------|-----------------|--------|
| Variable                 | $\overline{F}$     | df    | F       | $\overline{df}$ | alpha+ |
| Perceived Friend Support | 17.05 <sup>a</sup> | 1/573 | 17.05** | 1/573           | .016   |
| Perceived Family Support | 1.00               | 1/573 | 0.42    | 1/572           | .016   |
| Perceived Coach Support  | 0.41               | 1/573 | 2.22    | 1/571           | .016   |

Note. <sup>a</sup>Significance level cannot be evaluated but would reach p<.01 in univariate context. <sup>+</sup>. An experimentalwise error rate of five percent was achieved by the appointment of alpha for each of the dependent variables. \*\*p<.016.

#### Summary of stress, coping and social support descriptive analyses.

Approximately 90% of sampled athletes experienced interpersonal stress (of moderate intensity, on average) within the sport context. Most participants identified his/her most stressful interpersonal event in sport to have occurred three to twelve months prior to testing. Just over half of the participants described his/her most stressful encounter to be short in duration (i.e., lasting up to one week) while the other half of the participants described moderate and long-duration encounters.

To manage the interpersonal stress in sport, the athletes report using 2 to 3 different strategies. The coping strategies take on many different forms but in general, are

most often in the form of 'seeking social support', 'mental disengagement', and 'active coping'. The coping strategies are directed towards multiple coping goals. Girls direct more coping effort towards emotion-focused coping while boys direct more coping effort towards avoidance coping.

Family, friends (non-sport), and coaches are identified most often as providers of social support by early adolescent athletes. Overall, girls report sport social support networks consisting of nine different members, while boys' social support network consists of seven members. In general, boys and girls receive 'quite a bit' of information, emotion, esteem, and tangible support. Furthermore, the athletes have, in general, high perceptions of available support from parents, friends, and coaches. Social support in sport appears to be favoured for early adolescent girls with respect to (a) larger emotion and esteem social support networks, (b) higher perceptions of available social support from friends, and (c) more received emotional support. Social support resources obtained by the athletes appear to be specific to (i) the provider, (ii) the gender of the recipient, and (iii) the type of social resource.

#### 4.4 Structural Relation between Social Support and Coping Function

Two theoretically derived models were tested to determine the relation between social support and coping. The direct effects model described a relation between the three social support dimensions and coping function where social support dimensions covary and directly influence coping efforts (refer to Figure 2.3). The second model tested, the mediation model, holds that the relations between coping and the two social support

variables of social support network size and received social support is mediated by perceptions of social support (refer to Figure 2.3).

4.4.1 *Measurement analysis*. At the measurement level, structural models are evaluated by how well the measured items represent the modeled constructs. Since the only difference between the direct effects and mediation models are the structural relations between the constructs (not the actual relations between the measured items and constructs), the measurement model is essentially the same for both models. Model estimation procedures demonstrated an acceptable fit to the data (see Table 4.23). Fit statistics including robust chi-square and CFI indices were acceptable. Slight differences in fit statistics were found between the direct effects and mediation model. This is likely due to the differences in structural pathways between the constructs of the two models. Standardized residual analysis provided further evidence for the acceptability of the measurement model. None of the 105 fitted standardized residuals were found to be larger than |.02| (98.10%, z < |.01|, 0%, z > |.02| boys; 91.42%, z < |.01|, 0%, z > |.02|).

4.4.2 *Structural analysis*. Standardized regression and correlation coefficients are displayed for the direct effect model tested with the entire sample in Figure 4.5. Standardized regression coefficients are smaller than theoretically expected. Further, with the total sample analyzed, only 4% of coping function variance is explained by the social support constructs. No significant relations were observed between the social support constructs and coping function when examined with the total sample (see Figure 4.5). The structural effects were, however, moderated by gender. Standardized regression

coefficients and correlation coefficients are displayed for the direct effect and mediation models in Figures 4.6 and 4.7 for male and female samples, respectively.

### Table 4.23

Goodness of Fit Statistics and Explained Variance of Structural Analysis between Social Support and Coping for Males and Females

|                     |                |                |    |      |      |        |       | % Explained |
|---------------------|----------------|----------------|----|------|------|--------|-------|-------------|
|                     |                | Robust         |    |      |      | Robust |       | Coping      |
| Model               | χ <sup>2</sup> | χ <sup>2</sup> | df | TLI  | CFI  | CFI    | RMSEA | Variance    |
| Males ( $n = 290$ ) |                |                |    |      |      |        |       |             |
| Direct Effect       | 110.82         | 104.36         | 71 | .964 | .972 | .972   | .04   | .09         |
| Mediator            | 120.20         | 112.59         | 73 | .959 | .967 | .966   | .05   | .01         |
| Females $(n = 285)$ |                |                |    |      |      |        |       |             |
| Direct Effect       | 109.61         | 101.04         | 71 | .958 | .967 | .969   | .04   | .14         |
| Mediator            | 117.81         | 108.63         | 73 | .952 | .962 | .963   | .05   | .09         |

Note. Robust  $\chi^2$  = Satorra-Bentler  $\chi^2$ . TLI = Tucker-Lewis index. CFI = comparative fit index. Robust CFI = Satorra-Bentler comparative fit index. RMSEA = root mean square error of approximation.



Figure 4.5 Standardized regression coefficients and correlation coefficients of the direct effect model with total sample (N=575). Solid lines represent significant relations at p < .01. Dashed lines represent non-significant relations.



Figure 4.6 Standardized regression coefficients and correlation coefficients of the direct effect and mediation model, respectively, for males (n = 290). Solid lines represent significant relations at p < .01. Dashed lines represent non-significant relations.



Figure 4.7 Standardized regression coefficients and correlation coefficients of the direct effect and mediation model, respectively, for females (n = 285). Solid lines represent significant relations at p < .01. Dashed lines represent non-significant relations.

In the presence of all social support constructs, received social support was the only dimension found to directly relate to coping function (standardized coefficient = .43) with the male sample; while perceived social support (standardized coefficient = .36) and social support network size (standardized coefficient = .25) with the female sample. The amount of variance accounted for by this pattern of relations is listed in Table 4.23.

The mediation model was not supported structurally. The relations necessary for mediation of social support network size and received social support through perceptions of social support were not statistically supported (refer to Figures 4.6 and 4.7). Based on the structural analysis, the direct effects model was demonstrated to be the superior model describing the relation between social support and coping function of early adolescent athletes.

In summary, the measurement properties within both the direct effect and mediation model were demonstrated to have acceptable fit for the data. Structural analysis of both models revealed that the direct effects model provided a superior description of the theoretical relation between social support and coping function for an adolescent athlete population. Structurally, the relation between specific social support dimensions differs between early adolescent boys and girls. For boys, received social support is the only dimension directly relating to coping function and accounts for 9% of the variance. For girls, on the other hand, coping function was directly related to both the size of the social support network and perception of social support, accounting for 14% of the explained variance.

#### Chapter 5

#### Discussion

Guided by Lazarus' (1991a, 1999) Cognitive-Motivational-Relational theoretical model of stress and emotion, this dissertation sought to investigate the nature of early adolescent athletes' social support and coping with interpersonal sport stress. This objective was accomplished through a multi-step process that included both structural and descriptive analyses. The results add to the empirical literature on early adolescent athletes' social support and coping processes in a number of important ways. First, findings revealed that early adolescent athletes employed relatively few coping strategies when managing stressful interpersonal situations. These coping strategies were used for multiple functions (i.e., problem-focused, emotion-focused, and avoidance), supporting theoretical propositions (Lazarus, 1991a, 1999). Collectively, these results carry important implications for the measurement of coping with an adolescent population. Second, there was empirical support for the multidimensional nature of social support with an early adolescent sample within the *sport* setting. The general pattern of results revealed that social support within sport is similar to that reported in other non-sport contexts (e.g., Berndt, 1989; Clark-Lempers et al., 1991; Furman & Buhrmester, 1992; Gottlieb, 1991; van Aken & Asendorpf, 1997; Wentzel, 1998). Although there were some gender differences, the size of the effect was small, rendering it to be practically meaningless. This result suggests that sport may be a special context for the exchange of social resources among boys and girls.

A key finding was the empirical support for a direct effects model describing the relation between early adolescent athletes social support and coping with interpersonal

sport stress. The direct effects model described a relation where social support dimensions co-vary and directly influence coping efforts. Empirical support for the direct effects model confirmed theoretical propositions about (a) the existence of a relation between social support and coping (e.g., Aldwin, 1994; Boekaerts, 1996; Lazarus, 1991a; Seiffge-Krenke, 1995), and (b) that social support dimensions relate differently to coping (e.g., Pierce et al., 1996). This latter finding is important for future research efforts desiring to use more parsimonious models to further understand coping and social support. Structural analyses also demonstrated that gender contributed to differences in the relation between social support dimensions and coping. Boys' coping was significantly related to the social resources obtained from the social network (i.e., received social support). Girls' coping was significantly related to the size of the social network and perceptions of available support from the social network (i.e., social support network size and perceived social support, respectively). Socialization processes and the adoption of traditional gender-roles are mechanisms that are likely to contribute to the ways in which boys' and girls' social resources help in managing stressful interpersonal situations in sport (Barbee et al., 1993; Rudolph, 2002; Tamres, Janicki, & Helgeson, 2002).

Elaborations of these findings are presented in the subsequent sections. The first section discusses the descriptive and structural findings related to early adolescent athletes' social support. The next section will highlight descriptive findings related to early adolescent athletes' experience of interpersonal stress in sport and the use of coping. The third section will report on findings from structural equation modeling analyses examining the relation between social support and coping functions. Finally, the

strengths and limitations of the study, along with recommendations for future research will be addressed.

#### 5.1 Early Adolescent Athlete Social Support

5.1.1 Structure of the social support construct. A comprehensive understanding of the relation between social support and coping requires the concurrent examination of all three social support dimensions (Pierce et al., 1996). Prior to testing the relation between social support and coping, the structural model of social support was examined. This analysis was performed in order to (i) determine that social support dimensions were distinct from each other, and (ii) confirm the multidimensional nature of social support within the sport context. Results from confirmatory factor analyses supported the adequacy of an oblique three-factor social support model for an early adolescent athlete sample. Model fit was improved by using a robust estimate of chi-square and CFI, which corrects for potential problems associated with multivariate kurtosis (West et al., 1995). Structural equation modeling results also provided support for invariance of the social support model across gender. Specifically, the invariance in factor loadings and factor variances/factor covariances provided the strongest evidence for equality of the three-factor model among males and females.

Standardized covariance values demonstrated that social support dimensions are moderately related. Perceived social support had the strongest relation to the other two dimensions. This finding supports theoretical propositions regarding the relational properties among social support dimensions (Bianco & Eklund, 2001; Sarason, Pierce et al., 1990).

There was evidence of gender differences in the relations among social support dimensions, particularly between social support network size and received social support. The strength of relation between social support network size and received social support was lowest for boys ( $r_s = .26$ ) compared to girls ( $r_s = .48$ ). This finding is consistent with socialization influences not yet empirically established in the sport literature. Some authors have argued that during early adolescence, boys are socialized towards achievement, autonomy, and emotional control (Barbee et al., 1993). Girls, on the other hand, experience increased pressure from socializing agents to develop nurturing and emotional expressive social relationships. Further, the number of close interpersonal relationships is important for the exchange of social resources for females (Rubin, Bukowski, & Parker, 1998). Thus, in the sport context, it is demonstrated that early adolescent girls received social support was influenced by the number of social support providers to a greater extent than it was for boys.

5.1.2 *Descriptive results*. Early adolescent athletes identified a number of different individuals providing information, emotion, esteem, and tangible support. On average, athletes reported between 4 and 5 individuals as providers of a *specific type* of social resources. Many of the providers provided multiple social resources to the athlete and across all social resource types. Athletes reported a social support network consisting of approximately eight different individuals. These findings are similar to research reported in the general social support literature (Milardo, 1992; Vaux, 1985). Contrary to findings in other contextual environments, such as school and leisure activities (e.g., Belle, 1989; Berndt, 1989; Cauce, Reid, Landesman, & Gonzales, 1990; Zarbatany et al.,

1992), female athletes identified a slightly larger social support network compared to males. The result may provide support for the hypothesis that socialization factors in sport are different than in other settings. Some researchers argue that competitive sport does not lend itself to socializing the female gender-role to the same extent as that which is found in other contexts such as school and leisure activities (e.g., Coakley, 1993; Czisma et al., 1988; Greendorfer et al., 1996). More specifically, sport socializes adolescents to concern themselves with achievement and competency which supports the male gender-role. Consequently, females' social ties in sport may more closely resemble that of their male counterparts. In the general literature, boys' social relationships are described as greater in number, less intimate, and more superficial than female relationships (Helsen et al., 2000).

