

COPING WITH INTERPERSONAL SPORT STRESS BY FEMALE
ADOLESCENT SOCCER PLAYERS: THE ROLE OF PERCEIVED SOCIAL
SUPPORT, COGNITIVE APPRAISAL, AND TRAIT SOCIAL ANXIETY.

By

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B.Ed (Kinesiology), McGill University, 2004

A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

(Human Kinetics)

THE UNIVERSITY OF BRITISH COLUMBIA

December 2007

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Abstract

Stress in sport is complex and can lead to a number of undesirable consequences such as burnout, performance difficulties, interpersonal problems, and injury. Lazarus's (1991, 1999) Cognitive-Motivational-Relational model holds that stress is best understood as a transactional relationship between a person and their environment. Stress is a process which is influenced by appraisals and coping. Appraisals are influenced by personal factors as well as environmental demands and the availability of external resources. Coping involves constantly changing cognitive and behavioral efforts to manage the perceived external and internal demands of a stressful situation (Lazarus & Folkman, 1984).

The present study examined how appraisal processes mediated (or were possibly moderated by) the effects of social anxiety and perceptions of teammate social support on how high school female soccer players thought they would cope with a hypothetical interpersonal stressor. The study also examined simple relationships among variables. The participants were 181 female high school soccer players from Greater Vancouver. The athletes first completed two questionnaires designed to measure social anxiety (Interaction Anxiousness Scale; Leary, 1983a) and perceived social support from teammates (modified Social Provisions Scale; Weiss, 1974). After reading the scenario, the athletes indicated their appraisal of threat and challenge (Stress Appraisal Measure; Peacock & Wong, 1990) and how they thought they would cope (Coping Functions Questionnaire; Kowalski & Crocker, 2001).

The initial findings indicated that challenge appraisals were moderately correlated with both emotion-focused ($r = .41$) and problem-focused coping ($r = .51$), whereas threat

had a weak association with avoidance coping ($r = .19$). Using mediation analysis, the results indicated that challenge fully mediated the relationship between social support and emotion-focused coping, and partially mediated the relationship between social support and problem-focused coping. Threat appraisals mediated the relationship between social anxiety and avoidance coping. Contrary to hypotheses, there was no evidence that social anxiety or threat were related to emotion-focused coping. There was also no support that person variables (social anxiety, social support) moderated the effects of appraisal on coping. The findings suggest that challenge appraisals and social support were key predictors of coping with interpersonal stress in this population.

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Acknowledgements

This process would not have been possible without the help of many people. First and foremost, I would like to thank all of the principals, coaches, and athletes from the participating schools. Without your participation, I would not have been able to complete this project.

I would also like to thank my advisor Peter whose seemingly endless advice helped me become a better writer, researcher and student. The challenging questions, encouragement and opportunities helped to guide me through this degree and reach the end.

Carolyn and Val from the lab deserve acknowledgement too. Those pow-wow-door-closed sessions were awesome, and they will be greatly missed. I owe a huge thanks to Val in particular, for answering never ending questions about stats, Lazarus, how to write, what to say, and everything in between. I could not have finished without your help.

I also owe a huge thanks to my friends and family who have been supportive and encouraging throughout this process; and Corb, for being there when I needed it the most

1 CHAPTER 1: REVIEW OF LITERATURE

1.1 Introduction

Competitive sport can create stress and various emotional states in athletes across the lifespan (Crocker, Hoar, McDonough, Kowalski, & Niefer, 2004; Crocker, Kowalski, Hoar, & McDonough, 2004; Lazarus, 2000; Smith, 1986). Stress related experiences can influence motivation, performance, social relationships, and emotion in youth sport settings (Gould, Udry, Tuffey, & Loehr, 1996; Hadd & Crocker, 2007; Weiss & Williams, 2004). Some researchers have argued that understanding the stress process can help practitioners develop better athletic environments as well as training programs to help athletes perform better, foster interpersonal relationships, as well as improve the general emotional experience of sport for youth athletes (e.g., Crocker, Hoar et al., 2004).

But what is stress in sport? Although there are various conceptualizations, there is a general consensus that stress is best captured as a transaction between the person and the environment (Lazarus, 2000). Stress can be defined as a relationship between a person and their environment that is appraised as taxing or exceeding the resources of the person and endangers his/her well-being (Lazarus, 1991; 2000). A dominant model in the sport and exercise literature that reflects this transactional perspective is Lazarus's (1991, 1999) Cognitive Motivational Relational theory of stress, coping, and emotion. This model holds that individuals evaluate (cognitive) any person-environment transaction (relational) in terms of personal goals and values (motivational). Lazarus (1991; 2000) argued that an athlete would evaluate a particular transaction in terms of what was at stake (personal goals) and also evaluate what could be done (coping options)

to manage the demands. Thus cognitive appraisal and coping are key mechanisms in the stress process.

Many researchers have examined the stress process in youth athletes (see Crocker, Hoar, et al., 2004; Hoar, Kowalski, Gaudreau, & Crocker, 2006; for reviews); yet our understanding of stress, coping, and emotion in youth sport is still very limited. One of the reasons for this level of understanding is that the process is very complex. First, there are various types of stressors in sport including psychological concerns, physical concerns, environmental concerns, social concerns, and career concerns (Kowalski, 2007). Within each of these general dimensions there are various facets that also vary across sports. Second, person and situational factors that can influence the cognitive appraisal process vary across sporting situations and individuals within the sport. This will lead to large differences between individuals in the stress process. The way one person appraises a situation will differ from the next, and their subsequent use of coping strategies may also differ. There are many factors that account for these differences including personality, individual goals, personal and social resources, and coping skills. Lazarus (1991, 2000) argued that it is important to explore individual differences rather than establish normative patterns of stress and coping.

A key to understanding how individuals evaluate and cope with sport stressors is to investigate potential person and environment factors in the Cognitive-motivational-relational model. Personality and coping resources differences are two ways to highlight differences in appraisal and coping. Trait Social anxiety has been identified as a personality variable which influences social interactions and an individual's social functioning (Leary, 1983c). An athlete's level of social anxiety is likely to influence how

a situation is appraised in terms of threat to well-being (motivational goals). In addition, social support (an external resource) has been shown to be an important coping resource for dealing with stress, especially in female adolescence where the forming of friendships is critical (Hoar, 2003). The presence of social support from significant others like teammates may influence the evaluation of what is at stake as well as help in managing the demands. In the youth sport stress literature there is limited published empirical data examining both the role of social support and social anxiety on cognitive appraisal and coping (see Holt & Hoar, 2006 on social support).

An additional challenge in examining stress in youth sport is that both the dimensions of stressors can be differentially reported as well as the specific type of stressor across athletes in a study (Kowalski & Crocker, 2001). Therefore, it might be useful to focus on a particular type of stressor as well as present each participant with the same specific stressor. This present thesis will focus on interpersonal stressors. Furthermore, the specific stressor will be fixed by using a hypothetical interpersonal stressor involving gossip.

1.2 Aim of Research

The aim of this research project is to investigate how social anxiety and social support influence cognitive appraisals and coping with interpersonal stress in female adolescent athletes. In general, the research is interested in examining the global relationships among person variables (social anxiety, social support), cognitive appraisal variables (threat and challenge), and coping (problem-focused, emotion-focused, and avoidance) with an interpersonal stressor. In particular, the research will examine whether the effects of social anxiety and social support from teammates on coping are

mediated by cognitive appraisals. The research will also examine other models that will be clarified later in the thesis.

1.3 Literature Review

1.3.1 Cognitive-Motivational-Relational Model:

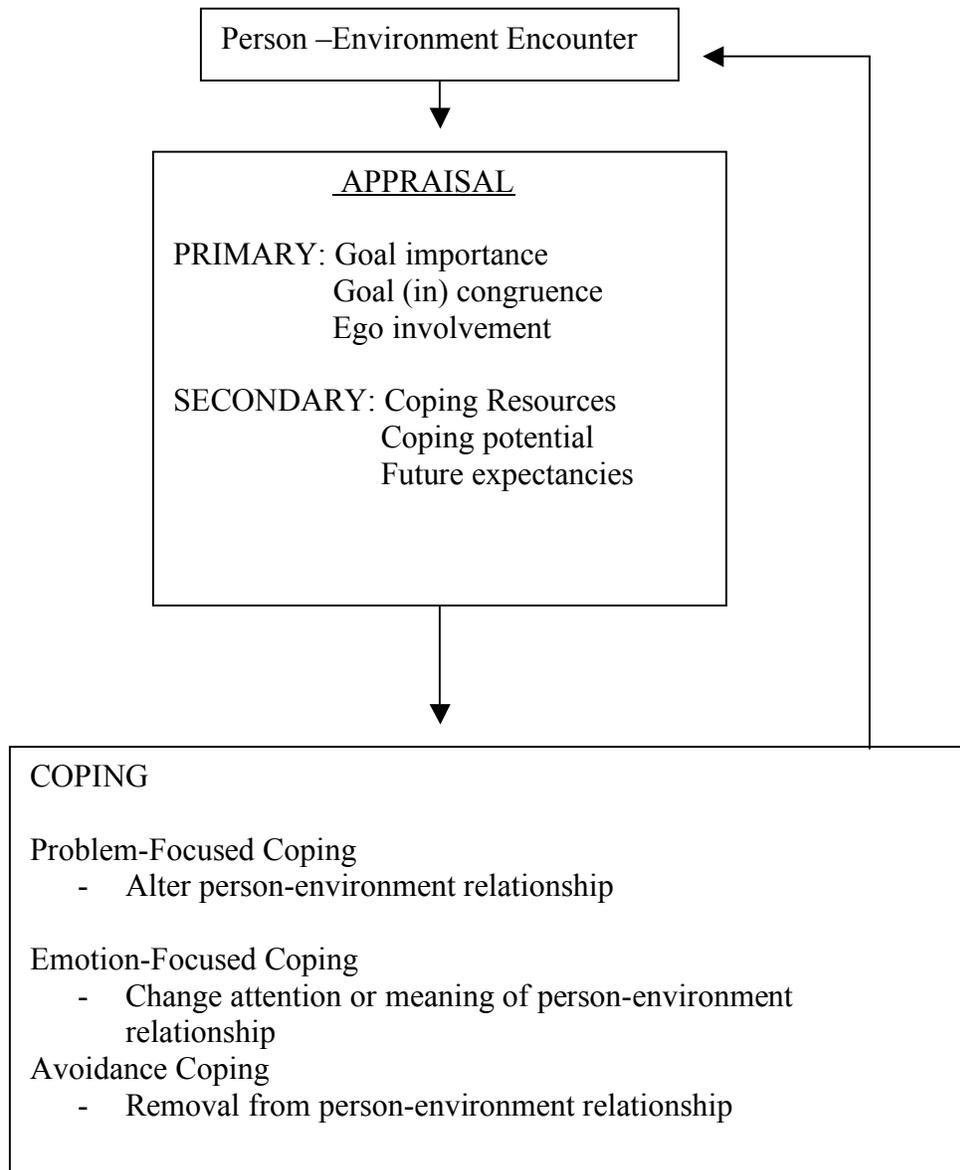
Researchers have often used a transactional perspective to study sport stress (Hardy et al., 1996, Crocker, Hoar, et al., 2004). The prominent model was developed by Lazarus and Folkman (1984) and is titled the “cognitive-motivational-relational model of stress and coping”. In this model, stress is defined 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” (Lazarus & Folkman, 1984, p. 21).

According to this model, antecedent variables and mediating processes jointly determine how individuals experience and cope with various stressors. The term antecedent variables refers to the environmental variables and an individual’s personal variables, which work together to create a potentially stressful situation. Some examples of environmental variables are competitive demands, social resources, and task and social constraints in a given sporting situation. Examples of person variables include ability, age, gender, and personality.

Mediating processes refer to appraisal and coping. Appraisal refers to how an individual interprets a situation while coping refers to efforts used to manage situations that are appraised as stressful. There must be an interaction of certain personal and environmental conditions for an individual to appraise a situation as stressful. If an individual does not have any goals, or is not striving to obtain something from their environment, they will not perceive a situation as stressful (Lazarus, 1999, 2000).

In early work, Lazarus & Folkman argued that there are three general types of stress relationships; threat, harm/loss, and challenge/benefit. Threat appraisals refers to anticipated harm and occurs when a transaction is appraised to have potential goal incongruence in addition to the lack of coping options to change the situation. For example, an athlete may believe that gossip by specific team members may undermine her social status on the team. Confronting teammates may cause more harm than good in terms of team harmony. The appraisal of harm/loss refers to harm or loss that has already taken place. Challenge/benefit appraisal, on the other hand, occurs when the individual understands that the difficulties of a transaction may be overcome, and the benefit in the situation is visible (Franks & Roesch, 2006). These three stress relationships reflect individuals' appraisal of person-environment transactions and attempts to cope. The value placed on the situation by the individual and the congruence between the situation and their personal goals will influence how they appraise a situation and whether they find it stressful or not. An evaluation and determination of whether the environmental-person interaction will aid or hinder an individual in their goal achievement and the degree to which these goals are important will impact the type of appraisal. The next section will elaborate on two types of appraisal; primary and secondary. This section will be followed by a more detailed description of the coping process. Figure 1.1 depicts a diagram of the cognitive motivational relational model.

Figure 1.1: Cognitive-Motivational-Relational Theoretical Model adapted from Lazarus and Folkman (1984).



1.4 Primary Appraisal

Primary appraisal refers to how an individual will evaluate the personal significance of a situation with regards to their beliefs, values, and goals. In this sense, primary appraisal deals with what is at stake (Lazarus, 1991). Primary appraisal has three key factors: goal congruence, goal importance (value) and type of ego involvement. Goal congruence refers to the situation being congruent or in line with the individuals' goals. Goal importance refers to the importance the individual places on these goals, while ego involvement refers to whether the situation pertains to something that matters to them. Different types of ego involvement include self-esteem, social esteem, ego ideals, and morality (Lazarus, 1991). Another key point is that cognitive appraisal can be automatic (very rapid and not conscious) or reflective (conscious).

In primary appraisal, the person will try to determine whether the situation is relevant to his/her values, goal commitments, beliefs and situational intentions. An individual may ask questions such as "Do I have anything at stake in this encounter?" or "Does this situation threaten my goals?". Individuals may have personal or performance goals that may be affected by certain transactions. If no goal commitment is involved or nothing is at stake, the individual will not need to engage in any coping actions as there is nothing of importance to arouse a stress reaction (Lazarus, 1999).

1.5 Secondary Appraisal

Secondary appraisal involves a cognitive evaluation with three key elements involved: coping resources, coping potential, and future expectancies. In secondary appraisal, the individual considers which coping options are available, the prospect that a particular coping option will achieve what it is expected to, and the chance that the

individual will be able to apply a coping strategy effectively (Lazarus & Folkman, 1984). The appraisal of coping options can also include an evaluation of the consequences of using a particular strategy or set of strategies. Some sport researchers have operationalized secondary appraisal as perceived control or as control over being able to reduce or eliminate the source of stress (Hammermeister & Burton, 2004). Both primary and secondary appraisals may happen simultaneously and it may be difficult to differentiate between the two. Once the athlete has evaluated their coping options, coping responses will fall into one of three categories: emotion-focused coping, problem-focused coping or avoidance coping.

1.5.1 Coping

Coping is defined as “constantly changing cognitive and behavioral efforts used to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Folkman et al, 1986, p. 572). It is a person’s attempt to change or avoid certain situations and emotions that arise in the stress process. Coping should be conceptualized as a process, rather than a trait, as it seems to change across person-environment transactions (Lazarus, 1999). Different strategies may be used in response to different appraisals and different situations. Research in coping has identified three major types of coping: emotion-focused coping, problem-focused coping and avoidance coping (Lazarus, 1991, 1999; Krohne, 1993; Hoar, Kowalski, Gaudreau & Crocker, 2006; Nicholls & Polman, 2007).

1.5.1.1 Problem-focused Coping

Problem-focused coping reflects both cognitive and behavioral efforts to obtain information about what to do and/or mobilize actions for the purpose of changing the reality of the stressor (Folkman & Lazarus, 1984; Lazarus 1993, 1999). Problem-focused coping is used typically when an individual appraises that the situation can be changed through action (Lazarus, 1993). Some studies have suggested that the use of problem-focused coping strategies is associated with better performance (Crocker & Graham, 1995; Gaudreau & Blondin, 2002; Haney & Long, 1995). Some potential problem-focused coping strategies include: problem solving, planning, information seeking, suppression of competing behavior, and increasing efforts. However, numerous strategies can be used for the function of problem-focused coping (Kowalski & Crocker, 2001).

1.5.1.2 Emotion-focused Coping

Emotion-focused coping reflects cognitive and behavioral efforts to regulate emotions generated by the stressor without actually changing the realities of the stressful situation (Lazarus, 1993). Emotion-focused coping appears to work in two ways; either to change the meaning of what has happened by reappraising the stressful situation in a less threatening way, or to change how the stressful situation is handled by the individual (Lazarus, 1993, Lazarus & Lazarus, 1994). Some potential emotion-focused coping strategies include: denial, relaxation, self-blame, avoidance, acceptance and wishful thinking.

1.5.1.3 Avoidance Coping

Avoidance coping refers to when an individual ignores and does not deal with the stressor directly by suppressing both the stressor and the negative emotions that accompany it. Avoidance coping includes both behavioral and psychological efforts to disengage from a stressful encounter (Krohne, 1993; Nicholls & Polman, 2007). Examples include ignoring, discounting, psychological distancing and engaging in another unrelated task. Contrary to popular belief, avoidance coping is known to be one of the most common ways people, especially adolescents, deal with stress (Hoar et al., 2006; Lazarus, 1999). It can either be maladaptive or appropriate to specific situations (Lazarus, 1999).

1.5.2 Cognitive Appraisal and Coping Relationship

Lazarus (1990) and Lazarus and Folkman (1984) hypothesized that a transaction that is appraised as threatening will be managed using primarily emotion-focused coping because the individual has a low perception of their ability to control the situation and thus feels the need to deal with the negative emotions associated with it. Another hypothesis from Lazarus and Folkman is that situations appraised as challenging are likely to be managed using problem-focused coping strategies because the individual perceives a high amount of control in the situation and is motivated to change the transaction. Anshel (2001) noted one area of needed research in sport psychology is examining the extent to which the athletes' cognitive appraisals are associated with their use of coping strategies. The research in this study intended to investigate this gap in the literature.

Lazarus and Launier (1978) argued that most research on stress emphasizes loss and threat appraisals, and often neglects challenge appraisals. This neglect is likely due to the positive tone of challenge appraisals, yet like threat and harm/loss appraisals, challenge appraisals also require coping efforts. One reason this study included challenge appraisals in the measurement was to provide more insight into both positive and negative cognitive appraisals.

1.5.3 Differences in Coping

Understanding the various relations between the person and the environment is one way to better understand the individual differences in the coping response (Hoar et al., 2006; Lazarus, 1991). It is possible that individual differences like gender and personality influence stress and coping process. Lee-Baggley et al., (2005) reported that personality plays an important role in almost every aspect of the stress and coping process and is associated with the likelihood of engaging in certain coping strategies. Various personality traits will influence how a transaction is appraised, and thus influence subsequent coping strategies. For example, an athlete who is high trait-anxious is likely to appraise an ambiguous situation as threatening compared to an athlete who is low trait-anxious. Each of these athletes would likely use different coping strategies to deal with the situation due to differences in appraisal.

Sport researchers have been very interested in determining whether gender moderates the stress process (Anshel & Delany, 2001; Crocker & Graham, 1995; Hoar et al., 2006; Nicholls & Polman, 2007). Typically research indicates that males and females cope differently with stress. Some research indicates females use more social support (Crocker & Graham 1995; Kowalski & Crocker, 2001) and emotion-focused coping

(Goyen & Anshel, 1998; Kowalski & Crocker, 2001), whereas males report more problem-focused coping (Gaudreau & Blondin, 2002). A recent meta-analysis of gender differences in coping found that women tend to use more coping strategies in general than men but differences in gender differences in coping are likely moderated by the type of stressor (Tamres, Janicki, & Helgeson, 2002). That is, men and women may report different types of situations as being stressful. Therefore, it is important that researchers either identify the type of stressor being reported by the athlete or to control the type of stressor presented to the athlete.

Some researchers have argued that gender also may moderate how transactions are appraised and coped with due to differences in gender socialization and social roles (Aldwin, 2001; Lazarus, 1991). Various researchers have confirmed that when confronted with a stressful event, males are socialized to be more instrumental problem-solvers whereas females are socialized to be more expressive emotionally (Brody & Hall, 1993; Ptacek, Smith, & Zanas, 1992). These gender differences in coping and appraisal will in turn influence social interactions. Socialization theory proposes that women are taught to express their emotions more openly and to act in a more passive manner, whereas men are taught to approach situations in a more active, problem-focused, and instrumental manner (Folkman & Lazarus, 1980). Anshel and Kissidis (1997) identified gender differences in skilled and less skilled athletes, with females using more avoidance strategies than males. Anshel and Delaney (2001) also found gender differences in coping in adolescent field hockey players. Females were identified to use more confidence building and self talk while males used more resignation. Additionally,

Anshel and Sutarso (2007) found that gender was a moderating variable in determining coping style in response to specific sources of stress.

Overall, the research in sport and other domains suggests that coping is a complex process that is influenced by cognitive appraisals, and other key variables such as personality and gender. The research suggests that gender might be an important factor to control in any sport research. It also indicates that social support might be a key factor to consider in research. Social support from significant others is an external resource that can be used to manage stressful situations. An individual's personality in addition to their available resources might impact how a situation is appraised and how they choose to cope. The researcher in this study has chosen to measure differences in social anxiety as a personality trait as well as differences in perceived social support as a coping resource to highlight differences in appraisal and coping.

1.5.4 Social Anxiety:

Sport psychology researchers have been studying emotional states and their influence on performance and behavior for many years. Anxiety in sport is one variable that has been extensively studied, usually with a focus on anxiety in competition settings (Nesti & Sewell, 1999; Cox et al., 2003). In the sport coping literature, anxiety is often linked to the appraisal of threat (Hoar et al., 2006). Leary and Kowalski (1993, p. 8) define anxiety as “an aversive emotional experience involving apprehension regarding the possibility of physical or psychological harm, increased physiological arousal and the motive to avoid or escape the anxiety-producing situation”. Social anxiety arises from the “prospect or presence of interpersonal evaluation in real or imagined social settings” (Schlenker & Leary, 1982, p. 642). Thus, social anxiety should be an important

personality variable in interpersonal sport stress. The predisposition to appraise threat in social settings will likely influence the appraisal process.

Social anxiety has been linked to the likelihood of experiencing stressful situations (Bolger & Schilling, 1991; Bolger & Zuckerman, 1995), the appraisal of an event as stressful (Gunthert, Cohen & Armeli, 1999), the likelihood of engaging in certain coping strategies (David & Suls, 1999; McCrae & Costa, 1986; O'Brien & DeLongis, 1996; Rim, 1986; Watson & Hubbard, 1996), and the effectiveness or outcomes of these coping strategies (Bolger & Zuckerman, 1995; Gunthert et al., 1999). This personality variable appears to influence all aspects of the coping and stress process. Surprisingly, there is a little empirical research that examines social anxiety and interpersonal stress in sport settings.

Based on previous findings in general psychology, it is expected that social anxiety will influence the way stressful situations are appraised. When an athlete is presented with an interpersonal conflict it is expected that individuals who score high in social anxiety will appraise it as more threatening compared to individuals who score low in social anxiety. The effect of social anxiety on coping with interpersonal stress is expected to be mediated through the appraisal process. Details on the hypothesis for this study can be found at the end of this chapter.

1.5.5 Social Support:

A key resource that can help adolescent athletes manage stress is the social support received from significant others such as teammates, parents and friends (Holt & Hoar, 2006; Rosenfeld, Richman & Hardy, 1989). Social support is related to an athlete's sense of well-being as well as their integration with their social community

(Holt & Hoar, 2006). In sport, social support is hypothesized to reduce uncertainty, aid physical and mental recovery, and provide reassurance for athletes (Rosenfeld, Richman, & Hardy, 1989), whether they are experiencing stress or not. Social support provides athletes with a resource in which to deal with their stressors, whether the support comes from a peer, coach or parent.

Social support has been identified as being a major resource for coping (Lazarus, 1999; Carpenter & Scott, 1992; Pierce, Sarason & Sarason, 1996). Social support can be defined 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 & Bronwell, 1984, p 13). Hoar (2003) suggests that the social support resource may be particularly important to explain 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 phase of maturation.