It was hypothesized that girls would report receiving more social support, and have higher perceptions of social support. Although MANOVA analyses revealed a significant main effect for all three social support dimensions in favour of girls, the effect size was so small that the result is practically meaningless.

An interesting finding was that the adolescent athletes identified different groups of individuals as providers of specific types of social resources. This implied that the boys and girls were able to (a) recognize conceptual differences among social support content, and (b) delineate from whom to obtain a specific social resource. This finding supports developmental literature that suggests maturational factors emerging during this stage of the lifespan, such as abstract thinking and perspective taking, permit the adolescent to distinguish between different individuals who can provide specific types of help (Berndt, 1989; Berndt & Hestenes, 1996; Gottlieb, 1991; Hartup, 1996; Rubin et al.,
1998; Schonert-Reichl, Offer, & Howard, 1995; Sullivan, Marshal, & Schonert-Reichl, 2002; van Aken et al., 1994; Vaux, 1985).

It is important to note, however, that the early adolescents were not able to fully differentiate among all possible social resources that could be obtained from members of his/her social network. Pilot research to determine the suitability of instruments for the main study suggested that the modified-Social Support Survey based upon an adult model of social support in sport was not appropriate for the present sample. Adult social support models in sport claim that eight sources of social resources are exchanged in the sport context including listening, emotion, emotional challenge, task appreciation, task challenge, reality confirmation, personal assistance, and material assistance (Bianco & Eklund, 2001; Hardy & Crace, 1991; Richman et al, 1993). Adolescents sampled expressed great difficulty in distinguishing between adult social resources. Additionally, little empirical support has been found within the sport literature to confirm the eightfactor content model of social support for an adolescent sport sample (Berndt & Hestenes, 1996; Rees et al., 2000; Udry et al., 1997). Empirical research within the developmental literature suggest that children and early adolescents distinguish between five main types of help from others including, companionship, emotion, esteem, information, and instrumental support.

Not specific to a type of social resource, early adolescent athletes, in general, reported strong perceptions of available social support from family, friends, and coaches. This result is similar to that reported in the developmental social support literature. For example, Clark-Lempers et al. (1991) assessed adolescents' perceptions of supportive aspects of relationships (e.g., admiration, affection, companionship, conflict, instrumental

aid, intimacy, nurturance, reliable alliance, and satisfaction) with parents, siblings, friends, and teachers. Results from a sample of 1110 adolescents revealed that early adolescents (i.e., 11 through 13 years of age) gave higher ratings on all aspects of their relationships with others compared to middle and older adolescents and that perceptions of support declined across the adolescent years. The researchers argued that the diminished social support perceptions may be due, in part, to more realistic appraisal by the older adolescent of his or her various relationships brought about by the increased abstract thought ability. Future research is needed to identify factors which contribute to differences in adolescent athletes perceptions of social resources.

The present findings also supported the hypothesis that girls, compared to boys, receive greater amount of emotional support and report higher perceptions of friend support from the social support network in the sport setting. Developmental research demonstrates that peer relations during adolescence increase in importance, especially among females, who describe their friendships as more supportive than do boys (Berndt & Hestenes, 1996; Rubin et al., 1998; Vaux, 1985; Zarbatany, McDougall, & Hymel, 2000). This is likely due to the levels of intimacy experienced within their friendships. Adolescents, in general, report an increase in the level of intimacy within best friend relations. Girls, however, have friendships that are more intimate than those of boys (Buhrmester, 1996).

Research investigating peer relations among children and adolescents is emerging within the sport literature (Côté, 2001; Smith, 1999; Weiss et al., 1996; Weiss & Smith, 1999; Weiss & Stuntz, in press). Competitive sport may present as a special context for peer relationships and friendships during adolescence. Zarbatany et al. (1992)

demonstrated that older children desired different types of social resources from friendships during different peer activities (e.g., academic, telephone conversations, watching TV/listening to music, sports, and games). This finding implies that children have different expectations of their peer relationships in different contexts. In the present study, sport-peers were not highly regarded as sources of information, emotion, esteem, or tangible support compared to other social support providers. Teammates were less likely to be nominated as a social resource provider, and when nominated, provided less social resources compared to non-sport friendships. Two explanations for this result are plausible. First, the social resources most desired from teammates, such as loyalty and fair play (e.g., Weiss et al., 1996), were not evaluated. An alternative explanation may be that the nature of the dyadic peer relationships among early adolescents (i.e., friendship) is different within sport. Competitive sport is described as a context that emphasizes independence and competence (Donnelly, 1993). Several sport researchers argue (e.g., Donnelly, 1993; Rosenfeld et al., 1989) that for some individuals, sport is not a context that fosters the development of close, intimate, and supportive relationships.

The present findings also supported other research and hypotheses that significant adults (i.e., parents and coaches) are an important social resource for early adolescent athletes (Côté, 1999, 2001; Gould et al., 1997; Udry et al., 1997; Van Yperen, 1995, 1998). Across all four social resources investigated, parents were nominated as the primary source of social support by boys and girls (with the exception of girls' emotional support). This is consistent with developmental literature showing that adolescents continue to seek out and receive care, nurturance and help from parents despite decreased contact time with parents and an increased desire to be among peers (Berndt & Hestenes,

1996; Helsen et al., 2000; Rubin et al., 1998; Seiffge-Krenke, 1995; Sullivan et al., 2002; Udry et al., 1997; van Aken & Asendorpf, 1997). Coaches were providers of information and esteem support but not emotional or tangible support for early adolescent athletes. This is finding is not surprising since research also reports that adolescents choice of help-giver may be based on the perceived effectiveness of different help sources (Boldero & Fallon, 1995; Cutrona & Russell, 1990; Sullivan et al., 2002). Adolescents, who to desire sound advice and opinion about his/her sport ability, are likely to turn to coaches perceived as experts.

## 5.2 Description of Early Adolescent Athlete Interpersonal Stress and Coping

5.2.1 *Interpersonal sport stress*. Early adolescent athletes reported a variety of interpersonal difficulties within sport. In describing the interpersonal stress, athletes reported experiencing difficulties with coaches, teammates, as well as others such as sport officials, team managers, siblings, and non-sport friends. Most participants recalled the stressful interpersonal event occurring three to twelve months prior. Fifty percent of the athletes reported that the stressful event lasted less than a week in length, while the remaining athletes reported stressful events that lasted up to one month and up to twelve months in length. The interpersonal difficulties produced a moderate level of stress for the athletes. This finding is consistent with previous research reporting that parents, teammates, and coaches can be a source of stress for youth athletes (Coakley, 1993; Gould & Petlichkoff, 1988; Gould, Wilson et al., 1993; Udry et al., 1997).

5.2.2 Coping. In light of the conceptual and measurement complexities of coping, careful consideration was needed regarding the operalization of the construct. While it is possible to use specific coping strategies without the consideration of social resources, it was argued that the directed function of specific coping strategies would be more likely related to social support. To assess coping, a semi open-ended questionnaire format was adopted based on Compas and colleagues (Compas et al., 1988; Compas & Williams, 1990; Compas et al., 1996). This format required early adolescent athletes to identify the coping strategies used and the function(s) of each coping strategy in managing the stressful interpersonal event. It was argued that the open-ended question format enhances the validity of coping assessment in comparison to past research efforts with coping strategy checklists. Several coping researchers have critiqued traditional coping assessment procedures, arguing that several measurement difficulties are inherent to coping strategy checklists including: (a) inclusions of coping strategies that may not be appropriate for a developing adolescent athlete sample, (b) coping function factors generated through exploratory factor analysis of the coping strategies that often yields different solutions with different samples, and (c) an over representation of coping based on social desirability or what the individual believes he/she 'should' or 'would' do (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Crocker et al., 1998; Schwarzer & Schwarzer, 1996).

The study revealed that early adolescent athletes use between two and three different coping strategies to manage a stressful interpersonal event. This finding has been demonstrated in other research examining adolescent coping using an open-ended procedure and has significant implications for how *adolescent* coping should be assessed

(Compas et al., 2001; Compas et al., 1988; Compas & Williams, 1990; Compas et al., 1996). It is evident that early adolescents do not employ a variety of coping strategies when managing stressful events. Thus, traditional approaches to assessing adolescent coping that rely on multiple coping strategy checklists (based upon adult coping models) are inappropriate and do not accurately capture the nature of adolescent coping. Substantial empirical study reveals that adolescent coping is different from adults in two important ways (Aldwin, 1994; Boekaerts, 1996; Compas, 1998; Fields & Prinz, 1997; Frydenberg, 1997; Seiffge-Krenke, 1995). First, adolescents have fewer coping resources to draw from during stressful situation then do adults (Fields & Prinz, 1997). Second, adolescents have less experience than adults with different types of stressful events and have less knowledge of which coping strategies are most effective during specific situations (Compas, 1998; Fields & Prinz, 1997). These factors are likely to contribute to adolescents using a limited number of coping strategies during stressful events.

There are some limitations to the open-ended coping assessment. Compas et al. (2001) caution that the use of open-ended questioning procedures may under-represent coping since this procedure relies on the adolescent's ability to recall coping responses. Although the early adolescents sampled in the study understood the conceptual meaning of coping, it was not obvious whether they could clearly identify whether his/her actions and behaviours represented 'coping'. For example, an athlete who may have 'done nothing' may have failed to understand that this act represents a coping response, and consequently did not identify the coping strategy. As yet, research has not identified the mechanisms that lead early adolescents to distinguish behaviours and cognitions as representative of coping responses. That is, early adolescents may come to understand

coping strategies through the direction of effort exerted during stressful situations (i.e., towards the stressor itself, towards management of emotions) and/or the effectiveness of action in alleviating the stress (Stone et al., 1991). An early adolescent's meta-cognition of coping is likely to interact with questioning styles to influence the accuracy of responses to coping measures.

The athletes reported a wide variety of coping responses in the management of stressful interpersonal events. Thus, a parsimonious description of early adolescents' coping required coping strategies to be classified into higher order categories. Similar to reports of coping by adolescents outside of the sport context, the results of the study reveal that early adolescent athletes use active coping, seeking social support, and mental disengagement when managing a stressful interpersonal event (Compas et al., 1988; Fields & Prinz, 1997; Gamble, 1994; Stern & Zevon, 1990). The least identified coping strategies included cognitive reappraisal, isolating activities, planning, and spiritual support. It is important to emphasize that the coping strategies identified are those in relation to interpersonal stress. Coping responses are likely to fluctuate with the changing nature of the stressor (Compas et al., 1988; Folkman & Lazarus, 1985; Lazarus, 1991a). Direct comparison with coping responses reported within the sport literature is not appropriate at this time, since no prior coping research exists that has examined the management of interpersonal stress within the sport context. The findings suggest that adolescents' coping with a stressful interpersonal event in sport is similar to that employed during interpersonal stress experienced in non-sport contexts (Rudolph, 2002).

Early adolescent athletes acknowledged that employed coping strategies were used for multiple functions. That is, a single coping strategy can be used to 'try to change

the situation' (problem-focused coping), 'control or manage my feelings' (emotionfocused coping), and 'to physically and/or mentally avoid the situation' (avoidance coping) in varying amounts. This result is in agreement with other research that reveal a three factor coping function structure within the youth sport context (Kowalski & Crocker, 2001), and theoretical propositions regarding the multi-functional nature of coping strategies (i.e., Lazarus, 1999; Lazarus & Folkman, 1984). Conceptually, this finding is very important and has implications for the measurement of adolescent coping. Typically, coping researchers factor analyze coping strategies into higher order coping function categories for more parsimonious description (Crocker et al., 1998). This procedure may be problematic for several reasons. First, it fails to account for the idiographic and multi-functional nature of coping. Further, the multi-dimensional nature of coping contributes to unstable factor solutions across samples, which is a common criticism among coping researchers (e.g., Compas et al., 2001; Crocker et al., 1998; Schwarzer & Schwarzer, 1996). Finally, the use of factor analysis may lead to the false conclusion that a single coping function is associated with specific coping strategies. A more complete understanding of coping requires careful consideration of the relation of coping strategies (i.e., micro analysis) to the coping function (i.e., macro analysis).