Three dimensions of social support have been identified in the literature: structural, functional and perceptual. The perceptual dimension refers to an individual’s perception or appraisal of the amount or quality of support available to him/her (Holt & Hoar, 2006; Vaux, 1985). Perceived social support involves the recipients’ appraisal of the availability of support as well as the meaning of the supportive behaviors. One of the most robust findings in the social support literature is that the recipient’s perception of being supported (whether this is accurate or not), rather than actual support behaviors, is more consistently associated with health and well-being outcomes (Sarason et al., 1990; Schwarzer & Leppin, 1991; Thoits, 1995; Holt & Hoar, 2006). Structural support refers

to the social support network that an individual believes they have access to. It refers to the existence of social ties and groups and is measured by examining social support networks. Functional support refers to actual received support and the functions that the support interaction serves to the individual. This is a difficult dimension to measure as individual's reported amount of support may reflect their perceptions of what was available rather than what was actually received.

It is proposed that social support influences health and well being by two mechanisms: a buffering effect and a main effect. The main effect works to benefit athletes whether they are under stress or not and is based on the idea that an athlete is less likely to perceive situations as stressful simply by knowing that they have support available. The buffering effect suggests that social support works to buffer or reduce the negative effects of stress by providing athletes with a support system that helps them deal with the stressor itself or the negative emotions associated with either an acute or ongoing stressor (Cohen, 1988; Cohen & Syme, 1985; Cohen & Wills, 1985).

1.5.5.1 Provisions of Social Support

The provisions of social support that seem relevant to interpersonal stress are guidance, reliable alliance, reassurance of worth, attachment, social integration and opportunity for nurturance. These variables are elements of the social provisions model developed by Weiss (1973, 1974). In this model, guidance refers to the receipt of advice or information; reliable alliance is the feeling that others can be counted on in times of stress; reassurance of worth refers to esteem support or the recognition of one's worth and competence; attachment refers to having a close emotional connection with people who one can rely on; social integration refers to feeling a sense of belonging or that one

is a welcome part of a group or team; opportunity of nurturance refers to the chance to reach out and help others and provide them with information and guidance.

Based on previous literature, social support is expected to influence both appraisal and coping. For example, it is expected to find that individuals who score high in perceived social support will have low threat appraisals and high challenge appraisals in response to an interpersonal stressor. Additionally, individuals who score high in social support will use more problem-focused and emotion-focused coping strategies to deal with interpersonal stress. It is also expected that individuals who score high in social support will score low in social anxiety.

There are two competing hypotheses concerning social support and coping. Based on the main effect hypothesis, it is expected that the relationship between social support and coping will be mediated by challenge appraisals. That is, social support will influence appraisals which will in turn influence coping. The buffering hypothesis suggests, however, that social support will moderate the relationship between appraisal and coping. Cohen and Wills (1985) identified social support as an important moderator variable in the stress and adjustment process. They noted that as social support increases, stress decreases, and adjustment subsequently decreases as well. This study hypothesizes that social support will function in a similar manner. It is expected to find that as social support increases threat and challenge appraisals will act differently on coping. Specifically, it is expected to find that as social support rises, there will be an increase in challenge appraisals, and a subsequent increase in problem-focused coping. Additionally, as social support decreases there will be an increase in threat appraisals, and an increase in emotion-focused and avoidance coping. This is due to the notion that challenge

appraisals and problem-focused coping are associated with positive emotions and high control, while threat appraisals, emotion-focused coping and avoidance coping are associated with negative emotions and low control. Athlete's perceiving support to be available will have a coping resource in which to deal with the interpersonal stress they are presented with, while athletes perceiving low support will not have a resource in which to deal with the stress, and therefore use coping strategies directed at dealing with the negative emotions associated with the situation rather than tackling the problem directly. Details on the hypotheses for this study can be found at the end of this chapter.

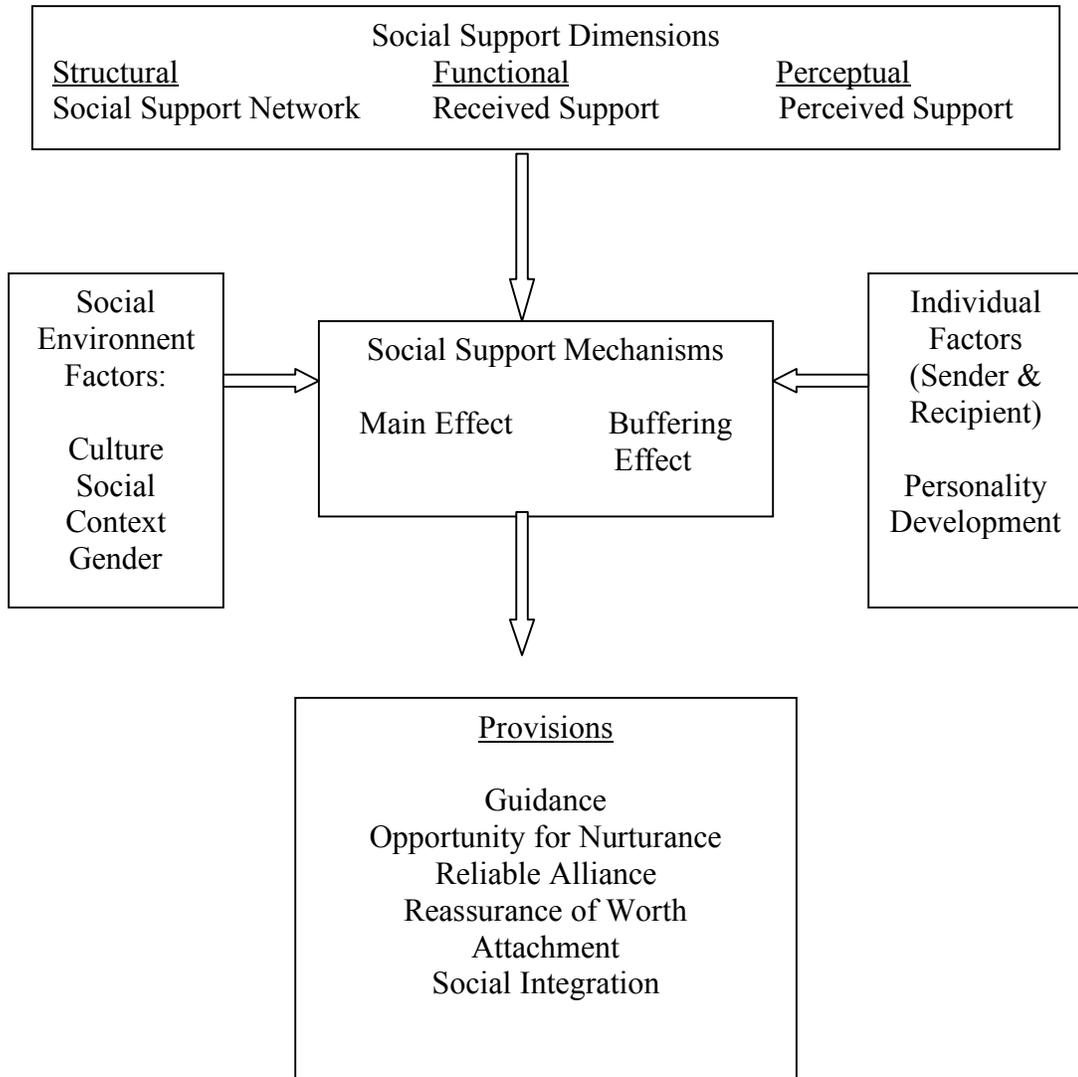
1.5.6 Relationship Between Social Support and Social Anxiety

There are three main hypotheses that have been developed in previous literature to explain differences in social anxiety and social support. Most researchers have used a social causation model, assuming that the lack of social support causes social anxiety (Johnson, 1991; Calsyn et al., 2005). A second hypothesis titled the social selection model, argues that social anxiety causes reduced social support (Johnson, 1991; Calsyn et al., 2005). According to this hypothesis, individuals who are more socially anxious are less able to attract and maintain supportive relationships than are less anxious individuals. A third hypothesis is known as the reciprocal effects model, argues that the causal relationship between social support and social anxiety is largely reciprocal. Thus, although social support impacts subsequent social anxiety, social anxiety also affects subsequent social support (Calsyn et al., 2005).

Although these hypotheses were not tested directly, the relationship between social support and social anxiety was explored. It was expected to find a negative

correlation between social support and social anxiety. An interaction effect between social support and social anxiety's influence on appraisal and coping was also explored.

Figure 1.2: A conceptual model of the social support process in sport (Holt & Hoar, 2006).



1.6 Summary of the Literature and Hypothesis Formation.

The overall purpose of this research was to examine how social anxiety and social support from sporting peers influences appraisal and coping processes in adolescent female athletes. The cognitive-motivational-relational model states that stress can be defined as a transaction between a person and their environment that is appraised as taxing or exceeding the resources of the person and endangers their well-being (Lazarus, 1991; 2000). This process involves person and environmental factors that influence appraisal and coping. Based on the literature review, this research has identified interpersonal stress as a key type of sport stress. To control for gender effects, this research will focus on female adolescent athletes. Social anxiety, and social support from peers have been identified as key person factors in the stress process. Both the appraisal of threat and challenge are important in understanding how these youth athletes manage interpersonal stress.

The hypotheses for this research are based on the cognitive motivational relational model (see figure 1.3). The development of the hypotheses used previous research to help identify key factors. How athletes appraise and cope with interpersonal conflict was hypothesized to be influenced by their personality and their coping resources. Below is a discussion of the specific hypotheses for this study.

1.6.1 Hypotheses

1.6.1.1 Hypothesis 1: Person Variables

The model holds that person variables (social anxiety and perceived social support) will predict how the interpersonal stress scenario is appraised.

1.6.1.1.1 Hypothesis 1a: Social Anxiety Predicts Threat Appraisals

It was expected that social anxiety would positively predict appraisals of threat.

1.6.1.1.2 Hypothesis 1b: Social Support Predicts Challenge Appraisals

It was expected that social support would positively predict appraisals of challenge.

1.6.1.2 Hypothesis 2: Appraisal Variables and Coping.

The model holds that cognitive appraisals are what drive coping functions.

1.6.1.2.1 Hypothesis 2a: Challenge Appraisal Predicts Problem-focused Coping

It was expected that challenge appraisals would positively predict problem-focused coping functions.

1.6.1.2.2 Hypothesis 2b: Threat Appraisals predict Emotion-focused Coping

It was expected that threat appraisals would positively predict emotion-focused coping.

1.6.1.2.3 Hypothesis 2c: Threat Appraisals predict Avoidance Coping.

It was expected that threat appraisals would positively predict avoidance coping.

1.6.1.3 Hypothesis 3: Appraisal Variables Mediate the Relationship between Person Variables and Coping (primary model).

This hypothesis was based on the cognitive motivational relational model developed by Lazarus and Folkman (1984). According to this model, the relationship between person variables and coping is mediated by appraisals.

1.6.1.3.1 Hypothesis 3a: Social Support and Problem-focused Coping.

It was expected that the relationship between social support and problem-focused coping would be mediated by challenge appraisals. Social support was expected to influence appraisals of challenge, which will influence problem-focused coping. When support is high, it was expected to find high challenge appraisals and high problem-focused coping.

1.6.1.3.2 Hypothesis 3b: Social Anxiety and Emotion-focused Coping.

It was expected that the relationship between social anxiety and emotion-focused coping would be mediated by threat appraisals. When social anxiety is high, threat appraisals, and the use of emotion-focused coping were expected to be high.

1.6.1.3.3 Hypothesis 3c: Social Anxiety and Avoidance Coping.

It was expected that the relationship between social anxiety and avoidance coping would be mediated by threat appraisals. When social anxiety is high, threat appraisals, and the use of avoidance coping were expected to be high.

1.6.1.4 Hypothesis 4: Appraisal Variables Moderate the Relationship Between Person Variables and Coping (Alternate).

This hypothesis was developed as an alternative to the mediational model. It is expected that an interaction between the appraisal variables and the person variables will predict coping. This hypothesis was developed as an alternative to the main mediation hypothesis.