It was hypothesized that girls would report coping responses that were used for more emotion-focused function than boys, and that boys would report more avoidance coping than girls. Although MANOVA analysis revealed a significant main effect, the effect size was small which limits the practical significance. The weak effect size of gender differences may be explained, in part, by the procedures used in determining coping function. Coping function was determined by consideration of *each* employed

strategy. Most studies reporting gender differences in adolescent coping function have determined coping functions through exploratory factor analyses of coping strategy checklists or have assumed that a specific coping strategy represents a coping function category (Aldwin, 1994; Boekaerts, 1996; Frydenberg, 1997; Frydenberg & Lewis, 1993; Gould et al., 1997; Kolt et al., 1995; Seiffge-Krenke, 1993, 1995). This procedure may have inflated the size of differences between girls and boys coping because coping functions are determined by a grouping of coping strategies that has been rated similarly by the sample, rather than by the individual coping strategies. Nevertheless, the findings add to empirical literature demonstrating gender differences in adolescent coping (Boekaerts, 1996; Crocker & Graham, 1995; Fields & Prinz, 1997; Gould et al., 1997; Kolt et al., 1995; Seiffge-Krenke, 1995; Shulman, 1993).

Explanations for adolescent gender differences in coping include differences in girls and boys socialization and the adoption of traditional gender-roles across the adolescent development period (Aldwin, 1994; Boekaerts, 1996; Frydenberg, 1997; Tamres et al., 2002). The gender socialization hypothesis argues that girls are encouraged to express emotions and turn to others for emotional support during times of stress, whereas boys are discouraged from displaying emotions and asking for help because it signifies weakness (Tamres et al., 2002). Boys are more likely to cope with stress by denying a problem or avoiding it because they are socialized to conceal their emotions. Proponents of the gender socialization hypothesis (e.g., Rudolph, 2002) argue that gender differences in coping are particularly evident during stressful situations involving interpersonal relationships because boys and girls value different aspects of their interpersonal relationships. Girls value close and intimate dyadic exchanges. In contrast,

boys value self-enhancement, dominance, and competition that can be achieved through associating with groups (i.e., peer group). Thus, adolescent boys and girls may respond differently to interpersonal stress because boys and girls perceive the stressor differently (Rudolph, 2002; Tamres et al., 2002). With regard to sport, it has been suggested that the competitive nature of sport does not lend itself to socializing the female role (Greendorfer et al., 1996). Competitive sport is associated socialization practices that favour achievement and competency values, which is more of the male gender role (Eitzen & Sage, 1996; Greendorfer et al., 1996). This may also explain, in part, why adolescent gender differences in managing interpersonal stress in sport were not as strong as that reported in other contexts.

## 5.3 The Relation between Social Support and Coping

5.3.1 *Structural results*. A central purpose of the study was to investigate the *relation* between early adolescent athletes' social support and coping with interpersonal sport stress. To examine the relation between social support and coping, two models were hypothesized. The models were based on theoretical propositions and empirical findings describing the relations between the specific dimensions of social support and their relation with coping (Dunkel-Schetter & Bennett, 1990; Dunkel-Schetter et al., 1987; Komproe et al., 1997; Lazarus, 1991a, 1999; Pierce et al., 1996). The first model hypothesized a direct relation between the three social support dimensions (i.e., social support network size, received social support, perceived social support) and coping. A second model, termed the mediation model, hypothesized that perceived social support mediated the relation between coping and the social support dimensions social support

network size and received social support. Gender was also hypothesized to be an important moderator of the social support and coping relation. Hypothesized models were, therefore, examined separately for boys and girls. Structural equation modeling procedures (EQS 5.7; Bentler, 1995) was used to determine whether the direct effect or the mediation model was the "best" model to describe the nature of the social support and coping relation. Specifically, the criteria of (a) fit of the measurement model, (b) pattern of significant correlations and beta weights, and (c) amount of variance explained in coping was used to evaluate the models (Diamantopoulos & Siguaw, 2000; Kelloway, 1998).

Results from confirmatory factor analysis demonstrated that the measurement structure of social support and coping was satisfactory. A gender factor invariance test, however, revealed significant differences in the factor loadings between boys and girls  $(\chi^2 \text{ difference test} = 25.97, \text{ p} < .01)$ . Lagrange multiplier test for releasing constraints revealed that boys and girls differed on the factor loading of avoidance coping. To determine the meaning of these findings, Kirk's (1996) argument about the goals of research were considered. He stated that the researchers must decide (a) whether the result is due to chance or sampling variability, and (b) whether the results are practically significant and useful in the real world. Upon examination of the pattern of factor loadings and the actual size of difference in the factor loading of avoidance for boys and girls were compared, the statistically significant finding held little *practical significance*. It was concluded that the measurement of social support and coping was acceptable and that structural differences between the direct effect and mediation model could not be attributed to differences in the measurement model.

The findings clearly indicated that gender was the key moderator of the social support and coping relation. Combining male and female athletes produced misleading results. When the total sample was examined, there were no significant relations between the dimensions of social support and coping. Only four percent of the variance in coping was accounted for by social support. When analysed separately by gender, a different pattern of significant relations emerged between the social support dimensions and coping. Further, the amount of explained variance in coping accounted for by social support increased to 9% and 14% when analysed separately with boys and girls respectively. For boys, in the presence of all three social support dimensions, only received social support significantly related to coping ( $\beta = .43$ ). Social support network size and perceived social support did not significantly relate to coping ( $\beta = .01$  and  $\beta = .01$ .27, respectively). The mediation model was not tested because a relation was not demonstrated between the mediator (i.e., perceived social support) and coping. For girls, significant relations emerged between social support network size and coping ( $\beta = .25$ ) and perceived social support and coping ( $\beta = .36$ ). There was no significant relation between received social support and coping ( $\beta = -.21$ ). The first condition of mediation (Baron & Kenny, 1986) were satisfied by the female sample; (i) perceived social support is significantly related to coping function. Other conditions of mediation was only partially met as (i) only received social support was significantly related to perceived social support, and (ii) received social support was not significantly related to coping function in the presence of perceived social support. The relation between social support network size and coping remained significant in the presence of perceived social support. Thus, the mediation model was not supported.

In summary, the direct effects model provided the best fit for the data for both boys and girls. Structurally, the direct effects model is moderated by gender. For boys, with all other social support dimensions present, received social support directly related to coping and accounted for 9% of the explained variance. For girls, with hall other social support dimensions present, perceived social support and social support network size directly related to coping and accounted for 14% of the explained variance.

Results from the structural equation modeling analysis demonstrated empirical support for a number of theoretical propositions concerning the social support and coping relationship. First, social support is a factor that contributes to early adolescent athletes coping (Bianco & Eklund, 2001; Lazarus, 2000b). Second, important individual factors (i.e., gender) influence the relationship between environmental resources (i.e., social support) and coping (Bianco & Eklund, 2001; Lazarus, 2000b). Last, a comprehensive understanding of the role of social support in coping requires acknowledging the multidimensional nature of social support (Bianco & Eklund, 2001; Pierce et al., 1996). Each of these theoretical propositions will be discussed in the following sections.

5.3.2 Social support in the coping process. Social support is hypothesized to influence health outcomes related to stress by affecting both appraisal and coping processes (Dunkel-Schetter & Bennett, 1990; Komproe et al., 1997; Lazarus, 1999). Pierce et al. (1996) argues that an understanding of the relation between social support and complex constructs, such as coping, requires the conceptualization of social support as a multidimensional construct. Research demonstrates that conceptually distinct dimensions of social support have qualitatively different relations with appraisal and

coping processes (e.g., Dunkel-Schetter et al., 1987; Komproe et al., 1997; Sandler et al., 1989; Shulman, 1993; Smith et al., 1990; Stern & Zevon, 1990). This study extends this line of empirical research. The results demonstrate that dimensions of social support have qualitatively different relations with coping *in the presence* of the other social support dimensions. However, this finding is only present when gender is accounted for. When boys and girls were analyzed in one sample together, social support dimensions did not significantly relate to coping, and social support only accounted for 4% of the variance in coping. However, when gender was accounted for in the model, social support significantly related to coping and explained 9% and 14% of the variance in male and female adolescent coping, respectively. These findings are in line with that reported by Smith et al. (1990) who found that adolescent athletes social support and coping shared very little variance with each other. These researchers, however, did not examine social support and coping were not accounted for in their analyses.

The finding that different social support dimensions are related to coping in the presence of other social support dimensions is meaningful because the moderate interrelations among the social support dimensions are likely to reduce the strength of the relation between a single social support dimension and coping (Marrow-Howell, 1994; Newcomb, 1990b; Stevens, 1996). Mulitcollinearity can be an issue for researchers when parameters are strongly related (i.e., correlations greater than .80) (Marrow-Howell, 1994). Multicollinearity reduces the amount of unique variance accounted for by the parameters and is associated with solutions that are mathematically unstable and unreliable. Despite demonstrating a pattern of relation between social support and coping

that are in accordance with theoretical propositions, the current study did find some evidence of multicollinearity among the social support dimensions (especially between received and perceived social support). Thus, it is strongly recommended that future research cross-validate the present findings.

One method to reduce multicollinearity is to reduce the number of parameters in the solution (Marrow-Howell, 1994; Stevens, 1996). While reducing the number of dimensions of social support examined in relation to adolescent coping will decrease the probability of multicollinearity problems and create a more parsimonious solution, it is conceptually inappropriate given the current state of the literature. There is still much to understand regarding mechanisms and developmental processes that underlie the influence of social resources upon adolescent coping. By limiting the social support dimensions that are examined, important interactions between the person, situation, and social resource may be missed. For example, empirical research demonstrates that a number of factors moderate the influence of social support upon coping efforts during adolescence. These factors include attachment styles (e.g., Larose & Bernier, 2001), context of problem (e.g., Boldero & Fallon, 1995), family environment (e.g., Lohman & Jarvis, 2000), gender (e.g., Tamres et al., 2002), perceived control (e.g., Compas et al., 1991; Schonert-Reichl & Muller, 1996), social-cognitive maturity (e.g., Ciarrochi, Deane, Wilson, & Rickwood, 2002; Rogler & Cortes, 1993) and self-esteem (e.g., Nadler, 1986). Until the complex relations between person, situation, and interpersonal relationships are better understood, future research should continue to examine social support as a multidimensional construct.

5.3.3 Gender and the social support and coping relation. Coping is a complex process that involves a multitude of factors including personality factors, situational parameters, and interpersonal relationships (Lazarus, 1999; Pierce et al., 1996). It was expected that social support should be related to coping but that differences in social support should not solely account for differences in coping. Empirical findings supported this conceptual argument. This study demonstrated that gender moderated the relation between social support and coping in early adolescent athletes. Lazarus (1999) contends that social support shapes appraisal and coping during troubled interactions by (a) directly affecting the immediate environment, (b) constraining thoughts, feelings, and actions, (c) making resources available to the individual, and (d) shaping personality variables such as motives and beliefs. Researchers have suggested that socialization differences and gender-role intensification contribute towards the observed gender differences in the mechanisms underlying the social support and coping relation during the early adolescent developmental period (Tamres et al., 2002).

A robust finding in the coping literature is that women spend more time than men discussing problems with friends and family (Tamres et al., 2002). This finding is hypothesized to result from socialization forces that encourage females to turn to others for support during distressing situations whereas help-seeking is discouraged among men. Empirical research demonstrates that female adolescents seek help (a form of coping) from others more than male adolescents (Raviv, Sills, Raviv, & Wilansky, 2000; Schonert-Reichl & Muller, 1996; Tishby, Turel, Gumpel, Pinus, Lavy, Winokour et al., 2001). This pattern of coping, however, may be more prominent during interpersonal stress contexts. With relationship stress, men may withdraw while women may confront

the problem (i.e., seek out help) because interpersonal functioning is more important or central to the lives of women than men (Tamres et al., 2002). A recent meta-analysis examining adult gender differences in coping, revealed that with interpersonal stress, men used more venting and avoidance strategies to cope compared to that of women (Tamres et al., 2002). Women used more active coping, general problem-focused coping, seeking social support for emotional and non-specific reasons, isolation and rumination (Tamres et al., 2002). In the current study, adolescent athletes coping with interpersonal sport stress reported using coping strategies for multiple functions (refer to Section 5.2.2). Gender differences did emerge (albeit with weak effect sizes) with boys directing more coping efforts towards avoidance, while girls directed more coping efforts towards emotion-focused coping.

Gender differences in the functional use of coping strategies may be due to, in part, the supportive nature of boys and girls social relationships during stressful encounters. That is, the demonstration of specific coping efforts is hypothesized to be a cue to the social network regarding needs and/or desires for social support receipt (Dunkel-Schetter & Bennett, 1990; Dunkel-Schetter et al., 1987). Early adolescent male athletes who do not actively seek out help or avoid directly managing the interpersonal stressful situation are likely to be perceived by social network members as requiring social assistance. In this way, the social support received acts to assist the athlete in coping such as redirecting problem-solving strategies, tangible aid, and emotional sustenance (Sandler et al., 1989; Shulman, 1993; Stewart, 1989). Early adolescent female athletes who actively attend to relationship difficulties in sport through emotional expression and seeking out social resources are likely to signal to providers that social

support assistance is not needed and/or desired by the individual. Perceptions of available social support, may be more important to females' coping in the sense that it engender a sense of self-efficacy for effective management of difficult interpersonal situations (Rook, 1992).