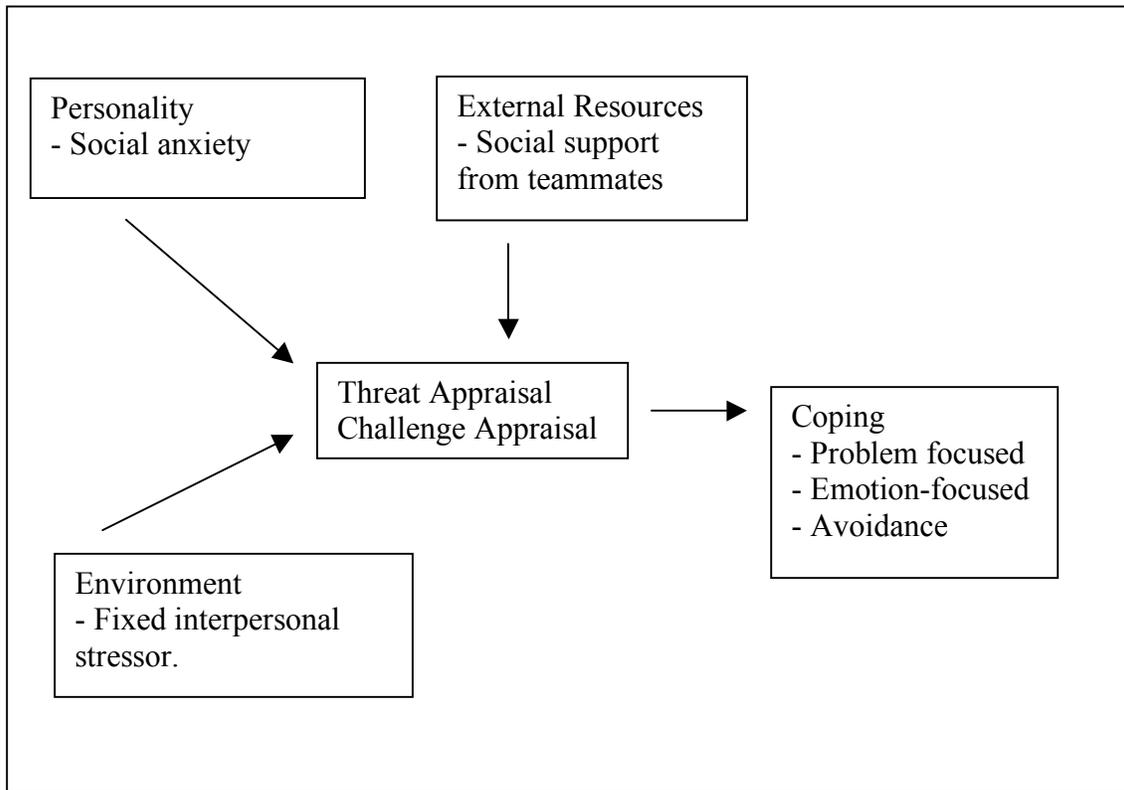
1.6.1.4.1 Hypothesis 4a: Social Support and Challenge

It was expected that an interaction between social support and challenge would positively predict problem-focused coping. Due to the fact that both social support and challenge were expected to positively predict problem-focused coping, an interaction between these two variables was explored.

1.6.1.4.2 Hypothesis 4b: Social Anxiety and Threat

It was expected that an interaction between social anxiety and threat would positively predict the use of emotion-focused coping and avoidance coping. Given that social anxiety and threat appraisals were each expected to predict emotion-focused coping and avoidance coping, an interaction between these two variables and how they predict coping was also explored.

Figure1.3: Model integrating the interaction between coping, social anxiety, perceived social support and threat perception.



2 CHAPTER II: METHODS

2.1 Participants:

The participants were 184 female high school soccer players recruited by contacting the coaches of various high-school teams in Vancouver. The athletes were asked to fill out the research questionnaires in a classroom setting during their lunch hours or after school. The athletes were widely spaced in the room so that they were unable to read each other's sheets. After screening for missing data and excluding 3 cases of non-randomly missing data, the final sample included 181 female soccer players. The mean age was 15.1 years ($sd = 1.43$).

2.2 Measures:

2.2.1 Social Anxiety:

Social anxiety was assessed by the Interaction Anxiousness Scale (IAS; Leary, 1983b). The IAS demonstrates high test-retest and internal reliability (Leary & Kowalski, 1993). The IAS consists of 15 items that span a broad range of anxiety-evoking situations including interactions with strangers, parties, dating, and dealing with authority figures (Appendix A). This measure was designed to measure the tendency to feel nervous in social encounters independent of patterns of inhibited, introverted, or avoidant behavior (Leary, 1983c, 1991)

2.2.2 Social Support:

Social support consists of six different social functions or provisions that can be obtained from relationships and interactions with others (Weiss, 1974). Based on Weiss'

model of social support, Cutrona and Russell (1987) developed and validated the Social Provisions Scale to measure social support. This scale consists of 24 statements that tap into each of the 6 identified functions of social support: reliable alliance, attachment, guidance, nurturance, social integration and reassurance of worth. Each function of support has 4 questions in the measure. Participants are asked to rate how much each statement applies to them on a scale of 1 to 4. The factorial validity of the 24-item, 6 subscale Social Provisions Scale has been supported using confirmatory factor analysis (Cutrona & Russell, 1987). This analysis indicated that the 6-subcales were reasonably represented by single-order factor of social provisions. Therefore, the Social Provisions Scale has been shown to tap into both specific components of social support as well as the overall level of support available to an individual (Cutrona & Russell, 1987). The present study utilized a single order scale assessing the overall level of support..

The Social Provisions Scale was adapted to use in a female team sport population. The questions have been altered slightly so they deal with social support that is received from teammates only, rather than from other people in general.

2.2.3 Perception of Threat and Challenge:

The Stress Appraisal Measure (SAM; Peacock & Wong, 1990) is a multidimensional measure of the appraisal in the stress process (see Appendix E). This measure was originally developed in accordance with the transactional model of stress to assess both primary and secondary appraisal dimensions. Only the dimensions of threat and challenge were measured. Research supports the psychometric properties of the scales. In multiple regression analyses, threat consistently emerged as a significant predictor of overall stressfulness. For the purpose of this research, the questions in the

scales have been modified slightly to fit with the scenario that the athletes will read before filling out the questionnaire (Appendix D). The responses to each question are measured on a 5-point Likert scale.

2.2.4 Coping:

The Coping Function Questionnaire (CFQ) for adolescent sport (Kowalski & Crocker, 2001) was used to evaluate the coping functions of the participants (see Appendix F). It is an 18-item measure that examines the three functions of coping identified in the first chapter: emotion-focused (7 items), problem-focused (6), and avoidance coping (5). This tool has acceptable reliability ($\alpha > .80$) for all scales, factor validity, and has shown gender invariance. The responses to each question asking the athletes how much they use each coping function are ranked on a 5-point Likert scale. The coping score for each scale is obtained by taking the mean of all items for each scale. A higher score indicates more coping.

2.2.5 Scenario:

A scenario was used to create a constant environmental interpersonal stressor. Each participant was presented with the following scenario:

You have been hearing rumors from some non-teammate friends that people on your team have been talking about you. You have heard that something has been said with respect to your attitude and behavior on the team but when you press for more information no one seems to really know more. You arrive at practice one afternoon and a few of your teammates are leaving the change room

and onto the playing field. When they see you they stop talking among themselves. They smile at you and say hello but don't stop to chat. When you leave the change room and head out for practice, three of them are on the field in a circle talking to one another. They are too far away so that you cannot tell what they are saying, or the tone of their voices. They acknowledge your presence on the field but they do not seem to be their usual friendly selves. They don't say anything to you directly, or do anything that would lead you to believe that you have done something to upset them. Furthermore, you can't think of something that you have done recently, or something that has happened that would make them upset. The practice continues and finishes as usual but the level of personal interaction among all players seems lower than normal. After practice everyone is polite but there is not a lot of small talk and joking around. Some players are heading out to socialize together but no one invites you along. You head home to finish up some homework.

2.3 Procedures:

This study received ethical approval from the University of British Columbia's Behavioural Research Ethics Board prior to any data collection. Once the university's ethical approval was granted, the researchers applied for ethical approval from the Vancouver School Board. This approval was received before the start of data collection.

After ethical approval, the principals for each high school in Vancouver were contacted, and their permission was requested to have data collected from students at

their school. Principals were initially contacted by email with a letter explaining the study attached (Appendix G). They received a follow-up phone call one week after receiving the email about the study. Principals were given the opportunity to decline, in which case their school was omitted from the list and not contacted further.

If the principal gave permission, an information letter was sent to the coach via email (Appendix H). The coach then received a follow-up phone call approximately one week after receiving the information email. The details of the study were explained to them and a date was agreed upon to hand out information and consent forms to their athletes (Appendix J) and the athlete's parent or guardian (Appendix I). This was approximately one to two weeks after the initial phone call.

The first meeting with the athletes involved handing out information and consent forms. This form had contact information for the researchers as well as a general description of the purpose of the study. Students were given the chance to ask any questions about the study.

The second meeting took place after school or during lunch hour, at a time that was decided upon by the coach and the main researcher. During this meeting, the athletes filled out two questionnaires designed to measure social anxiety (Interaction Anxiousness Scale; Leary, 1983b) and perceived social support (Social Provisions Scale; Weiss, 1974). The athletes then read the written scenario describing a hypothetical interpersonal stress situation on a team and indicated their appraisal of threat and challenge (Stress Appraisal Measure; Peacock & Wong, 1990) based on their reaction to this scenario. They then indicated how they thought they would cope with the scenario (Coping

Functions Questionnaire; Kowalski & Crocker, 2001). Each athlete was given a five dollar stipend for their participation.

3 CHAPTER III: RESULTS

3.1 Data Screening

Prior to conducting the analyses, the sample was screened for missing data and outliers. Participants who did not complete a questionnaire were excluded from the final sample. Data that was non-randomly missing was also excluded from the final set. It was identified that the randomly missing data were scattered throughout the data set, and deleting each case with a missing value was not an option as this would have greatly reduced the sample size and thus reduced the statistical power of the data. If only a few data values, usually less than 5% are absent in a haphazard pattern from a large dataset, almost any procedure for handling missing values can be used (Duffy, 2006; Duffy & Jacobsen 2005; Tabachnick & Fidell 2007). In the current dataset, there was less than 1% of randomly missing data in the final sample.

The randomly missing values were replaced using the median replacement method. This method involves computing mean or median values from available data in the sample, using them to replace missing values, and then proceeding to data analysis as if there were no missing data (Allison, 2001; Duffy, 2006). For example, on the coping functions questionnaire if a participant missed question 15 (a question on avoidance coping), but completed all of the other 4 questions on avoidance coping, the median for their 4 answers would be calculated and the missing answer would be replaced with this median value. This is a common procedure and is considered a conservative approach because the distribution mean as a whole does not change and the researcher does not have to guess at missing values (Duffy, 2006). Instead of replacing missing values with

the mean for the entire scale, the participants mean for each subscale was calculated and the mean for each participant replaced each of their missing values.

3.2 Scale Reliabilities

The reliability of the scales were examined using Cronbach's Alpha and were found to be acceptable. The alpha levels for each scale are as follows: Social Support (SPS) ($\alpha = .83$), Social Anxiety (IAS) ($\alpha = .82$), Threat (Threat) ($\alpha = .80$), Challenge (Chall) ($\alpha = .81$), Problem-focused Coping (PFC) ($\alpha = .80$), Emotion-focused Coping (EFC) ($\alpha = .78$), Avoidance Coping (AVC) ($\alpha = .77$).

3.3 Descriptive Statistics

The means, standard deviations, and skewness are all shown in table 3.1.

Table 3.1: Means and Standard Deviations for Social Anxiety, Social Support, Appraisal and Coping.

| | Mean | Standard Deviation | Skewness | Scale Range |
|--------|-------|-----------------------|----------|-------------|
| SIS | 38.09 | 8.46 | .25 | 19 - 62 |
| SPS | 79.20 | 8.38 | -.72 | 52 - 96 |
| Threat | 11.70 | 4.01 | .33 | 5 - 25 |
| Chall | 24.00 | 4.81 | -.16 | 11 - 35 |
| PFC | 21.60 | 4.32 | -.31 | 9 - 30 |
| EFC | 25.36 | 4.50 | -.13 | 10 - 35 |
| AVC | 15.85 | 4.18 | -.21 | 5 - 25 |

Note: Social Anxiety (SIS), Social Support (SPS), Threat (Threat), Challenge (Chall), Problem-focused Coping (PFC), Emotion-focused Coping (EFC), Avoidance Coping (AVC).

The means and standard deviations for the interaction anxiousness scale are slightly lower than those reported in previous studies with university students (Leary & Kowalski, 1993). In those studies, means for social anxiety ranged from 38.6-40.6 (SD = 9.0-11.1) compared to the present values of 38.09 (SD = 8.46). This slight difference may be attributable to this sample being younger than the sample from the previous studies.

The means and standard deviations from the social provisions scale were similar to those reported in previous studies with adolescents (Cutrona & Russell, 1987). In that

specific study means for social support were 78.82 (SD = 10.37), while the present values were 79.20 (SD = 8.38).

The means and standard deviations for the stress appraisal measure are higher than those reported by Roesch and Rowley (2005). In their study means were reported from 1.64-2.87 (SD = .97-1.14) while our means were 2.34 (SD = .69) for threat and 3.43 (SD = .80) for challenge. Two major differences between the two studies could account for these differences. Firstly, their study was with university students, both male and female. Additionally, their study asked the participants to report how they deal with stress rather than report how they would appraise a specific stressful situation that was provided. Higher scores in this study could be due to the fact that our sample was younger and exclusively female. The means they reported were for the entire Stress Appraisal Measure Scale, rather than the means exclusively for threat and challenge appraisals.

The means and standard deviation for the coping functions questionnaire were higher than those reported in previous sport research. Kowalski and Crocker (2001) reported means of 2.82 (SD = .91) for PFC, 3.21 (SD = .79) for EFC, and 2.04 (SD = 1.07) for AVC when asking female adolescents to report how they coped with a recent sport stress. The means from this study were 3.6 (SD = .72) for PFC, 3.6 (SD = .64) for EFC, and 3.17 (SD = .84) for AVC. These slightly elevated levels could be due to the smaller sample size or due to the stress scenario. The scenario might cause elevated stress appraisals, and subsequently elevated coping efforts.

3.4 Correlations:

All of the correlations were examined using Pearson's correlations and are shown in table 3.2.

Table 3.2: Pearson Correlations between measured variables.

| | SIS | SPS | Threat | Challenge | EFC | PFC | AVC |
|--------|---------------|---------------|---------------|--------------|--------------|-----|-----|
| SIS | 1 | | | | | | |
| SPS | -.30** | 1 | | | | | |
| Threat | .38** | -.26** | 1 | | | | |
| Chall | -.37** | .36** | -.44** | 1 | | | |
| EFC | -.03 | .22** | -.04 | .41** | 1 | | |
| PFC | -.20** | .35** | -.11 | .51** | .58** | 1 | |
| AVC | .19** | -.14 | .19* | -.09 | .27** | .10 | 1 |

** significant at the 0.01 level (2-tailed) * significant at the 0.05 level (2-tailed).

Note: Social Anxiety (SIS), Social Support (SPS), Threat (Threat), Challenge (Chall), Emotion-focused Coping (EFC), Problem-focused Coping (PFC), Avoidance Coping (AVC).

Consistent with previous work, social anxiety was significantly positively correlated with threat appraisal ($r = .38$) and significantly and negatively correlated with challenge appraisal ($r = -.37$). It was expected that social anxiety would be positively related to emotion-focused and avoidance coping; however, social anxiety was not significantly correlated with emotion-focused coping and demonstrated a weak positive correlation with avoidance coping ($r = .19$). It was identified that social anxiety was also significantly and negatively correlated with problem-focused coping ($r = -.20$).

As expected social support was significantly correlated with challenge appraisal ($r = .36$) and significantly and negatively correlated with threat appraisal ($r = -.26$). It was

expected to find social support positively correlated with problem and emotion-focused coping and negatively correlated with avoidance coping. The findings indicate that social support was indeed positively correlated with emotion-focused coping ($r = .22$) and problem-focused coping ($r = .35$); however, social support was not significantly related to avoidance coping. Social support was also negatively and significantly correlated with social anxiety ($r = -.29$).

Contrary to hypotheses, the pattern of relationships between appraisals and coping were not all in the expected direction or strength. Challenge appraisals were positively correlated with both emotion-focused ($r = .41$) and problem-focused coping ($r = .51$), but was unrelated to avoidance coping. Threat appraisals were, unexpectedly, not related to emotion-focused or problem-focused coping. There was a weak relationship between threat and avoidance coping ($r = .19$).

3.5 Testing the Major Hypotheses:

This section will describe the relationships found within the proposed model. The variables were examined and all met the seven assumptions of multiple regression analysis.

3.5.1 Regressions

3.5.1.1 Hypothesis 1: Person Variables Predict Cognitive Appraisals

The first hypothesis based on the cognitive motivational relational model was that both person variables would predict the appraisal of the interpersonal stress scenario. It was expected that social anxiety would predict threat appraisals and social support would predict challenge appraisals. These hypotheses were tested using a series of multiple

regressions in SPSS. The first regression equation predicting threat was significant, $F(2, 178) = 18.10, p < .01$, with both social anxiety ($\beta = .33$) and social support ($\beta = -.16$) being significant individual predictors. The second regression equation predicting challenge was significant, $F(2, 178) = 22.73, p < .01$. The analysis found that both social anxiety ($\beta = -.29$) and social support ($\beta = .27$) were significant individual predictors of challenge. Both of these regression equations support the hypothesis.

3.5.1.2 Hypothesis 2: Cognitive Appraisal Predicts Coping Functions

The second hypothesis according to the cognitive motivational relational model was that the appraisal variables would predict coping functions. The prediction of each of the three coping functions was tested separately; with both appraisal variables forced into step one of the regression. .

3.5.1.2.1 Problem-focused Coping Predicted by Challenge and Threat Appraisals

It was expected to find that challenge appraisals but not threat appraisals, would significantly predict problem-focused coping. The regression equation was significant, $F(2, 178) = 33.87, p < .01, R^2 = .28$. (see Table 3.3). Contrary to expectations, both challenge ($\beta = .57$) and threat appraisals ($\beta = .14$) were significant predictors of problem-focused coping. Thus, the hypothesis was only partially supported.

Table 3.3: Predictors of Coping: Regression Analysis Predicting Problem-focused Coping.

| Predictor Variable | β | R^2 |
|--------------------|---------|-------|
| Threat | .14* | .28* |
| Challenge | .57* | |

* value is significant at $p < .05$

3.5.1.2.2 Emotion-focused Coping Predicted by Challenge and Threat Appraisals

It was expected to find that threat and not challenge appraisals would significantly predict emotion-focused coping. The regression equation was significant, $F(2, 178)=20.66, p<.01, R^2=.19$ (see Table 3.4). Both challenge ($\beta = .48$) and threat appraisals ($\beta = .17$) were significant predictors of emotion-focused coping. Thus, the hypothesis was partially supported

Table 3.4: Predictors of Coping: Regression Analysis Predicting Emotion-focused Coping.

| Predictor Variable | β | R^2 |
|--------------------|---------|-------|
| Threat | .17* | .19* |
| Challenge | .48* | |

* value is significant at $p < .05$

3.5.1.2.3 Avoidance Coping Predicted by Challenge and Threat Appraisals

It was expected to find that only threat appraisals would significantly predict avoidance coping. The regression equation was significant, $F(2, 178)=3.18, p<.05,$

$R^2=.04$ (see Table 3.5). Only threat ($\beta = .18$), but not challenge ($\beta = -.01$), was a significant predictor of avoidance coping. Thus, the hypothesis was supported.

Table 3.5 Predictors of Coping: Regression Analysis Predicting Avoidance Coping.

| Predictor Variable | β | R^2 |
|--------------------|---------|-------|
| Threat | .18* | .04* |
| Challenge | -.01 | |

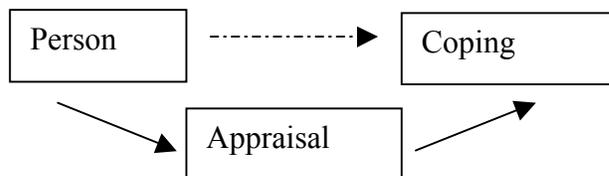
* value is significant at $p < .05$

3.5.2 Mediation Model

3.5.2.1 Testing Cognitive Appraisals Mediation of the Relationship Between Person Variables and Coping Functions.

A mediation model is proposed to explain how an effect occurs by hypothesizing a causal sequence. The basic mediation model is outlined below. The independent variable influences the mediator, which in turn influences the dependent variable. In the proposed mediation model, the independent variables were social anxiety and social support. The proposed mediators were the appraisal variables, challenge and threat. The dependent variables were each of the three types of coping. This sequence is outlined in figure 3.1.

Figure 3.1: Example of a Mediator Variable



Appraisal is a Mediator.

To test for mediation there are 4 steps using multiple regressions (Miles & Shevlin, 2001). First, the independent variables (SPS & SIS) must significantly predict the dependent variable (EFC, PFC & AVC). Step 2 involves determining if the proposed mediator variables (Challenge and Threat) predict the dependent variable. Step 3 examines if the independent variables predict the mediator variables. The first three steps need to be satisfied in order to continue to step four. In this last step, the experimenter examines if the mediator variables (appraisals variables) extinguish any predictive relationship between the independent variables (person variables) and the dependent variables (coping variables). That is, for the present study, the effect of social anxiety and social support on each coping function is redundant when the appraisal variables effects are considered.

The fourth step has two stages. In stage one the mediator variable is entered into a regression on the dependent variable. In stage 2 the independent variable is added to determine whether it accounts for any additional variance. If the independent variable does not account for additional variance then it can be concluded that the proposed mediator fully mediates the relationship. In full mediation the relationship between the independent and dependent variables is explained by the mediator. Partial mediation occurs when the mediator explains only part of the relationship between the independent and dependent variables. This occurs when the independent variable adds unique variance to the prediction of the outcome variables beyond the mediator. To satisfy partial mediation both the independent variable and the mediator must be significant predictors of the dependent variable in stage 2 of step 4.

Normally all four steps need to be satisfied to support mediation. However, in the present study there are two independent variables, two potential mediators and three coping variables. The regression analysis from section 3.5.1.2 showed the relationship between appraisal and the three coping functions was not the same. Recall, that challenge and threat were predictors of both problem-focused and emotion-focused coping. However, only threat was related to avoidance. The examination of mediation was conducted by considering (a) the mediation of each appraisal variable for (b) each coping function. The results are grouped by coping function, with results for challenge followed by those for threat.

3.5.2.1.1 Mediation with Problem-focused Coping as an Outcome Variable

It was expected to find that challenge would mediate the relationship between social support and problem-focused coping. However, the previously reported relationships among social support and social anxiety, as well as the significant prediction of challenge by both person variables indicated a need to examine the mediation of both person variables. A separate mediation analysis examined if threat mediated the relationship between the person variables and problem-focused coping. There was no explicit hypothesis for this relationship. A summary of the problem-focused coping mediation analysis can be found in table 3.6 (for challenge) and table 3.7 (for threat).

Table 3.6: Test if challenge mediates the relationship between person variables and problem-focused coping.

Step 1: Social anxiety and social support predict problem-focused coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | -.11 | .14* | .14* |
| Social Support | .32* | | |

Step 2: Challenge predicts problem-focused coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|-----------|---------|-------|-------------|
| Challenge | .51* | .26* | .26* |

Step 3: Social anxiety and social support predict challenge appraisals.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | -.29* | .20* | .20* |
| Social Support | .27* | | |

Step 4 Social support and problem-focused coping mediated by appraisals of challenge

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Challenge | .51* | .26* | .26* |
| Challenge | .44* | .29* | .03* |
| Social Support | .20* | | |

* value is significant at $p < .05$

The analysis indicated a complex partial challenge mediation model for problem-focused coping. In the first step, only social support ($\beta = .33$) was a significant predictor of coping. Therefore, only social support could be entered after challenge in step 4. This step indicated that social support made a small but significant additional contribution to explaining coping ($R^2\Delta = .03$), with both social support and challenge remaining significant individual predictors. Thus, challenge appraisal partially mediated the relationship between social support and problem-focused coping. The hypothesis is partially supported; as it was expected that challenge would fully mediate this relationship.

The analysis of threat appraisals indicated no support for a mediation model since threat was not a significant predictor of problem-focused coping in step 2. Problem-focused coping was predicted by social support. The lack of relationship between threat and problem-focused coping was not consistent with the analysis conducted in section 3.5.1.2. However, in that analysis, both threat and challenge were simultaneously entered in the prediction of coping. This is a classic case of suppression (Cohen et al., 2003).

Table 3.7 Test if threat mediates the relationship between person variables and problem-focused coping.

Step 1: Social support and social anxiety predict problem-focused coping

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | -.11 | .14* | .14* |
| Social Support | .32* | | |

Step 2: Threat predicting problem-focused coping

| Predictor | β | R^2 | $R^2\Delta$ |
|-----------|---------|-------|-------------|
| Threat | -.11 | .01 | .01 |

Step 3: Social support and social anxiety predict threat appraisals.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | .33* | .17* | .17* |
| Social Support | -.16* | | |

Step 4

No step 4 as threat was not a significant predictor of problem-focused coping in step 2.