# 5.4 Strengths of the Study

This research has extended the empirical research examining social support and coping during adolescence. A common criticism of youth sport coping literature is the lack of systematic examination. This study sought to improve upon past research attempts by using theoretical guidelines. Guided by Lazarus' (1991a, 1999) Cognitive-Motivational-Relational model of stress and emotion, careful consideration was given to (a) inclusion of a moderating factor (i.e., gender), (b) constraint of moderating factors (i.e., context of stressor, and age), and (c) operalization of coping and social support constructs. This helped to reduce the confounding effects due to interactions among factors and poor measurement of the constructs, as well as to increase potential generalizability within the coping literature.

A significant contribution of this study is the application of a semi open-ended coping instrument to assess adolescent coping. A number of researchers (e.g., Ayers et al., 1998; Compas et al., 2001; Coyne & Gottlieb, 1996; Schwarzer & Schwarzer, 1996) argue that the traditional approach of using coping strategy checklists may not be appropriate for an adolescent population and fails to address the transactional nature of coping. The Youth Coping Questionnaire (YCQ), based on work by Compas and his colleagues (Compas et al., 1988; Compas & Williams, 1990; Compas et al., 1996),

adequately measured athletes coping responses and is argued to be a better approach to measure adolescent coping. The YCQ differentiates itself from traditional measures in a number of important ways. First, it permits the adolescent to identify strategies through recall procedures that do not include prompts from a list of typically used coping strategies. Second, the function of the strategy is determined by the early adolescent's rating and not by exploratory factor analytical procedures. Lastly, a mean weighted score determines the amount of coping directed towards a function. This has the advantage of accounting for the unique contributions of the individual coping strategies without a bias from the number of coping strategies employed.

An additional strength of the study includes the use of structural modeling procedures to empirically test the relation between early adolescent athlete's social support and coping. Structural equation modeling is a powerful statistical procedure that enables researchers to analyze multiple *latent* variables that are moderately related (such as coping and social support) in a confirmatory and hypothesis-testing manner while controlling for measurement error (Newcomb, 1990b).

#### 5.5 Limitations of the Study

While this study has made significant contributions to the adolescent sport coping literature, it is not without limitation. First, the findings are limited to early adolescents who are managing difficulties with interpersonal relationships within the sport context. Context, type of stress, and adolescent maturation processes have been implicated as moderators of social support and coping processes (Aldwin, 1994; Boekaerts, 1996;

Compas et al., 2001; Fields & Prinz, 1997; Frydenberg, 1997; Furman & Buhrmester, 1992; Seiffge-Krenke, 1995; Vaux, 1985; Zarbatany et al., 1992; Zarbatany et al., 2000).

The assessment instruments used to measure early adolescent athletes' social support and coping processes present a second limitation. Measures were chosen based on sensitivity to the developmental and conceptual issues surrounding the assessment of social support and coping with an early adolescent population. The questioning procedure used to quantify adolescents coping function, however, may have been problematic. Asking adolescents to indicate the degree to which the coping strategy was used for *all* types of coping function may have, in part, resulted in biased responses due to the inability to clearly delineate the function(s) of the coping strategy.

All of the social support and coping factors, with the exception of perceived social support, were measured with single item questions. Consequently, psychometric standards held for self-report measures could not be determined via standard procedures (i.e., test-retest reliability, internal consistency statistics). Instead, reliability of the measures was determined through maximum likelihood procedures of confirmatory analysis of latent social support and coping function variables. Ullman, (2001) states that the reliability coefficients produced are essentially equivalent to those derived through Cronbach's alpha. It is important to note that this issue is not uncommon within the coping literature. Several researchers (e.g., Compas et al., 2001; Coyne & Gottlieb, 1996; Crocker et al., 1998; Stone et al., 1991) argue that the transactional nature of coping is not consistent with traditional psychometric standards. Nevertheless, it is cautioned that findings may differ across samples due to measurement properties of the assessment instruments.

An additional limitation involves the use of a self-report/recall design. The use of this design for accurately capturing appraisal and coping processes has been questioned by several coping researchers (e.g., Compas et al., 2001; Ptacek, Smith, Espe, & Raffety, 1994; Stone & Kennedy-Moore, 1992). With the passage of time, a biased recall may occur based on memory decay or distortion and outcomes related to the coping process (Ptacek, Smith, Espe et al., 1994). However, there is no clear consensus among stress and coping researchers as to the most appropriate time frame for recall. Studies have included recall time periods ranging from immediately following the event (e.g., Haney & Long, 1995) to within 12 months (e.g., Ebata & Moos, 1991). In the youth sport context, sport researchers have employed a 12-month recall procedure (e.g., Kowalski & Crocker, 2001). Short participation seasons in youth sport often preclude athletes from being able to recall stress within the last three months. In addition, by extending the recall period to twelve months, it is argued that there would be greater potential for an athlete to report on a unique and salient emotional event.

Nevertheless, it is acknowledged that the twelve month recall design may be problematic with respect to (a) accuracy of recall and (b) the chronic nature of the event reported by the early adolescent athletes. With time, early adolescent athletes may reconstruct a difficult situation from that which was actually experienced. Approximately half of the participants recalled a stressful event that was of moderate and long duration (i.e., between one week and one month in duration, and between one month and twelve months in during). This finding implies that the interpersonal stress in the sport context can be ongoing for some individuals. Furthermore, the stress process for individuals with ongoing or chronic stress is likely to be different that those who experience more acute

sources of stress. The ongoing nature of the interpersonal stress influences the intensity of the stress experience and is associated with cyclical shifts in appraisal and coping (Gottlieb, 1997; Lazarus, 1991a; Timko et al., 1993). However, research has yet to empirically determine whether the stress process is qualitatively different for individuals managing acute and chronic sources of stress (Aldwin, 1994).

Lastly, it is acknowledged that the findings presented by the study were determined with a single sample and need to be cross-validated. The possible influence of multicollinearity (between social support dimensions) restricts confidence in the nature of relations found between social support and coping functions. It is recommended that future research attempt to replicate these findings with a similar early adolescent athlete sample to ensure that the pattern of relations between social support and coping as reported reflect the true nature of its relation.

#### 5.6 Recommendations for Future Research

Future research should continue to examine research issues related to early adolescents' coping and social support in sport. Echoing recommendations from coping and social support theorists (e.g., Boekaerts, 1996; Lazarus, 1991, 1999; Pierce et al., 1996; Sarason et al., 1990; Seiffge-Krenke, 1995), it is imperative that sport research follow a systematic line of inquiry to better understand these processes. Coping and social support are conceptualized to be dynamic and complex systems (Lazarus, 1999; Sarason, Pierce et al., 1990). The use of theory will aid sport researchers to (a) select relevant antecedent, moderating and mediating, and outcome variables, (b) specify relations among relevant variables, and (c) draw generalizations among different research

studies (Crocker, 1993). Lazarus' (1991a, 1999) Cognitive-Motivational-Relational model of emotion provides a comprehensive framework for evaluating coping and social support processes of early adolescents in sport.

Youth sport researchers need to consider conceptual and measurement issues related to social support and coping for an adolescent population. Conceptually, maturational differences in adolescent social support and coping have been empirically documented within the general psychology literature. Findings from this study reveal similar findings within the sport setting. There was some empirical evidence that early adolescents had difficulty differentiating between social support resources hypothesized within adult models to be available within sport. Additionally, early adolescents reported using very few coping efforts when managing a stressful interpersonal event. Coping and social support instrumentation needs to be sensitive to the maturation of adolescents' coping and social support processes.

The present findings underscore that current sport measurement instruments (i.e., coping strategy checklists) are probably inadequate for evaluating early adolescents coping. Coping strategy checklists, commonly used in the sport literature, assess between eight to twelve different dimensions of coping strategies. Similar to empirical findings reported in the non-sport setting, the present results demonstrated that early adolescent athletes used relatively few coping strategies (i.e., between 2 to 3 strategies) in managing difficult events. Assessment of coping through a coping strategy checklist is likely to bias adolescent coping responses, including an over-reporting of coping strategies, social desirability responses, and responses reflecting "should of" or "would of" beliefs. A second concern involves classifying coping strategies into categories that often represent

a single coping function (Schwarzer & Schwarzer, 1996). It was empirically demonstrated that a single coping strategy is employed for multiple functions. The use of a semi open-ended question format to assess adolescent athletes coping appears to be a promising alternative to coping checklists. Other alternatives include the use of a narrative approach to evaluate the complex and dynamic nature of coping (Lazarus, 1999). Future research should continue to assess the use of an open-ended question procedure as a viable method for evaluating adolescent coping.

Future research should continue to investigate processes contributing to *how* adolescent athletes manage or cope with stressful events in sport. This research examined the relation of social resources. While the results confirm theoretical propositions, future research should cross-validate the findings with a similar sample.

An important area for further study is to understand the mechanisms that underlie relations between social support and coping. The current study found evidence for the moderating influence of gender. A better understanding of the relation between social support and coping might be achieved with the identification and control of factors contributing to the underlying mechanisms of the social support and coping relation. The developmental literature has implicated several factors that mediate and moderate the social support and coping relation such as control beliefs, self-esteem, social-cognitive maturation, gender, context of the problem, family environment, and attachment styles. A more complete understanding of the social support and coping relation within the sport context needs to incorporate an understanding of the influence of these factors

Youth sport researchers should also consider socialization factors that are unique to the sport context in future research. Sport is a special context for adolescent

interpersonal relationships and the exchange of social resources. Adults, both parents and coaches, are active participants in youth sport and are the predominant socialization agents for children and early adolescents (Côté, 1999, 2001; Greendorfer et al., 1996). Emerging research investigating youth sport peer relationships suggest that peer relations in sport function differently from that of other contexts (Weiss & Smith, 1999; Weiss et al., 1996; Weiss & Stuntz, in press; Zarbatany et al., 1992). Zarbatany et al. (1992) demonstrated that early adolescents do not seek the same resources from friends within sport compared to non-competitive settings. Other research reveals that late adolescent athletes' seek out fewer social resources from peers than from adults (Rosenfeld et al., 1989; Udry et al., 1997).

Another area for future research involves the investigation of outcomes of the social support and coping relation. Social support and coping are processes purported to contribute to individuals' physical, psychological, and emotional well-being (Aldwin, 1994; Lazarus, 1991a; Shumaker & Brownell, 1984). While empirical research generally supports these propositions, some research shows an association between coping and social support and increased feelings of distress and the use of maladaptive behaviours (Aldwin, 1994; Rook, 1992; Rubinstein & Feldman, 1993). Little empirical work has investigated how different facets of early adolescents' social support contribute to coping that is evaluated to be adaptive and maladaptive. This line of inquiry is important to the scientific understanding of the coping process as well as to the development of effective coping interventions (e.g., the teaching of coping strategies) that would facilitate early adolescents' adaptation to stress in sport. In closing, although this study has provided

important information about coping and social support, there is still many challenges to understanding stress and coping during adolescence.

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## Footnotes

<sup>1</sup>Data collected from a pilot interview with an adolescent synchronized swimmer. The name is fictional to protect the identity of the athlete.

<sup>2</sup>Data collected from pilot interview with an adolescent synchronized swimmer. The name is fictional to protect the identity of the athlete.

<sup>3</sup>Data collected from pilot interview with an adolescent gymnast. The name is fictional to protect the identity of the athlete.

<sup>4</sup>Although children under the age of 11 years were not identified to be within the desired sample constraints, the logistics of collecting data with the pilot sample necessitated the inclusion of children as young as 10 years.

## Appendix A

Ethical Consent from Advisory Committee on Ethics in Behavioural Science Research

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## Appendix B

Parent and Athlete Consent Form for Pilot and Preliminary Studies

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# Appendix C

## Measures Used for Pilot Study

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| UBC |  |
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| UBC |  |

# THANK YOU FOR AGREEING TO PARTICIPATE IN THIS UBC RESEARCH PROJECT!

to fill out in order to complete this package. Pages 2-14 includes questions about your thoughts and feelings about people This package contains sixteen pages in total, including this cover page. There are fifteen pages that you will be required who you are in contact with, as well as a stressful time in sport and what you did during that time. Pages 15-16 include a set of questions that tells us more about you and your background. Some of these questions will require you to write a short statement. Other questions can be completed similar to that of a magazine survey, by choosing from a set of responses or by filling in some blanks. For example you might be asked about the following statement:

| Not A             | watch television | read a magazine | hang out with my friends |
|-------------------|------------------|-----------------|--------------------------|
| At A Little       |                  |                 |                          |
| Somewhat          |                  |                 |                          |
| Quite A Ve<br>Bit |                  |                 |                          |
| rry Much          |                  |                 |                          |

Note:

You can mark the square by either marking with a check ( $\checkmark$ ), a cross (**X**), or filling it in (

Only select ONE square when answering the question.

If you do not understand a question, please ask one of us for help.

Please DO NOT skip any questions. Answer each question as best as you can. \*\* This is very important \*\*

We need to be sure that we put all of YOUR answers together and not put your answers with somebody else's. To do this, we will need to assign you an identification number that is located in the top right corner page. Your name will NOT be kept with your answers. All of your responses will remain confidential. No persons other than the members of the research team will have access to your responses.

There are no "right" or "wrong" answers. Be as honest and as accurate as you can in answering each question.

TELL US ABOUT YOUR SOCIAL RELATIONSHIPS

# Instructions:

Read each question carefully and then indicate your response for the following items by marking the corresponding square with either a check ( $\checkmark$ ), a cross (X) or by filling it in (

| Hardly Sometimes Most of Always<br>Ever the Time |  |  |   |  |  |  |  |  |
|--|--|--|---|--|--|--|--|--|
| Never  |  |  |   |  |  |  |  |  |
|  | 1. Some kids feel left out by their friends, but others do not.<br>Do you feel left out by your friends? | 2. Some kids are well liked by their friends, but other kids<br>are not. Are you well liked by your friends? | <b>3.</b> Some kids are picked on and teased by their friends, but other kids are not. Do you get picked on and teased by your friends? | 4. Some kids have friends who make fun of them, but<br>other kids do not. Do your friends make fun of you? | 5. Some kids have friends who like to hear their ideas, but<br>other kids do not. Do your friends like to hear your ideas? | 6. Some kids have friends who do a lot of things for them,<br>but other kids do not. Do you and your friends do a lot of<br>things for each other? | 7. Some kids feel very close to their friends, but other kids<br>do not. Do you feel very close to your friends? | 8. Some kids can count on their friends for help or advice<br>when they have problems, but other kids cannot. Can you<br>count on your friends for help or advice when you have<br>problems? |

Identification Number:

|                     | ave friends who care about them, but other<br>. Do you think that your friends care about | ave friends who make them feel bad, but<br>o not. Do your friends make you feel bad? | an count on their family for help or advice<br>ave problems, but other kids cannot. Can<br>n your family for help and advice when you<br>ms? | ave a family who do a lot of things for each<br>ther kids do not. Do you and your family do<br>gs for each other? | lave a family who makes them feel bad, but<br>lo not. Does your family make you feel bad? | ihare a lot with their family, but other kids do<br>share a lot with your family? | nave a hard time talking to their family, but<br>lo not. Do you have a hard time talking to<br>? | ave a family who is never there when they<br>but other kids do. Do you feel like your<br>ver there when vou need them? |
|---------------------|---|--|--|---|---|---|--|--|
| Never               |   |  |  |   |   |   |  |  |
| Hardly<br>Ever      |   |  |  |   |   |   |  |  |
| Sometimes           |   |  |  |   |   |   |  |  |
| Most of<br>the Time |   |  |  |   |   |   |  |  |
| Always              |   |  |  |   |   |   |  |  |

Identification Number:

|                     | d left out by their family, but other kids do<br>sel left out by your family? | ve a family that listens to their ideas, but<br>not. Does your family listen to your ideas?  | e an important member of their family, but<br>e not. Are you an important member of | ink that their family cares about them, but<br>not. Do you think your family cares about | el that they don't belong in their family, but<br>. Do you feel like you <i>don't</i> belong in your | el that they don't belong on their sport<br>ner kids do. Do you feel like you <i>don't</i><br>ur sport team? | el left out by their sport team, but other<br>Do you feel left out by your sport team? | ink that their coaches care about them, but<br>not. Do you think that your coaches care |
|---------------------|---|--|---|--|--|--|--|---|
| Never               |   |  |   |  |  |  |  |   |
| Hardly<br>Ever      |   |  |   |  |  |  |  |   |
| Sometimes           |   |  |   |  |  |  |  |   |
| Most of<br>the Time |   | An and a second se |   |  |  |  |  |   |
| Always              |   |  |   |  |  |  |  |   |

Identification Number:

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| Nev                 | idvice Are Intyour | cares<br>obody | t other tes? | ner kids | not | ther<br>r each | les, but g to |
|---------------------|--------------------|----------------|--------------|----------|-----|----------------|---------------|
| Hardly<br>Ever      |                    |                |              |          |     |                |               |
| Sometimes           |                    |                |              |          |     |                |               |
| Most of<br>the Time |                    |                |              |          |     |                |               |
| Alw                 |                    |                |              |          |     |                |               |

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**<u>STOP</u>** <u>PLEASE WAIT FOR FURTHER INSTRUCTION</u>

.

|                 | inute to think about<br>, and teammates)                         | others provide when<br>le you know that<br>nship you have with |                     | <b>"no one"</b> *<br>orresponding                | help that you could                            | s to a problem. | Receive Very | Much        |     |       |          |             |   |                                      |
|-----------------|--|--|---------------------|--|--|-----------------|--------------|-------------|-----|-------|----------|-------------|---|--------------------------------------|
| er:             | with. Take a m<br>chers, coaches                                 | f all those peop<br>type of relation                           |                     | <b>pe of help, list</b><br>y marking the c       | the amount of<br><b>זסא</b> .                  | ssible solution | Receive      | Quite a Bit |     |       |          |             |   |                                      |
| iffication Numb | ole you interact<br>its, friends, tea                            | Listening support<br>ist the initials of<br>als, indicate the  | יכ, טוטנווכו, אואני | the specific tylually receive by                 | concerned with<br>J from others I              | oncerning pos   | Receive      | Some        |     |       |          |             |   |                                      |
| Ident           | about the peop<br>as your paren<br>d it in sport.                | For example, I<br>provided, first li<br>3eside the initia      | ו, ומנווכו, וכומנוע | i <b>de you with t</b><br><u>th</u> help you act | . We are NOT<br>Jally receiving                | or guidance c   | Receive a    | Little      |     |       |          |             |   | □<br>`                               |
|                 | your thoughts a<br>of sport (such<br>ou if vou neede             | s can provide.<br>empty spaces r<br>type of help. E            |                     | l or does prov<br>licate how muc                 | ⁺ filling it in ( <b>■</b> )<br>p you are actu | e you advice e  | Receive      | Very Little |     |       |          |             |   |                                      |
|                 | s asking about<br>ide and outside<br>el could help vo            | help that other<br>udging. In the e<br>e you with that         |                     | one who could<br>vho is listed ind               | ross (X), or by<br><b>now much hel</b> l       | le who provid   | Relation to  | the Person  | Mom | Coach | Teammate | Best Friend |   | nation support<br>others?            |
|                 | I find question:<br>in your life ins<br>or who vou fee           | he category of<br>o you without j<br>or could provid           | u example, u        | know of any c<br>each person v                   | check (✓), a c<br>vant to know I               | Support: Peop   | Initials of  | Person      | MK  | ГС    | KL       | QW          |   | <b>w much</b> inforn<br>receive from |
|                 | Instructions:<br>Below you wil<br>all the people<br>who help vou | First – Read t<br>others listen t<br>provide you, c            | coach.              | <b>*If you don't</b><br><u>Second</u> – For      | square with a receive. We w                    | Information     |              |             | a.  | Ö     | IJ       | ġ.          | Ð | f. Overall, ho<br>do you             |

Identification Number\_

| 32. Listening                      | Support: People                | e who listen to ye        | ou without judging     |                     |                    |                        |                      |
|------------------------------------|--------------------------------|---------------------------|------------------------|---------------------|--------------------|------------------------|----------------------|
|                                    | Initials of                    | Relation to               | Receive Very           | Receive a           | Receive Some       | Receive Quite          | Receive Very         |
|                                    | Person                         | the Person                | Little                 | Little              |                    | a Bit                  | Much                 |
| ы<br>Б                             |                                |                           |                        |                     |                    |                        |                      |
| P.                                 |                                |                           |                        |                     |                    |                        |                      |
| ు                                  |                                |                           |                        |                     |                    |                        |                      |
| ġ.                                 |                                |                           |                        |                     |                    |                        |                      |
| ů                                  |                                |                           |                        |                     |                    |                        |                      |
| f. Overall, how<br>you receive fro | v much listening<br>un others? | , support do              |                        |                     |                    |                        |                      |
| 33. Sport App                      | reciation: Peopl               | le who acknowle           | dge your efforts a     | nd express appre    | ciation about your | sport performanc       | e.                   |
|                                    | Initials of<br>Person          | Relation to<br>the Person | Receive Very<br>Little | Receive a<br>Little | Receive Some       | Receive Quite<br>a Bit | Receive Very<br>Much |
| 5                                  |                                |                           |                        |                     |                    |                        |                      |
| þ.                                 |                                |                           |                        |                     |                    |                        |                      |
| С                                  |                                |                           |                        |                     |                    |                        |                      |
| d.                                 |                                |                           |                        |                     |                    |                        |                      |
| Ġ.                                 |                                |                           |                        |                     |                    |                        |                      |
| f. Overall, how<br>you receive fro | / much sport ap)<br>m others?  | preciation do             |                        |                     |                    |                        |                      |

**Receive Very** 34. Sport Challenge: People who encourage you to improve your current sport performance and to push yourself to go beyond your **Receive Very** Much Much 35. Emotional Support: People who makes you feel better and indicate to you that they are on your side and care for you. Receive Quite **Receive Quite** a Bit a Bit Receive Some **Receive Some** Identification Number: Γ Receive a Receive a Little Little Receive Very Receive Very Little Little المراجع (1 f. Overall, how much sport challenge do you Relation to Relation to the Person the Person f. Overall, how much emotion support do you receive from others? Initials of Initials of Person Person receive from others? o. റ്റ q. ö ы. ü. ن ف ġ. limits

Identification Number\_

| 36. Emotional                       | <b>Challenge:</b> Peo              | ple who encoura   | ge you to judge w  | hether your thou | ghts and feelings a | are suitable for the | e situation. |
|-------------------------------------|------------------------------------|-------------------|--------------------|------------------|---------------------|----------------------|--------------|
|                                     | Initials of                        | Relation to       | Receive Very       | Receive a        | Receive Some        | Receive Quite        | Receive Very |
|                                     | Person                             | the Person        | Little             | Little           |                     | a Bit                | Much         |
| a.                                  |                                    |                   |                    |                  |                     |                      |              |
| þ.                                  |                                    |                   |                    |                  |                     |                      |              |
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| q                                   |                                    |                   |                    |                  |                     |                      |              |
| Ċ.                                  |                                    |                   |                    |                  |                     |                      |              |
| f. Overall, how<br>you receive froi | much <b>emotion</b> a<br>m others? | al challenge do   |                    |                  |                     |                      |              |
| 37. Reality Col                     | nfirmation: Peo                    | pple who see thin | igs the same way a | is you and helps | you to understand   | the way things ar    | e in sport.  |
|                                     | Initials of                        | Relation to       | Receive Very       | Receive a        | Receive Some        | Receive Quite        | Receive Very |
|                                     | Person                             | the Person        | Little             | Little           |                     | a Bit                | Much         |
| સં                                  |                                    |                   |                    |                  |                     |                      |              |
| þ.                                  |                                    |                   |                    |                  |                     |                      |              |
| ં                                   |                                    | ,                 |                    |                  |                     |                      |              |
| d.                                  |                                    |                   |                    |                  |                     |                      |              |
| ē.                                  |                                    |                   |                    |                  |                     |                      |              |
| f. Overall, how<br>do you receive   | much reality co<br>from others?    | ufirmation        |                    |                  |                     |                      |              |
Receive Very Receive Very 39. Personal Assistance: People who provide you with services or help. For example, helping you set up/take down equipment for Much Much 38. Tangible Assistance: People who provide you financial assistance, products, and/or gifts. For example, money for lessons or **Receive Quite Receive Quite** a Bit a Bit **Receive Some Receive Some** instruction, driving to practice and/or games, provide refreshment drinks during competition. Receive a Receive a Little Little Receive Very **Receive Very** Little Little f. Overall, how much **personal assistance** do you receive from others? Relation to Relation to the Person f. Overall, how much tangible assistance do the Person practice and collect and wash uniforms. Initials of Initials of Person Person you receive from others? റ്റ ч. പ ف ö ы. a. ပ ď.