3.5.2.1.2 Mediation with Emotion-focused Coping as an Outcome Variable

It was expected that challenge appraisals would mediate the relationship between social support and emotion-focused coping whereas threat appraisals would mediate the

relationship between social anxiety and emotion-focused coping. However, as like the problem-focused coping analysis, the previously reported relationships among both social support and social anxiety, as well as the significant prediction of challenge by both person variables indicated a need to examine the mediation of both person variables. A summary of the emotion-focused coping mediation analysis can be found in table 3.8 (for challenge) and table 3.9 (for threat).

The analysis indicated a complex challenge mediation model for emotion-focused coping. In the first step, only social support ($\beta = .23$) was a significant predictor of coping, accounting for only 5% of the variance. Therefore, only social support could be entered after challenge in step 4. This step indicated that social support did not make a significant additional contribution to explaining coping ($R^2\Delta = .01$). Thus, the hypothesis that challenge appraisal would mediate the relationship between social support and problem-focused coping was supported

The analysis of threat appraisals indicated no support for a mediation model since threat was not a significant predictor of emotion-focused coping in step 2. Emotion-focused coping was predicted by social support but not by social anxiety. As previously found with problem-focused coping, the lack of relationship between threat and emotion-focused coping was not consistent with the analysis conducted in section 3.5.1.2.1. The data provides support for the mediation model regarding social support-challenge- and emotion-focused coping. However, it provides no support for the social anxiety-threat-emotion-focused coping mediation model.

Table 3.8: Test if challenge mediates the relationship between person variables and emotion-focused coping.

Step 1: Social anxiety and social support predict emotion-focused coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | .04 | .05* | .05* |
| Social Support | .23* | | |

Step 2: Challenge appraisals predict emotion-focused coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|-----------|---------|-------|-------------|
| Challenge | .41* | .17* | .17* |

Step 3: Social anxiety and social support predict challenge appraisals.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | -.29* | .20* | .20* |
| Social Support | .27* | | |

Step 4 Social support and emotion-focused coping mediated by challenge appraisals.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Challenge | .41* | .17* | .17* |
| Challenge | .38* | .17* | .01 |
| Social Support | .08 | | |

* value is significant at $p < .05$

Table 3.9: Test if threat mediates the relationship between person variables and emotion-focused coping.

Step 1: Social anxiety and social support predict emotion-focused coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | .04 | .05* | .05* |
| Social Support | .23* | | |

Step 2: Threat appraisals predict emotion-focused coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|-----------|---------|-------|-------------|
| Threat | -.05 | .01 | .01 |

Step 3: Social anxiety and social support predict threat appraisals.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | .33* | .17* | .17* |
| Social Support | -.16* | | |

* value is significant at $p < .05$

Step 4

No step four because threat was not a significant predictor of emotion-focused coping in step two.

3.5.2.1.3 Mediation with Avoidance Coping as an Outcome Variable

It was expected that threat would mediate the relationship between social anxiety and avoidance coping. Mediation analysis mirrored that performed for both problem and

emotion-focused coping. A summary of the mediation analysis for avoidance coping can be found in table 3.10 (for challenge) and table 3.11 (for threat).

Table 3.10 Test if challenge mediates the relationship between person variables and avoidance coping.

Step 1: Social anxiety and social support predict avoidance coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | .16* | .05* | .05* |
| Social Support | -.09 | | |

Step 2: Challenge appraisals predict avoidance coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|-----------|---------|-------|-------------|
| Challenge | -.09 | -.01 | -.01 |

Step 3: Social anxiety and social support predict challenge appraisals.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | -.29* | .20* | .20* |
| Social Support | .27* | | |

* value is significant at $p < .05$

Step 4

No step four because challenge was not a significant predictor of avoidance coping in step two.

Table 3.11: Test if threat mediates the relationship between person variables and avoidance coping.

Step 1: Social anxiety and social support predict avoidance coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | .16* | .05* | .05* |
| Social Support | -.09 | | |

Step 2: Threat appraisals predict avoidance coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|-----------|---------|-------|-------------|
| Threat | .18* | .04* | .04* |

Step 3: Social anxiety and social support predict threat appraisals.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Social Anxiety | .33* | .17* | .17* |
| Social Support | -.16* | | |

Step 4: Social anxiety and avoidance coping mediated by appraisals of threat.

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------|---------|-------|-------------|
| Threat | .19* | .03* | .03* |
| Threat | .13 | .05* | .02 |
| Social Anxiety | .14 | | |

* value is significant at $p < .05$

The analysis of threat appraisals indicated support for a mediation model for avoidance coping. Coping was predicted by social anxiety but not social support. There was also a weak predictive relationship between threat and avoidance coping. Since social anxiety did not provide additional unique variance in step 4, the data provides support for the social anxiety-threat-avoidance focused coping mediation model.

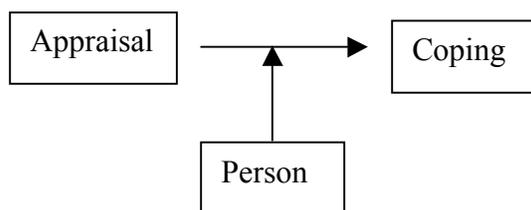
The regression analyses found no support for a challenge mediation model since challenge was not a significant predictor of avoidance coping.

3.5.3 Moderation Models:

3.5.3.1 Hypothesis 4: Cognitive Appraisals Moderate the Relationship Between Person Variables and Coping Functions (alternate hypothesis)

Moderator effects are interaction effects indicated by the interaction of person variables and appraisal variables in explaining coping functions. Figure 3.2 depicts an example of a moderating relationship (Baron & Kenny, 1986).

Figure 3.2: Example of a Moderator Variable



Person variable is a Moderator.

There are three steps in moderated regression (Miles & Shevlin, 2001). Step one involves centering the two variables proposed to interact with each other (person and appraisal variables) on their respective means. Once they are centered on their means,

then an interaction term (person x appraisal) is created. Centering on the mean is done to remove any correlation between the predictors so that the interaction term (person x appraisal) will not become multi-collinear with either or both of the predictors. The second step involves estimating the model with the predictor variables entered into a regression on the outcome variables (coping). The R^2 values and the beta values are examined for significance. A separate analysis was done on the three coping variables. The third step involves estimating the model with an interaction term present to see if the interaction adds any additional variance to the model beyond what is explained by the predictors alone. Again, the R^2 and the beta values are examined for significance. If the change in R^2 is significant and the interaction term is significant then there is evidence for a moderator effect. This effect indicates that the effect of person on coping will increase or decrease as appraisals change (Miles & Shevlin, 2001).

The interaction of social anxiety and threat was expected to predict both emotion-focused and avoidance coping. A summary of this analysis can be found in table 3.12 for problem-focused coping, table 3.13 for emotion-focused coping and table 3.14 for avoidance coping.

Table 3.12: Interaction of Social Anxiety and Threat Predicting Problem-focused Coping

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------------------|---------|-------|-------------|
| Social Anxiety | -.19* | .04* | .04* |
| Threat | -.037 | | |
| Social Anxiety | -.18* | .05* | .01 |
| Threat | -.02 | | |
| Social Anxiety x Threat | -.11 | | |

Table 3.13: Interaction of Social Anxiety and Threat Predicting Emotion-focused Coping

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------------------|---------|-------|-------------|
| Social Anxiety | -.02 | .00 | .00 |
| Threat | -.04 | | |
| Social Anxiety | -.01 | .01 | .00 |
| Threat | -.03 | | |
| Social Anxiety x Threat | -.06 | | |

* value is significant at $p < .05$

Table 3.14: Interaction of Social Anxiety and Threat Predicting Avoidance Coping

| Predictor | β | R^2 | $R^2\Delta$ |
|----------------------------|---------|-------|-------------|
| Social Anxiety | .14 | .05* | .05* |
| Threat | .13 | | |
| Social Anxiety | .15 | .05* | .00 |
| Threat | .14 | | |
| Social Anxiety x Threat | -.04 | | |

* value is significant at $p < .05$

The interaction between social anxiety and threat was not significant in predicting emotion-focused or avoidance coping, thus the hypothesis was not supported. Although social anxiety and threat are significantly correlated with avoidance coping, when they are entered in a regression they are not independently significant predictors of avoidance coping. This may be due to the fact that although the model is significant, the variance that is being explained by these two predictors is very low. Given the moderate correlation between social anxiety and threat, they do not make individual contributions when entered in the same equation.

It was expected that the interaction of social support and challenge appraisal would predict both problem-focused and emotion-focused coping. A summary of the results from these analyses can be found in table 3.15 for problem-focused coping, table 3.16 for emotion-focused coping and 3.17 for avoidance coping.

Table 3.15: Testing Moderating Variables: The Relationship between Social Support and Challenge Appraisal on Problem-focused Coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|-------------------------------|---------|-------|-------------|
| Social Support | .20* | .29* | .29* |
| Challenge | .44* | | |
| Social Support | .20* | .29* | .00 |
| Challenge | .44* | | |
| Social Support x Challenge | .02 | | |

* value is significant at $p < .05$

Table 3.16: Testing Moderating Variables: The Relationship between Social Support and Challenge Appraisal on Emotion-focused Coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|-------------------------------|---------|-------|-------------|
| Social Support | .08 | .17* | .17* |
| Challenge | .38* | | |
| Social Support | .09 | .18* | .00 |
| Challenge | .39* | | |
| Social Support x Challenge | .08 | | |

* value is significant at $p < .05$

Table 3.17: Testing Moderating Variables: The Relationship between Social Support and Challenge Appraisal on Problem-focused Coping.

| Predictor | β | R^2 | $R^2\Delta$ |
|-------------------------------|---------|-------|-------------|
| Social Support | -.13 | .02 | .02 |
| Challenge | -.05 | | |
| Social Support | -.14 | .03 | .01 |
| Challenge | -.06 | | |
| Social Support x Challenge | -.09 | | |

The interaction between social support and challenge was not a significant predictor of either problem-focused or emotion-focused coping. Thus the moderator hypothesis was not supported.

4 CHAPTER IV

4.1 Discussion

This study explored the utility of the Cognitive-Motivational-Relational (CMR) stress model (Lazarus, 1991, 1999, 2000) in predicting how adolescent female athletes coped with interpersonal stress. This model holds that person variables influence how a stressful situation is appraised, and that the way a situation is appraised will influence how an individual chooses to cope. The CMR model holds that person and environmental variables influence how a potential stressful situation is appraised, and, in turn, how an individual chooses to cope. The present study examined different models of the stress process specifying relationships between person variables, appraisal variables and coping. The key person variables examined were trait social anxiety and perceptions of teammate social support. These variables were proposed to either mediate or to moderate perceptions of threat and challenge and subsequent types of coping to a scenario describing a hypothetical interpersonal conflict on a soccer team. Although many of the findings were consistent with the CMR model, there were several unexpected results. The following sections discuss the specific findings and their implication and ramifications.

4.2 Examining Social Support and Social Anxiety

The findings indicated a moderate negative relationship between social anxiety and perceived teammate social support. This result supports previous research that has revealed that more anxious individuals report receiving less social support than do less anxious individuals (Caldwell & Reinhart, 1988). It is also consistent with sport research that found that experienced male body-builders had lower trait social anxiety related to the body and higher social support compared to less experienced body builders (Hurst et al., 2000). These findings are the first to

examine social support and social anxiety relationships in female adolescent athletes managing potential interpersonal stress.

Understanding the possible reasons for a lack of perceived social support by those individuals who are socially anxious is important for coaches and sport practitioners to understand so they can be sensitive to differences and foster positive interactions in their team environment. The negative relationship between social anxiety and perceptions of support may be indicative of the ways in which socially anxious individuals interact with others. These interactions appears to influence the ability to form meaningful relationships (Leary, 1983c) When socially anxious individuals do interact with others they will tend to behave in ways that reduce their amount of social contact including withdrawing both physically and emotionally and therefore spend less time interacting with others making friends (Leary & Kowalski, 1995). However, it is important to note that social anxiety levels in the present group of female athletes were only moderate. The social nature of team sports may discourage social anxious high school students from competing.