| Identification Number:  |
|---|
| TELL US ABOUT YOUR SPORT EXPERIENCE   |
| We are interested in <u>a specific stressful experience</u> that you faced in sport during the past 12 months that involved<br>another person. We are also interested in the ways that you handled or dealt with that experience. Many adolescent   |
| <ul> <li>being hassled by teammates or opponents or when coaches yell, criticize, or pressure the athlete;</li> <li>when getting into a disagreement with a coach, parent, or teammates;</li> <li>getting a bad call from an official</li> </ul>  |
| <ul> <li>when parents yell, criticize or pressure the athlete; or</li> <li>when athletes think that they have not met the expectation of their parent, coach, or teammates.</li> <li>Take a minute and think about a time in the last year when you experienced stress in your relationships with others during sport.</li> </ul> |
| *Remember that your answers will remain private and confidential and will be seen only by the researcher*   |
| 40. Describe the most stressful experience that you have faced in sport between May 2000 and today that involved another person.  |
|   |
|   |
| 41. Why was this stressful to you?  |
|   |
|   |

| Identification Number: | interaction last? (CHECK ONE)<br>* 1 week to 1 month 1 to 3 months Aore than 3 months | raction occur? (CHECK ONE)<br>k                  | of stress that you experienced in the interaction by marking an 'X' on the scale within the thermometer:<br>Note: Most<br>s<br>ever<br>ever<br>0 20 30 40 50 60 70 80 90 100<br>S<br>I scored myself degrees of stress<br>on the stress thermometer. |  |
|------------------------|---|--|--|--|
|                        | 42. How long did the stressful interaction last? (                                    | 43. When did the stressful interaction occur? (C | 44. Please indicate the amount of stress that you No stress at all at all 0 10 20 30 40  |  |

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|   |   | Identificati   | on Number:  |  |   |
|---|---|--|---|--|---|
| <ul> <li><u>Instructions</u>: We are interested in specific thoughts and described. There are many ways people can handle strate described. There are many ways people can handle strate inding new solutions to solve a problem,</li> <li>inding new solutions to solve a problem,</li> <li>inding new solutions to solve a problem,</li> <li>inding that the situation was happening,</li> <li>inding that the situation was happening,</li> <li>inding that the situation was happening,</li> <li>inding to friends, family, or coaches, or</li> <li>inding to friends, family, or coaches, or</li> <li>inding that the situation was happening,</li> <li>inding that the situation was happening,</li> <li>inding that the situation was happening,</li> <li>inthe blank spaces provided, <u>list</u> all of the things you the only one thing per space. It does not matter if it was suct the strategy was used in general and how much it was used in general and how much it was used in the situation,</li> <li>in the strategy was used in general and how much it was used in general and how much it was used in the situation,</li> <li>in the situation,</li> </ul> | actions you<br>essful expe<br>emoving se<br>teraction ha<br>tally face<br>i did to try<br>ought abou<br>ccessful or<br>used to:<br>used to: | u used to ma<br>riences such<br>appened. We<br>d with it.<br>to deal with<br>thand did in<br>not. Next, fo | nage the stres<br>as:<br>atuation.<br><b>e want to knov</b><br><b>the stressful</b><br>trying to mana<br>trying to mana | sful experier<br>v what you o<br>interaction<br>ge the intera<br>listed, indic | did to try to<br>ction. Please lis<br>ate <u>how much</u> |
| To Manage The Stressful Interaction, I  | Not At<br>All   | A Little   | Somewhat  | Quite A<br>Bit   | Very Much   |
| <b>Example</b> : <u>I watched t.v.</u><br>(a) How much did you use this strategy?   |   |  |   |  |   |
| (b) I used this strategy to try to change the situation:  |   |  |   |  |   |
| (c) I used this strategy to manage or control my feelings:  |   |  |   |  |   |
| (d) I used this strategy to physically and/or mentally avoid the situation:   |   |  |   |  |   |

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| 45. To Manage The Stressful Interaction, I                                  | Not At All | A Little | Somewhat | Quite A Bit | Very Much |   |
|---|------------|----------|----------|-------------|-----------|---|
| (a) How much did you use this strategy?                                     |            |          |          | C           |           |   |
| (b) I used this strategy to try to change the situation:                    |            |          |          |             |           |   |
| (c) I used this strategy to control or manage my feelings:                  |            | ]        |          |             |           |   |
| (d) I used this strategy to physically and/or mentally avoid the situation: | ]          |          |          |             |           | · |
|   |            |          |          |             |           |   |
| (a) How much did you use this strategy?                                     |            |          |          |             |           |   |
| (b) I used this strategy to try to change the situation:                    |            |          |          |             |           |   |
| (c) I used this strategy to control or manage my feelings:                  |            |          |          |             |           |   |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |          |          |             |           |   |
|   |            |          |          |             |           |   |
| (a) How much did you use this strategy?                                     |            |          |          |             |           |   |
| (b) I used this strategy to try to change the situation:                    |            |          |          |             |           |   |
| (c) I used this strategy to control or manage my feelings:                  |            |          |          |             | Ļ         |   |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |          |          |             |           |   |

|   |            | Identifica | tion Number: |             |           |  |
|---|------------|------------|--------------|-------------|-----------|--|
| To Manage the Stressful Interaction, I                                      | Not At All | A Little   | Somewhat     | Quite A Bit | Very Much |  |
| (a) II much did mun mea this stratam?                                       |            |            |              |             |           |  |
| (a) How much and you use this suarcely?                                     |            |            |              |             |           |  |
| (b) I used this strategy to try to change the situation:                    |            |            |              |             |           |  |
| (c) I used this strategy to manage or control my feelings:                  |            |            |              |             |           |  |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |            |              |             |           |  |
|   |            |            |              |             |           |  |
| (a) How much did you use this strategy?                                     |            |            |              |             |           |  |
| (b) I used this strategy to try to change the situation:                    |            |            |              |             |           |  |
| (c) I used this strategy to manage or control my feelings:                  |            |            |              |             |           |  |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |            |              |             |           |  |
|   |            |            |              |             |           |  |
| (a) How much did you use this strategy?                                     |            |            |              |             |           |  |
| (b) I used this strategy to try to change the situation:                    |            |            |              |             |           |  |
| (c) I used this strategy to manage or control my feelings:                  |            |            |              |             |           |  |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |            |              |             |           |  |
|   |            |            |              |             |           |  |

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|   |            | Identifica | tion Number: |             |           | • |
|---|------------|------------|--------------|-------------|-----------|---|
| To Manage the Stressful Interaction, I                                      | Not At All | A Little   | Somewhat     | Quite A Bit | Very Much |   |
|   |            |            |              |             |           |   |
| (a) How much did you use this strategy?                                     | ٢          |            |              |             |           |   |
| (1) I word this strategy to the change the citization:                      |            | ]          |              |             | ]         |   |
| (D) I used uns suaredy to up to change are summon.                          |            |            |              |             |           |   |
| (c) I used this strategy to manage or control my feelings:                  |            |            |              |             |           |   |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |            |              |             |           |   |
|   |            |            |              |             |           |   |
| (a) How much did you use this strategy?                                     |            |            |              |             |           |   |
| (b) I used this strategy to try to change the situation:                    |            |            |              |             |           |   |
| (c) I used this strateov to manage or control my feelings:                  |            |            |              |             |           |   |
|   | Γ          |            |              |             |           |   |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            | ]          | ]            | ]           |           |   |
|   |            |            |              |             |           |   |
| (a) How much did you use this strategy?                                     |            |            |              |             |           |   |
| (b) I used this strategy to try to change the situation:                    |            |            |              |             |           |   |
| (c) I used this strategy to manage or control my feelings:                  |            |            |              |             |           |   |
| (d) I used this strategy to physically and/or mentally                      |            |            |              |             |           |   |
| avoid the situation:  |            |            |              |             |           | _ |

| Identification Number:   |                         |
|--|-------------------------|
| TELL US ABOUT YOURSELF   |                         |
| Instructions:  |                         |
| We are interested in learning your background. Please follow the directions carefully, and answer ALL of                               | - ALL of the questions. |
| *Remember that your answers will remain private and confidential and will be seen only by the  | y by the researcher*    |
| 46. Are you female or male? (CHECK ONE)  |                         |
| 47. How old are you ? years  |                         |
| 48. What is your father's (stepfather's or male guardian's) job?<br>(DESCRIBE THE KIND OF WORK HE DOES. PLEASE BE <b>SPECIFIC</b> )    |                         |
|  |                         |
| 49. What is your mother's (stepmother's or female guardian's) job?<br>(DESCRIBE THE KIND OF WORK SHE DOES. PLEASE BE <b>SPECIFIC</b> ) |                         |
|  |                         |

50. How do you describe yourself in terms of your ethnic origin (PLEASE CHECK ALL THAT APPLY)



Thank you for your participation!

## Appendix D

Parent and Athlete Consent Form for Main Study

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## Appendix E

Measures Used in Preliminary and Main Study

UBC

THANK YOU FOR AGREEING TO PARTICIPATE IN THIS UBC RESEARCH PROJECT!

about people who you are in contact with, as well as a stressful time in sport and what you did during that time. Pages 17to write a short statement. Other questions can be completed similar to that of a magazine survey, by choosing from a set 18 include a set of questions that tells us more about you and your background. Some of these questions will require you This package contains eighteen pages in total, including this cover page. There are seventeen pages that you will be required to fill out in order to complete this package. Pages 2-16 includes questions about your thoughts and feelings of responses or by filling in some blanks. For example you might be asked about the following statement:

|                | I watch television | l read a magazine | I hang out with my friends | Note: |
|----------------|--------------------|-------------------|----------------------------|-------|
| Not At<br>All  |                    |                   |                            |       |
| A Little       |                    |                   |                            |       |
| Somewhat       |                    |                   |                            |       |
| Quite A<br>Bit |                    |                   |                            |       |
| Very Much      |                    |                   |                            |       |
|                |                    |                   |                            |       |

You can mark the square by either marking with a check (✓), a cross (), or filling it in (■).

Only select **ONE** square when answering the question.

If you do not understand a question, please ask one of us for help.

We need to be sure that we put all of YOUR answers together and not put your answers with somebody else's. To do this, we will need to assign you an identification number that is located in the top right corner page. Your name will NOT be kept with your answers. All of your responses will remain confidential. No persons other than the members of the Please DO NOT skip any questions. Answer each question as best as you can. \*\* This is very important \*\*

research team will have access to your responses.

There are no "right" or "wrong" answers. Be as honest and as accurate as you can in answering each question.

Identification Number: TELL US ABOUT YOUR SOCIAL RELATIONSHIPS

## Instructions:

Read each question carefully and then indicate your response for the following items by marking the corresponding square with either a check  $(\checkmark)$ , a cross  $(\varkappa)$ , or by filling it in (

| Never                    | out by their friends, but others do not. Do | iked by their friends, but other kids are | d on and teased by their friends, but other<br>et picked on and eased by your friends? | ids who make fun of them, but other kids<br>s make fun of you? | nds who like to hear their ideas, but other<br>riends like to hear your ideas? | nds who do a lot of things for them, but<br>you and your friends do a lot of things for | close to their friends, but other kids do not. | on their friends for help or advice when<br>it other kids cannot. Can you count on<br>r advice when you have problems? |
|--------------------------|---|---|--|--|--|---|--|--|
| Hardly Sometimes<br>Ever |   |   |  |  |  |   |  |  |
| Most of<br>the Time      |   |   |  |  |  |   |  |  |
| Always                   |   |   |  |  |  |   |  |  |