In the introduction, various hypotheses that outline the nature of the relationship between social anxiety and social support were reviewed. The design of the present study does not allow for the testing of these specific hypotheses. Nevertheless, this study found evidence that trait social anxiety is related negatively related to perceptions of teammate social support. Future research should investigate the underlying reasons for why socially anxious individuals have low perceptions of social support. As social support is an important coping resource in adolescence, finding ways to increase a socially anxious individual's levels of perceived social support may increase her enjoyment of sport, her participation levels, and her motivation to begin or continue participating in sport. However, establishing the causal connection between social support and

social anxiety is challenging. The better way to examine the relationship between social anxiety and social support would be to use longitudinal designs (Calsyn et al., 2005).

4.3 Social Support, Social Anxiety, and Appraisal Relationships

The relationship among social support, social anxiety, challenge, and threat were all in the expected direction. The relationships among these variables and their implications for understanding interpersonal sport stress is discussed below.

As expected, individuals that appraised the interpersonal stress scenario as threatening typically did not appraise it as challenging. This result supports some previous literature on cognitive appraisals. One of the main differences between challenge and threat identified in the literature is that challenge is often associated with positive expectancies and positive emotions, whereas threat is associated with negative expectations and negative emotions (Lazarus & Folkman, 1984; Skinner & Brewer, 2002). When a situation is appraised as challenging, the individual is able to focus on potential gain, and thus is often associated with emotions such as eagerness, excitement and exhilaration (Lazarus & Folkman, 1984). Threat appraisals happen when an individual focuses on the potential harm in a situation and is often associated with emotions such as fear, anxiety and anger (Lazarus & Folkman, 1984).

Even though threat and challenge are typically associated with negative and positive emotions respectively, these two cognitive appraisals should not always be seen as mutually exclusive as they both require the recruitment of coping efforts (Lazarus & Folkman, 1984). It is possible for someone to appraise a situation as both threatening and challenging, depending on their personality as well as their coping resources. Folkman and Lazarus (1985) examined cognitive appraisals of students and found that prior to a college examination, 94% of the students were experiencing both challenge and threat. Lazarus and Folkman (1984) emphasized

that they do not view challenge and threat appraisals as poles on a single continuum and although they can occur simultaneously, they should be considered separate. Adolescent athletes may see both the potential for benefit (resolving the situation and maintaining social status and social relationships) as well as the potential for harm/ loss (loss of social status and social relationships).

When an individual appraises a situation as threatening it suggests that there is some potential danger to their well being or their self esteem (Lazarus, 1991; Lazarus & Folkman, 1984; Sarason & Sarason, 1990) in addition to low confidence in their ability to cope with the threat (Bandura, 1997; Lazarus, 1991; Lazarus & Folkman, 1984) and higher levels of anxiety (Sarason & Sarason, 1990; Skinner & Brewer, 1999, 2002). Individuals who often feel anxiety in social situations anticipate failure and negative evaluation and interpret such negative outcomes as significant threats to their self-confidence (Schlenker & Leary, 1982). As expected, in the present study threat was positively correlated with social anxiety and negatively correlated with social support.

The relationship of social support and social anxiety with threat appraisal in the present study is consistent with the theoretical literature. Social anxiety arises from the prospect of interpersonal interactions or social situations where one will be evaluated. Creating a scenario of interpersonal stress, with some level of ambiguity, will lead athletes who are already socially anxious to perceive it as threatening. An absence of social support from teammates may also create more threat. It appears that having a coping resource on the team can protect or buffer athletes from appraising the scenario as threatening (and allowed them to appraise it as a challenge). Something as simple as having a close friend on the team may allow athletes to manage potentially stressful interpersonal transactions in sport (Crocker, Hoar et al., 2004; Weiss & Stuntz, 2004) The importance of this coping resource and the strong impact it may have on an

adolescent's appraisal of an interpersonal transaction on a sports team should be understood by coaches in order to facilitate the development of positive social relationships within their team.

The present study indicated that challenge is an important appraisal in the stress process, and it was moderately linked to the perceptions of social support. Challenge has typically not been examined in the sport stress literature, although there is both theoretical and empirical support for its importance in the general stress literature. When individuals perceive a challenge, they focus on opportunities for success, social rewards (recognition and praise), mastery, learning, and personal growth (Lazarus, 1991; Lazarus & Folkman, 1984; Lazarus et al., 1980; Skinner & Brewer, 2002). An appraisal of challenge indicates that, with some effort, the demands of a stressful situation can be overcome (Lazarus et al., 1980; Skinner & Brewer, 2002).

Those athletes who had high perceptions of social support subsequently found the scenario challenging. This finding may be attributed to the buffering effect of social support where the support works to reduce the negative effects of stress by providing individuals with a resource for coping with stress (Holt & Hoar, 2006). An appraisal of challenge often indicates that the demands of a stressful situation can be overcome and that the individual has the resources in which to do so (Lazarus et al., 1980; Park & Folkman, 1997). The perception of teammate support will often provide the athlete with the necessary resources to deal with stress coming from another teammate. Individuals who perceived support to be available from teammates were more likely to perceive the stress scenario as challenging as they had a coping resource within the team.

4.4 Appraisal and Coping Functions Relationships

The CMR model of stress holds that coping with interpersonal stress is influenced by appraisal. Coping is complex, in that athletes can use a combination of problem-focused,

emotion-focused, and avoidance strategies to manage the stress transaction. The present study proposed a number of specific hypotheses in regards to specific appraisal-coping relationships. Below is a review and discussion of the implications of the present findings.

Emotion-focused coping is concerned with managing the emotion experience of the athlete in a stressful transaction. Based on previous literature (see Anshel et al., 2001; Lazarus & Folkman, 1984) it was expected to find threat appraisals would predict emotion-focused coping. The results provide a complex and somewhat confusing picture. When simple correlations were considered, emotion-focused coping was significantly correlated with an appraisal of challenge, but did not significantly correlate with threat. This was an unexpected result. However, when multiple regression was used to predict emotion focused coping, threat and challenge were both significant predictors, although challenge was the dominant predictor. This indicates a suppression effect (Cohen et al., 2003). When challenge and threat are forced into regression together, challenge acts as a suppressor, by removing the shared variance with threat, and thus enhancing the relationship between threat and emotion-focused coping.

The emergence of challenge as a dominant predictor of emotion-focused coping was surprising and not consistent with the hypothesis. Based on previous research it was expected that threat appraisals, would predict emotion-focused coping. In general, emotion-focused forms of coping are more likely to occur when there has been an appraisal that little can be done to modify stressful environmental conditions (Lazarus & Folkman, 1984). Conway and Terry (1992) and Peacock, Wong and Reker (1993) found that situations appraised as threatening and uncontrollable were associated with increased emotion-focused coping. However, emotion-focused strategies can also be used as part of a complex coping pattern involving problem-focused coping to deal with stressful transactions (see Hoar et al., 2006). Athletes may need to manage their emotional distress before and during the implementation of problem-focused

strategies to change a stressful interpersonal situation. A key emotion and problem-focused strategy used to manage interpersonal stress is seeking social support for both emotional and instrumental purposes (Hoar et al., 2006; Nicholls & Polman, 2007). It should be noted that emotion-focused and problem-focused coping were moderately correlated, supporting the notion that many athletes believed they would use both types of coping to manage the interpersonal stressor.

Challenge appraisals are also associated with perceived social support. Athletes perceiving support to be available from their teammates were able to appraise the scenario as challenging, and subsequently used emotion-focused coping to deal with the stress they appraised. These athletes could perceive that emotion-focused coping (dealing with the negative emotions associated with stress) possibly by talking with a teammate about the problem would enable them to overcome the stress of the scenario. It is possible that the athletes felt they could use both emotion-focused and problem-focused coping. For an adolescent in an interpersonal conflict, dealing with the problem directly (problem-focused coping) may not be enough. They may need to talk with their teammates about how this experience has made them feel (emotion-focused coping), and only those athletes that perceive this support to be available will be able to use this coping function in order to overcome the stress.

Problem-focused coping primarily concerns the use of strategies to change the person-environment transaction. Consistent with expectation, this study found that problem-focused coping was significantly correlated with an appraisal of challenge and not correlated with threat appraisals. Again, the regression analysis found evidence of suppression, as both threat and challenge were positive and significant predictors of problem-focused coping, although challenge was the dominant predictor. As challenge and threat are not mutually exclusive (Lazarus & Folkman, 1984), both appraisals will generate the need for some coping behaviors. So regardless

of whether there was an appraisal of challenge or threat, the athlete will need to cope with the interpersonal conflict.

The link between challenge appraisals and coping are consistent with the general CMR model as well as related literature. Problem-focused coping is more probable when such conditions are appraised as amenable to change (Folkman & Lazarus, 1980: from Lazarus & Folkman, 1984). Terry (1991) and Peacock, Wong and Reker (1993) found that situations that were appraised as challenging and controllable were related to engaging in problem-focused coping. Franks and Roesch (2006) found that cancer patients who made challenge appraisals engaged in problem-focused coping strategies.

Nevertheless, the threat-problem-focused coping findings do not fully support previous research. Although threat appraisals were shown to predict problem-focused coping in this study, this result should be interpreted with caution. Threat appraisals were only significant predictors of problem-focused coping when they were entered with challenge. The suppression effect of challenge on threat appraisals has not been observed in previous literature. Additionally, threat appraisals have not been positively associated with the use of problem-focused coping in past literature. Theoretically, there is no reason for threat appraisals to positively predict the use of problem-focused coping strategies. It might be that this relationship between threat and problem-focused coping is a statistical artifact produced by the specific type of forced entry regression analysis.

Avoidance coping involves the athlete actually removing herself from the stressful situation as opposed to problem-focused and emotion-focused coping where the individual makes an effort to manage stress while remaining in the situation (Kowalski & Crocker, 2001). As expected, avoidance coping was significantly correlated with an appraisal of threat. Nevertheless, threat only explained a very small percentage of the variance. This weak

relationship was somewhat unexpected as previous research has suggested that avoidance coping is one of the most common ways adolescents deal with stress (see Hoar et al., 2006). However, some sport research has shown a low correlation between the use of avoidance coping and appraisals of threat (Anshel, 2001). Avoidance coping is more likely under low perceived control conditions and situations associated with negative emotions (Anshel, 1996), and can be maladaptive if they draw the person's attention away from a problem that needs to be addressed (Folkman & Lazarus, 1991). The use of a hypothetical scenario might have contributed to the lack of prediction of avoidance coping. It is difficult to create the strong negative emotions present in real stressors, thus athletes might not feel a need to resort to avoidance strategies.

4.5 Examining Mediator and Moderator Models of the Stress Process

A major purpose of this thesis was to examine mediator and moderator models of the stress process. It is clear in this study that social anxiety and social support were related to appraisal, and that specific types of appraisal are predictive of specific coping functions. However, is the relationship between the person variables (social anxiety and social support) and coping mediated or moderated by appraisals? The present findings suggested support for either complete or partial mediation and no support for moderation. The following section discusses the implication of these findings.

This research identified that the relationship between social support and problem-focused coping was partially mediated by an appraisal of challenge. As a full mediation was expected, this result partially supports the original hypothesis. Girls in this study who scored high in social support had higher challenge appraisals and subsequently thought they would use more problem-focused coping. As there was only a partial mediation, social support still had a direct effect on problem-focused coping. Having perceptions of social support will influence the likelihood of

using problem-focused coping strategies during a time of interpersonal conflict beyond that expected by challenge appraisals. It should be noted that challenge appraisals were a stronger correlate of problem-focused coping than social support.

It is difficult to determine why challenge only partially mediated the social support-problem-focused relationship. One reason might be that perceptions of social support may reflect actual perceptions of problem-focused coping related to seeking social support. Problem-focused coping can be used to manage stressful transaction appraised in various manners. Research has indicated that the higher the perceived stress, the higher the level of both problem-focused and emotion-focused strategies (Lazarus, 1991; Hoar et al., 2006). Seeking social support is a key strategy to manage interpersonal stress. Thus, the perceived availability of social support might lead youth female athletes to believe they would try to change the situation whether the situation was appraised as challenging, threatening, or some combination of both appraisals. There is a lack of research that investigates the mediating relationship between social support and challenge appraisals and problem-focused coping. Given the significant findings, this information should encourage others to investigate the role that social support plays in appraisals and coping in female adolescent sport.

When the study examined emotion-focused coping, there was support for the hypothesis that challenge would mediate social support-emotion-focused coping. The variance in emotion-focused coping that was explained by social support in the initial step of the regression can actually be explained by changes in challenge appraisals, rather than in social support. During interpersonal stress in female adolescent sport, the use of emotion-focused coping can be predicted by challenge appraisals. Social support influences these appraisals of challenge which, in turn, influenced the use of emotion-focused coping strategies to deal with interpersonal stress. What is not clear, however, is why the findings did not produce a partial mediation effect

similar to the one observed for problem-focused coping. Indeed the study expected that threat would be the prime predictor of emotion-focused coping and would mediate social anxiety effects. This was not observed. There is a lack of research investigating cognitive appraisals in a sport setting and the results of the current study warrant future research on cognitive appraisals in sport and how person variables influence the appraisals and subsequent coping strategies.