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|  | Never | Hardly<br>Ever | Sometimes | Most.of<br>the Time | Always |
|--|-------|----------------|-----------|---------------------|--------|
| 9. Some kids have friends who care about them, but other<br>kids do not. Do you think that your friends care about<br>you?   |       |                |           |                     |        |
| 10. Some kids have friends who make them feel bad, but<br>other kids do not. Do your friends make you feel bad?  |       |                |           |                     |        |
| 11. Some kids can count on their family for help or advice<br>when they have problems, but other kids cannot. Can<br>you count on your family for help and advice when you<br>have problems? |       |                |           |                     |        |
| 12. Some kids have a family who do a lot of things for each<br>other, but other kids do not. Do you and your family do<br>a lot of things for each other?                                    |       |                |           |                     |        |
| 13. Some kids have a family who makes them feel bad, but<br>other kids do not. Does your family make you feel bad?   |       |                |           |                     |        |
| 14. Some kids share a lot with their family, but other kids do<br>not. Do you share a lot with your family?  |       |                |           |                     |        |
| 15. Some kids have a hard time talking to their family, but<br>other kids do not. Do you have a hard time talking to<br>your family?   |       |                |           |                     |        |
| 16. Some kids have a family who is never there when they<br>need them, but other kids do. Do you feel like your<br>family is never there when you need them?                                 |       |                |           |                     |        |

| ne kids feel left out hv their snort team hut ather  | me kids think that their coaches care about them, but<br>ner kids do not. Do you think that your coaches care  | he kids think that their coaches care about them, but<br>er kids do not. Do you think that your coaches care  | ne kids think that their coaches care about them, but<br>er kids do not. Do you think that your coaches care<br>out you?   | Some kids feel left out by their family, but other kids do<br>not. Do you feel left out by your family?<br>Some kids have a family that listens to their ideas, but<br>other kids do not. Does your family listen to your ideas?<br>Some kids are an important member of their family, but<br>other kids are not. Are you an important member of<br>your family?<br>Some kids think that their family cares about<br>tother kids do not. Do you think your family cares about<br>you?<br>Some kids feel that they don't belong in their family, but<br>other kids do. Do you feel like you <i>don't</i> belong in your<br>family?<br>Some kids feel that they don't belong on their sport<br>family?<br>Some kids feel that they don't belong on their sport<br>family?<br>Some kids feel that they don't belong on their sport<br>feam, but other kids do. Do you feel like you <i>don't</i><br>belong on your sport team?<br>Some kids feel left out by your sport team? |       |     |   |   |                     |
|--|--|---|--|--|-------|-----|---|---|---------------------|
| Do you feel left out by your family?       Image: Construction of the constructin of the constructin of the construction of the construction of th   | Do you feel left out by your family?       Image: Sour family?       Image: Sour family?         kids have a family that filters to their family, but       Image: Sour family listen to your ideas?       Image: Sour family listen to your ideas?         kids are an important member of their family, but       Image: Sour family listen to your ideas?       Image: Sour family listen to your ideas?         kids are an important member of family?       Image: Sour family listen to family listen to family?       Image: Sour family cares about them, but       Image: Sour family cares about them, but         kids do not. Do you think your family cares about them, but       Image: Sour family cares       <  | Do you feel left out by your family?       Image: Construct the construction of the co  | Do you feel left out by your family?       Image: Comparison of their family?       Image: Comparison of their family.         kids have a family that family hat the stand of their family.       Image: Comparison of their family.       Image: Comparison of their family.         kids are an important member of family.       Image: Comparison of their family.       Image: Comparison of their family.       Image: Comparison of family.         kids far in the state their family cares about them, but kids do not. Do you think your family.       Image: Comparison of family.       Image: Comparison of family.         kids feel that they don't belong in their family.       Image: Comparison of family.       Image: Comparison of family.       Image: Comparison of family.         vids feel that they don't belong in your vides feel that they don't belong in your vides feel that they don't belong on their sport tam?       Image: Comparison vides for the sport tam?       Image: Comparison vides for the sport tam?         vids feel that their conches care about them.       Image: Comparison vides for the sport tam?       Image: Comparison vides for the sport tam?       Image: Comparison vides for the sport tam?         vids feel that their conches care about them.       Image: Comparison vides for the vides for vides for vides for the vides for the vides   | kids feel left out by their family. but other kids do  |       |     |   |   |                     |
| Do you feel left out by your family?       Image: Comparison of the comparison o   | Do you feel left out by your family?   | Do you feel left out by your family?       Image: Ima  | Do you feel left out by your family?       Image: Comparison of their ideasy but are kids do not. Does your family listen to your ideas?       Image: Comparison of their ideasy but are kids are an important member of their family, but are kids are not. Are you an important member of their family.       Image: Comparison of their family.         are kids are an important member of their family.       Image: Comparison of their family.       Image: Comparison of their family.         are kids are not. Are you an important member of tamily.       Image: Comparison of their family.       Image: Comparison of their family.         are kids aftink that their family cares about them, but are kids feel that they don't belong in their family.       Image: Comparison of their sport are kids feel that they don't belong in your are kids feel that they don't belong on their sport are kids feel that they don't belong on their sport are hids feel that they don't belong on their sport are hids feel that they don't belong on their sport are but them.       Image: Comparison are but them.         are kids feel that they don't belong on their sport are but other kids do. Do you feel like you don't belong on their sport are but other with their sport team.       Image: Comparison are but them.         are kids feel that their coaches care about them.       Image: Comparison are but them.       Image: Comparison are but them.         are kids feel that their sport team?       Image: Comparison are but them.       Image: Comparison are but them.       Image: Comparison are but them.         are kids feel that they don't belong on their sport team?       Image: Comparison are but the  | it was teel tell out by their tamily, but utilly have a  | ]     |     |   |   |                     |
| ne kids have a family that listens to their ideas, but<br>er kids do not. Does your family listen to your ideas?<br>ne kids are an important member of<br>the kids are not. Are you an important member of<br>the fids are not. Are you an important member of<br>the kids think that their family cares about them, but<br>er kids do not. Do you think your family vares about<br>the kids feel that they don't belong in your<br>me kids feel that they don't belong in your<br>injy?<br>ne kids feel that they don't belong on their sport<br>me kids feel that they don't belong on their sport<br>me kids feel that they don't belong on their sport<br>me hut other kids do. Do you feel like you <i>don't</i>  | in kids have a family that listens to their ideas, but<br>er kids do not. Does your family listen to your ideas?<br>In kids are an important member of their family, but<br>er kids are not. Are you an important member of<br>r family?<br>In family?<br>In family?<br>In family?<br>In family series about them, but<br>er kids do not. Do you think your family, but<br>er kids do not. Do you the like you <i>don't</i> belong in your<br>in your sport team, but other<br>in but other kids do. Do you feel like you <i>don't</i> belong in your<br>in but other kids do. Do you teel like you <i>don't</i><br>me kids feel that they don't belong in your<br>in but other kids do. Do you teel like you <i>don't</i><br>me kids feel left out by your sport team, but other<br>is do not. Do you feel like your coaches care about them, but<br>er kids do not. Do you the left out by your coaches care about them, but<br>er kids do not. Do you the left out by your coaches care   | ine kids have a family that listens to their ideas, but<br>er kids do not. Does your family listen to your ideas?<br>In kids are an important member of their family, but<br>er kids are not. Are you an important member of<br>tr family?<br>In family?<br>In kids are not. Do you think your family cares about them, but<br>er kids do not. Do you think your family cares about<br>family?<br>In kids do not. Do you feel like you <i>don</i> 't belong in your<br>ily?<br>In kids feel that they don't belong in your<br>ily?<br>In but other kids do. Do you feel like you <i>don</i> 't belong in your<br>ily?<br>In but other kids do. Do you feel like you <i>don</i> 't belong in your<br>ily?<br>In but other kids do. Do you feel like you <i>don</i> 't belong in your<br>ily?<br>In but other kids do. Do you feel like you <i>don</i> 't belong in your<br>ily?  | in kids have a family that listens to their ideas? but the kids are an important member of their family, but the kids are an important member of their family, but the kids are not. Are you an important member of their family, but the kids are not. Are you an important member of their family, but the kids are not. Are you an important member of their family but the kids are not. Are you an important member of their family, but the kids are not. Are you an important member of their family but the kids do not. Do you think your family cares about them, but the kids do not. Do you think your family cares about the mily is the kids do not. Do you think your family our holds feel that they don't belong in your not belong in your not belong on their sport tam. but other kids do not. Do you feel like you don't is not to you feel like you don't is not other and the kids feel that their sport team, but other family is a do not. Do you feel like your coaches care about them, but other kids do not. Do you think that your coaches care about the but the sport team. but other wids do not. Do you think that your coaches care about the but the sport team. but other wids do not. Do you the left out by your sport team is not of the sport team. but other wids do not. Do you the left out by your sport team. but other wids do not. Do you the left out by your sport team. but other wids do not. Do you the left out by your sport team. but other wids do not. Do you think that your coaches care about the but the sport team. but other wids do not. Do you think that your coaches care about the but th | t. Do you feel left out by your family?  |       | [   | [ |   |                     |
| me kids have a family that listens to their ideas, but       Image kids have a family that listens to their ideas?         ter kids do not. Does your family listen to your ideas?       Image kids are an important member of their family, but         me kids are an important member of their family, but       Image kids are not. Are you an important member of         me kids are not. Are you an important member of       Image kids are not. Are you an important member of         me kids think that their family cares about them, but       Image kids do not. Do you think your family cares about         me kids do. Do you feel like you don't belong in your       Image kids do. Do you feel like you don't         me kids feel that they don't belong in your       Image kids feel that they don't belong in your         mily?       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|---------------------|--|---|--|---|--|---|---|
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| Hardly<br>Ever      |  |   |  |   |  |   |   |
| Sometimes           |  |   |  |   |  |   |   |
| Most of<br>the Time |  |   |  |   |  |   |   |
| Always              |  |   |  |   |  |   |   |



| problem.         problem.         problem.         Initials of<br>Person       Relation to<br>Person       Relation to<br>Receive         Person       Nery Little       Receive         Person       Very Little       Receive         Dr       LC       Some       Quite a Bit         d.       Dr       Little       Some       Very Muc         d.       Dr       L       Coach       L       L         d.       Dr       L       Coach       Very Little       Nery Little         d.       Dr       L       Coach       Very Little       Nery Muc         d.       Dr       L       Coach       Very Muc       Nery Muc         d.       Dr       L       Coach       Very Muc       Nery Muc         d.       Dr       L       Dr       L       Nery Muc         d.       Dr       L       Dr       L       Nery Muc         d.       Dr       L       Dr       L       Nery Muc         d.       Dr       Dr       L       Dr       Nery Muc         d.       Dr       Dr       Dr       Dr       Nery Muc         D   | <ul> <li>Read</li> <li< th=""><th>the category of<br/>ve you advice (<br/>all those peopl<br/>type of relations<br/>ir, friend, best fi<br/><b>t know of any</b><br/>r each person v<br/>a check <math>(\vee)</math>, a c<br/>want to know  </th><th>f help that other<br/>or guidance cor<br/>le you know tha<br/>ship you have w<br/>riend, teammatu<br/>one who could<br/>who is listed ind<br/>cross (X), or by<br/>how much hell<br/>e who provide</th><th>s can provide.<br/>it provide you, c<br/>it that person<br/>e, or coach.<br/>I or does provi<br/>licate <u>how muc</u><br/>filling it in (<u></u>)<br/>p you are actu</th><th>ile solutions to<br/>br could provide<br/>For example,<br/><b>ide you with tl</b><br/>We are NOT (<br/><b>ally receiving</b></th><th>a problem. In t<br/>e you with that<br/>e you with that<br/>the person ma<br/>the person ma<br/>ne specific ty<br/>ally receive by<br/>concerned with<br/>from others r</th><th>pport is neip tr<br/>he empty spac<br/>type of help. I<br/>iy be your mott<br/><b>y be of help, list</b><br/><b>be of help, list</b><br/>in the amount of<br/><b>iow.</b><br/>possible solu</th><th>at others prov<br/>es provided, fi<br/>Beside the initi<br/>her, father, rel<br/><b>"no one" *</b>.<br/>orresponding<br/>help that you<br/><b>tions to a</b></th></li<></ul> | the category of<br>ve you advice (<br>all those peopl<br>type of relations<br>ir, friend, best fi<br><b>t know of any</b><br>r each person v<br>a check $(\vee)$ , a c<br>want to know | f help that other<br>or guidance cor<br>le you know tha<br>ship you have w<br>riend, teammatu<br>one who could<br>who is listed ind<br>cross (X), or by<br>how much hell<br>e who provide | s can provide.<br>it provide you, c<br>it that person<br>e, or coach.<br>I or does provi<br>licate <u>how muc</u><br>filling it in ( <u></u> )<br>p you are actu | ile solutions to<br>br could provide<br>For example,<br><b>ide you with tl</b><br>We are NOT (<br><b>ally receiving</b> | a problem. In t<br>e you with that<br>e you with that<br>the person ma<br>the person ma<br>ne specific ty<br>ally receive by<br>concerned with<br>from others r | pport is neip tr<br>he empty spac<br>type of help. I<br>iy be your mott<br><b>y be of help, list</b><br><b>be of help, list</b><br>in the amount of<br><b>iow.</b><br>possible solu | at others prov<br>es provided, fi<br>Beside the initi<br>her, father, rel<br><b>"no one" *</b> .<br>orresponding<br>help that you<br><b>tions to a</b>   |
|---|---|--|---|--|---|---|---|--|
| d       c       berson       the Person         d       d       Lt He Person       KH       MMK         Quite Best Friend       Coach       Coach       Chifte         DF       Coach       Coach       Coach       Coach         DF       Teammate       Coach       Coach       Coach       Coach         I       Teammate       Coach       Coach       Chifte       Coach       Coach         I       Teammate       Coach       Coach       Coach       Coach       Coach       Coach         I       Teammate       Co       D       Coach       Coach <td< th=""><th>ormation S</th><th>Support: People<br/>proble<br/>nitials of</th><th>e who provide<br/>em.<br/>Relation to</th><th>you with advi<br/>Receive</th><th>ce or guidanc<br/>Receive a</th><th>e concerning<br/>Receive</th><th>possible solu<br/>Receive</th><th>and a second sec</th></td<> | ormation S  | Support: People<br>proble<br>nitials of  | e who provide<br>em.<br>Relation to   | you with advi<br>Receive   | ce or guidanc<br>Receive a  | e concerning<br>Receive   | possible solu<br>Receive  | and a second sec |
| of of of of   of of of of   of of of of   of of of of   of of of of   of of of of   of of of of   of of of of   of of of of   of of of of   of of o   |   | Person   | the Person  | Very Little  | Little  | Some  | Quite a Bit   | Very   |
| designed by the second   | ່ຫ  | MK   | Mom   |  |   |   |   |  |
| Get Lieud<br>Get Composition<br>Get Composit  | þ.  | Ľ  | Coach   |  |   |   |   |  |
| d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d<br>d   | Ċ   | KL   | Best Friend   |  |   |   |   |  |
|   | Ч   | DF   | Teammate  |  |   |   |   |  |
|   |   |  |   |  |   |   |   |  |

i. Overall, how much information support do you receive from others?

Identification Number:

<u>Instructions</u>: Below you will find questions asking about your thoughts about the people you interact with. Take a minute to think about all the people in your life inside and outside of sport (such as your parents, friends, teachers, coaches, and

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| 32. Informatio                    | n Support: Peo                                      | ple who provide           | you with advice        | or guidance con     | ncerning possibl | e solutions to a l     | problem.             |
|-----------------------------------|---|---------------------------|------------------------|---------------------|------------------|------------------------|----------------------|
|                                   | Initials of<br>Person                               | Relation to<br>the Person | Receive Very<br>Little | Receive a<br>Little | Receive<br>Some  | Receive<br>Quite a Bit | Receive Very<br>Much |
| . 5                               |   |                           |                        |                     |                  |                        |                      |
| Ö                                 |   |                           |                        |                     |                  |                        |                      |
| స                                 |   |                           |                        |                     |                  |                        |                      |
| q                                 |   |                           |                        |                     |                  |                        |                      |
| ن                                 |   |                           |                        |                     |                  |                        |                      |
| f.                                |   |                           |                        |                     |                  |                        |                      |
| ත්                                |   |                           |                        |                     |                  |                        |                      |
| h.                                |   |                           |                        |                     |                  |                        |                      |
| i. Overall, how<br>do you receive | much <b>informat</b> i<br>from oth <del>e</del> rs? | ion support               |                        |                     |                  |                        |                      |

Identification Number:\_\_\_\_\_

| 34. Esteem Su<br>you positive fe   | <b>pport</b> : People w<br>edback, complin | ho bolster or en<br>nent your ability | hance your sense<br>, and publicly rec | of your own spo<br>ognize your eff | ort ability. For e<br>orts. | xample, these pe       | cople give           |
|------------------------------------|--|---------------------------------------|--|------------------------------------|-----------------------------|------------------------|----------------------|
|                                    | Initials of<br>Person                      | Relation to<br>the Person             | Receive Very<br>Little                 | Receive a<br>Little                | Receive<br>Some             | Receive<br>Quite a Bit | Receive Very<br>Much |
| . s                                |  |                                       |  |                                    |                             |                        |                      |
| e                                  |  |                                       |  |                                    |                             |                        |                      |
| ່ວ                                 |  |                                       |  |                                    |                             |                        |                      |
| q                                  |  |                                       |  |                                    |                             |                        |                      |
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| ,<br>f                             |  |                                       |  |                                    |                             |                        |                      |
| à                                  |  |                                       |  |                                    |                             |                        |                      |
| ų                                  |  |                                       |  |                                    |                             |                        |                      |
| i. Overall, how<br>receive from ot | / much esteem su<br>thers?                 | upport do you                         |  |                                    |                             |                        |                      |

| ble Support: People who share resources w<br>provide money, physically hel | Initials ofRelation toReceiPersonthe PersonL | <br> | <br>d. | <u>ن</u> | f | 50 | h. | , how much tangible support do |
|--|--|------|--------|----------|---|----|----|--------------------------------|
| vith you to help you ma<br>Ip with tasks, drive you                        | ive Very Receive a Little                    |      |        |          |   |    |    |                                |
| inage difficult situa<br>t to practice and ga                              | Receive                                      |      |        |          |   |    |    |                                |
| ttions. For exam)<br>mes, and talk to                                      | Receive<br>Quite a Bit                       |      |        |          |   |    |    |                                |
| ple, loan or<br>others for you   | Receive Very<br>Much                         |      |        |          |   |    |    |                                |

| Identification Number:<br>TELL US ABOUT YOUR SPORT EXPERIENCE<br>Ceffic stressful experience that you faced in sport during the past 12 months that involved<br>so interested in the ways that you handled or dealt with that experience. Many adolescent<br>stress when:<br>y teammates or opponents or when coaches yell, criticize, or pressure the athlete;<br>o a disagreement with a coach, parent, or teammates;<br>Il from an official | ain private and confidential and will be seen only by the researcher<br>ou have faced in sport in the last year that involved another person. |
|--|---|
|--|---|

| tification Number: | months More than 3 months  | e than 1 month ago,  More than 3 months ago<br>but less than but less than<br>3 month ago 12 months ago | y marking an 'X' on the scale within the thermometer:<br>I scored myself degrees of stress<br>on the stress thermometer. | IRUCTION                           |
|--------------------|--|---|--|------------------------------------|
| Iden               | E)<br>th [] 1 to 3   | )<br>cek ago, 🔲 More<br>han<br>go   | in the interaction b<br>Most<br>stress<br>ever   | 80 90 100<br>STOP<br>R FURTHER INS |
|                    | sraction last? (CHECK ON   | ion occur? (CHECK ONE) Dure than 1 we but less th 1 month ag  | stress that you experienced  | 20 30 40 50 60 70                  |
|                    | <ul><li>38. How long did the stressful inte</li><li>I Less than 1 week</li></ul> | <ul><li>39. When did the stressful interact</li><li>In the past week</li></ul>                          | 40. Please indicate the amount of s<br>No stress<br>at all   |                                    |

|  |   | <u>Identificat</u>   | ion Number:   |  |                          |
|--|---|--|---|--|--------------------------|
| <ul> <li>Instructions: We are interested in specific thoughts and described. There are many ways people can handle stronting indication are solutions to solve a problem,</li> <li>finding new solutions to solve a problem,</li> <li>accepting that the situation was happening,</li> <li>talking to friends, family, or coaches, or</li> <li>daydreaming, venting negative emotions, or r</li> <li>daydreaming, the streasful interaction when you did before the int</li> <li>manage the stressful interaction when you actually</li> <li>In the blank spaces provided, <u>list</u> all of the things you th</li> <li>only one thing per space. It does not matter if it was suct the strategy was used in general and how much it was uter the strategy was used in general and how much it was used in general and how much it was used in the struation,</li> <li>(b) make you feel better about the situation, and</li> <li>(c) physically and/or mentally avoid of the situation,</li> </ul> | actions you<br>essful expe<br>emoving se<br>eraction ha<br>ually face<br>did to try<br>ought abou<br>cessful or<br>used to: | u used to ma<br>elf from the a<br>appened. W<br>d with it.<br>to deal wit<br>not. Next, fo | anage the stres<br>h as:<br>situation.<br><b>e want to knov</b><br><b>h the stressfu</b><br>trying to mana<br>r each strategy | sful experier<br>v what you<br>interaction<br>ge the intera<br>listed, indic | nce you<br>did to try to |
| To Manage The Stressful Interaction, I   | Not At<br>All   | A Little   | Somewhat  | Quite A<br>Bit   | Very Much                |
| <b>Example</b> : <u>I watched t.v.</u><br>(a) How much did you use this strategy?  |   |  |   |  |                          |
| (b) I used this strategy to try to change the situation:   |   |  |   |  |                          |
| (c) I used this strategy to manage or control my feelings:   |   |  |   |  |                          |
| (d) I used this strategy to physically and/or mentally avoid the situation:  |   |  |   |  |                          |

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|   |            | Identificat | ion Number: |             |           |
|---|------------|-------------|-------------|-------------|-----------|
| 41. To Manage The Stressful Interaction, I                                  | Not At All | A Little    | Somewhat    | Quite A Bit | Very Much |
|   |            |             |             |             |           |
| (a) How much did you use this strategy?                                     |            |             |             |             |           |
| (b) I used this strategy to try to change the situation:                    | ] [        |             | ]           |             | ]         |
| (c) I used this strategy to control or manage my feelings:                  |            | ]           | ]           |             | ]         |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |             |             |             |           |
|   |            |             |             |             |           |
| (a) How much did you use this strategy?                                     |            |             |             |             |           |
| (b) I used this strategy to try to change the situation:                    |            |             |             |             |           |
| (c) I used this strategy to control or manage my feelings:                  |            |             |             |             |           |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |             |             |             |           |
|   |            |             |             |             |           |
| (a) How much did you use this strategy?                                     |            |             |             |             |           |
| (b) I used this strategy to try to change the situation:                    |            |             |             |             |           |
| (c) I used this strategy to control or manage my feelings:                  |            |             |             |             |           |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |             |             |             |           |

|   |            | Identificat | tion Number: |             |           |  |
|---|------------|-------------|--------------|-------------|-----------|--|
| To Manage the Stressful Interaction, I                                      | Not At All | A Little    | Somewhat     | Quite A Bit | Very Much |  |
|   |            |             |              |             |           |  |
| (a) How much did you use this strategy?                                     |            |             |              |             |           |  |
| (b) I used this strategy to try to change the situation:                    |            |             |              |             |           |  |
| (c) I used this strategy to manage or control my feelings:                  | ]          |             |              |             |           |  |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |             |              |             |           |  |
|   |            |             |              |             |           |  |
| (a) How much did you use this strategy?                                     |            |             |              |             |           |  |
| (b) I used this strategy to try to change the situation:                    |            |             |              |             |           |  |
| (c) I used this strategy to manage or control my feelings:                  |            |             |              |             |           |  |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |             |              |             |           |  |
|   |            |             |              |             |           |  |
| (a) How much did you use this strategy?                                     |            |             |              |             |           |  |
| (b) I used this strategy to try to change the situation:                    |            |             |              |             |           |  |
| (c) I used this strategy to manage or control my feelings:                  |            |             |              |             |           |  |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |             |              |             |           |  |

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|   |            | Identifica | tion Number: |             |           |
|---|------------|------------|--------------|-------------|-----------|
| To Manage the Stressful Interaction, I                                      | Not At All | A Little   | Somewhat     | Quite A Bit | Very Much |
| (a) How much did you use this strategy?                                     | [          | . [        | ]            | ]           | [         |
| (b) I used this strategy to try to change the situation:                    |            |            |              |             |           |
|   |            |            |              |             |           |
| (c) I used this strategy to manage of control my reelings:                  |            |            |              |             |           |
| (d) I used this strategy to physically and/or mentally avoid the situation: | `          |            |              |             |           |
|   |            |            |              |             |           |
| (a) How much did you use this strategy?                                     |            |            |              |             |           |
| (b) I used this strategy to try to change the situation:                    |            |            |              |             |           |
| (c) I used this strategy to manage or control my feelings:                  |            |            |              |             |           |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |            |              |             | Ò         |
|   |            |            |              |             |           |
| (a) How much did you use this strategy?                                     |            |            |              |             |           |
| (b) I used this strategy to try to change the situation:                    |            |            |              |             |           |
| (c) I used this strategy to manage or control my feelings:                  |            |            |              |             |           |
| (d) I used this strategy to physically and/or mentally avoid the situation: |            |            |              | L           |           |

| 45. What is your mother's (stepmother's or female guardian's) job?<br>(DESCRIBE THE KIND OF WORK SHE DOES. PLEASE BE <b>SPECIFIC</b> ) |
|--|
|  |

46. How do you describe yourself in terms of your ethnic origin (PLEASE CHECK ALL THAT APPLY)

| Polish<br>French<br>Dutch<br>Scottish<br>Jewish<br>Japanese   |   |
|---|---|
| <ul> <li>East Indian</li> <li>German</li> <li>Persian</li> <li>British</li> <li>Hispanic</li> <li>Portuguese</li> <li>Vietnamese</li> </ul> | oup(s), please specify:<br>ic or cultural group                   |
| <ul> <li>Chinese</li> <li>Native/Aboriginal</li> <li>Italian</li> <li>Korean</li> <li>Greek</li> <li>Irish</li> <li>Australian</li> </ul>   | Other ethnic or cultural gr<br><i>I do not belong to an ethni</i> |

Thank you for your participation!