Avoidance coping represents athletes attempt to remove themselves from a stressful transaction. It was expected to find that social anxiety would be related to both threat and avoidance coping, with threat appraisals acting as a mediator. Threat appraisals did fully mediate the relationship between avoidance coping and social anxiety, although the amount of variance explained was quite low. The weak findings might be due to the use of hypothetical scenario methodology. Athletes might not feel the same level of distress using this method compared to a real life stressor. Furthermore, athletes may only use avoidance when they believe the stressor is intense, they have little control, and feel overwhelmed. Holahan and Moos (1987) noted people with more personal and environmental resources may rely more on active coping and less on avoidance coping. This area needs to be explored in more detail in future research.

4.6 Summary of the Key Findings

This study looked at how key person and appraisal variables influenced how female high school soccer players thought they would cope with interpersonal stress. The key finding was that the appraisal of challenge was linked to both emotion and problem-focused coping. The effects of person variables (social anxiety and social support) on coping were largely mediated by challenge appraisals. Challenge appraisals fully mediated the relationship between social support and emotion-focused coping and partially mediated the relationship between social support and problem-focused coping.

Social support was a more important person variable in terms of predicting appraisal and coping compared to social anxiety. Social support predicted both threat and challenge appraisals. It also had a direct impact on problem-focused coping. Surprisingly, social anxiety had very little impact on coping, predicting only a small effect with avoidance coping. Social anxiety also had a moderate influence on threat appraisals. It was a surprising result to find that social anxiety did not emerge as a significant predictor of coping.. This lack of prediction questions the need to access personality in predicting specific coping behaviours. One direction that future research may be useful would be to identify factors that do significantly predict coping behaviours.

The results of this study indicate the importance of better understanding cognitive appraisals in coping with interpersonal stress. Cognitive appraisals are reflective of the individual's goals, goal importance, ego involvement, coping resources and coping potential. Cognitive appraisals and the various factors that may influence appraisal in a sport setting need to be investigated in more detail. Such knowledge has strong practical ramifications. If coaches understand how cognitive appraisals are generated in adolescent sport, then they may be able to influence these appraisals, thus enabling athletes to appraise situations as more challenging and less threatening. This information about cognitive appraisals will help to provide coaches with the resources to aid their athletes, allow them to have positive cognitive appraisals, and influence the outcome of their sporting experience.

4.7 Limitations

This study had a number of limitations such as the demographics, hypothetical scenario, procedures and sport representation the findings are appropriate for a population of female high school soccer players between the ages of 13-18 living in Vancouver. It would be inappropriate to generalize these findings to a different age group, or a team that does not operate in a school

environment. For example, female adolescents participating on a non-school soccer team such as a district select may respond differently to interpersonal stress given that the interpersonal relationships and the motivational factors on such a team may be much different compared to school based team.

This research tried to control for problems in previous research in terms of the variability of stressors by using a hypothetical stress scenario. This method, however, is also a limitation for two reasons. First, the way the athletes answered questions in the scenario describe how they think they would behave, which may be different from how they would actually behave. Second, this hypothetical stressor was designed in such a way to elicit greater perceptions of threat from athletes who were socially anxious. Therefore, some athletes might not have found the situation to be threatening or to even have the potential for benefit. Therefore the coping efforts may be different if they had been asked to describe a personally relevant interpersonal stressor.

Another limitation is that this research investigated a team sport environment and tested for social anxiety. It is likely that adolescents who are socially anxious would avoid a team sport environment and this may explain why we did not observe a high occurrence of social anxiety.

Another limitation is that there was no assessment of all potential appraisals that could impact coping. For example, perceived controllability has been linked to coping style in sporting populations (Anshel 1996; Anshel et al., 1997; Anshel, 2001). Future research should investigate whether specific cognitive appraisals such as controllability should be incorporated into interpersonal sport stress research.

Another limitation was the use of the median replacement method. Despite the fact that this method is considered conservative approach (Duffy, 2006), there are three main disadvantages noted by Hair, Anderson, Tatham and Black (1998). First, it nullifies the variance estimates derived from the standard variance formulas by understating the data's true variance.

Second, it distorts the actual distribution of values. Third, it lowers the observed correlation that the variables will have with other variables because the missing data for each individual have a constant value, thus reducing variance.

4.8 Future Directions

Given the complexity of the Cognitive-Motivational-Relations model of stress, and the inherent limitations of the present research study, there are several factors that need to be explored in future research. These factors include personality, cognitive appraisal, coping effectiveness, stress situations, and their various interactions. First, the importance of personality in predicting positive appraisals in this study was not demonstrated. Social anxiety was not a strong significant predictor of either appraisal or coping. There may be a need to examine other personality variables, such as optimism, and how they are linked to positive stress and challenge, shifting a focus from negative to positive stress might shed light on how athletes effectively manage and cope with stress. Learning what works will enable sport coaches and practitioners to more effectively help athletes cope with potential stress in competitive sport.

Second, this study indicated that challenge appraisal was a key appraisal variable and suggests that this appraisal should be considered in future research on positive stress. An appraisal of challenge indicates that the individual sees some potential for benefit, and that they have the resources to deal with the situation. Identifying person factors in addition to social support that are significant predictors of challenge appraisals will help to identify key variables that are involved in positive sport stress.

Third, coping effectiveness was not measured in this study, primarily because the situation was hypothetical. Future research could shed light on the effectiveness and outcomes of using coping strategies, and how this relates to emotions and other outcomes (Nicholls et al., 2007).

Understanding what strategies are effective in specific sport stress situations can help inform practice.

Fourth, gathering data from different sports stressors as well as specific types of sport would provide more complete information on the influence of the sport on personality, stress, appraisal and coping. There are various types of sport stressors (Gould et al., 1997; Kowalski & Crocker, 2001) as well as the duration of stressors (acute, chronic, intermittent; Kowalski, 2007). Further, the type of sport might also impact the appraisal of stress, the effectiveness of social support, as well as the effectiveness of various coping strategies (Hoar et al., 2006; Nicholls et al., 2007). Gathering as much information as possible about adolescent appraisals and coping with stress will likely make a coach's job easier when trying to facilitate positive social interactions on their team.

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Appendices

APPENDIX A

Study Demographic Information

Demographic Information:

1. How old are you? _____ years.
2. Based on these categories from the Canadian Census, how would you describe yourself?

PLEASE CHECK ALL THAT APPLY:

- White/Caucasian
- Chinese
- Japanese
- Korean
- Aboriginal/First Nation (e.g., North American Indian, Métis, Inuit)
- Filipino
- South Asian (e.g., East Indian, Pakistani, Punjabi, Sri Lankan)
- South East Asian (e.g., Cambodian, Indonesian, Vietnamese)
- Black (e.g., African, Haitian, Jamaican, Somali)
- West Asian/Middle East (e.g., Afghani, Arab, Iranian)
- Other ethnic/cultural group, please specify:

APPENDIX B

Interaction Anxiousness Scale.

Interaction Anxiousness Scale

Indicate the degree to which each statement is characteristic or true of you.

- 1: Not at all
- 2: Slightly
- 3: Moderately
- 4: Very
- 5: Extremely

| | Not at all | | | Extremely | |
|--|------------|---|---|-----------|---|
| 1. I often feel nervous even in casual get-togethers | 1 | 2 | 3 | 4 | 5 |
| 2. I usually feel uncomfortable when I am in a group of people I don't know. | 1 | 2 | 3 | 4 | 5 |
| 3. I am usually at ease when speaking to a member of the opposite sex. | 1 | 2 | 3 | 4 | 5 |
| 4. I get nervous when I must talk to a teacher or boss. | 1 | 2 | 3 | 4 | 5 |
| 5. Parties often make me feel anxious and uncomfortable. | 1 | 2 | 3 | 4 | 5 |
| 6. I am probably less shy in social interactions than most people. | 1 | 2 | 3 | 4 | 5 |
| 7. I sometimes feel tense when talking to people of my own sex if I don't know them very well. | 1 | 2 | 3 | 4 | 5 |
| 8. I would be nervous if I was being interviewed for a job. | 1 | 2 | 3 | 4 | 5 |
| 9. I wish I had more confidence in social situations. | 1 | 2 | 3 | 4 | 5 |
| 10. I seldom feel anxious in social situations. | 1 | 2 | 3 | 4 | 5 |
| 11. In general, I am a shy person. | 1 | 2 | 3 | 4 | 5 |
| 12. I often feel nervous when talking to an attractive member of the opposite sex. | 1 | 2 | 3 | 4 | 5 |
| 13. I often feel nervous when calling someone I don't know very well on the telephone. | 1 | 2 | 3 | 4 | 5 |
| 14. I get nervous when I speak to someone in a position of authority. | 1 | 2 | 3 | 4 | 5 |
| 15. I usually feel relaxed around other people, even people who are quite different from me. | 1 | 2 | 3 | 4 | 5 |

APPENDIX C

Social Provisions Scale.

Social Provisions Scale

Indicate the degree to which each statement is true or characteristic of you.

1: strongly disagree

2: somewhat disagree

3: somewhat agree

4: strongly agree

| | Strongly Disagree | | | Strongly Agree |
|--|----------------------|---|---|-------------------|
| 1. There are teammates I can count on to train with me. | 1 | 2 | 3 | 4 |
| 2. I do not have any teammates who are athletic. | 1 | 2 | 3 | 4 |
| 3. There is no teammate I can turn to for advice about my sport. | 1 | 2 | 3 | 4 |
| 4. There are teammates who depend on me to help them be a better player. | 1 | 2 | 3 | 4 |
| 5. I know teammates who enjoy the same sport skills that I do. | 1 | 2 | 3 | 4 |
| 6. Other teammates think of me as being athletic. | 1 | 2 | 3 | 4 |
| 7. I feel personally responsible for helping another teammate be a better player. | 1 | 2 | 3 | 4 |
| 8. I am part of a team who has the same attitudes about sport. | 1 | 2 | 3 | 4 |
| 9. Other teammates do not respect my physical skills and abilities. | 1 | 2 | 3 | 4 |
| 10. There is no one to take over chores for me so I have time to be involved in sport. | 1 | 2 | 3 | 4 |
| 11. I am good friends with at least one teammate who values sport. | 1 | 2 | 3 | 4 |
| 12. There is a teammate I can talk to about my sport. | 1 | 2 | 3 | 4 |
| 13. There are teammates who recognize my skills and abilities at my sport. | 1 | 2 | 3 | 4 |
| 14. There is no teammate who shares my interests about my sport. | 1 | 2 | 3 | 4 |
| 15. No teammate relies on me for help with their sport. | 1 | 2 | 3 | 4 |
| 16. There is a teammate I can turn to for advice if I have problems with my sport. | 1 | 2 | 3 | 4 |
| 17. I have close relationships with teammates who make me feel good about myself. | 1 | 2 | 3 | 4 |
| 18. There is no teammate who rewards me for being physically active. | 1 | 2 | 3 | 4 |
| 19. There is no teammate who I feel comfortable talking about sport. | 1 | 2 | 3 | 4 |

| | | | | |
|--|---|---|---|---|
| 20. There are teammates who admire my talents and abilities regarding sport. | 1 | 2 | 3 | 4 |
| 21. I am not close to any teammate who values sport. | 1 | 2 | 3 | 4 |
| 22. There is no teammate who likes the same sport activities I do. | 1 | 2 | 3 | 4 |
| 23. There are teammates who will change their schedule to train with me. | 1 | 2 | 3 | 4 |
| 24. No teammate counts on me to train with them. | 1 | 2 | 3 | 4 |

APPENDIX D

Hypothetical Written Scenario.

Scenario:

A scenario was used to create a constant environmental interpersonal stressor. Each participant was presented with the following scenario:

You have been hearing rumors from some non-teammate friends that people on your team have been talking about you. You have heard that something has been said with respect to your attitude and behavior on the team but when you press for more information no one seems to really know more. You arrive at practice one afternoon and a few of your teammates are leaving the change room and onto the playing field. When they see you they stop talking among themselves. They smile at you and say hello but don't stop to chat. When you leave the change room and head out for practice, three of them are on the field in a circle talking to one another. They are too far away so that you cannot tell what they are saying, or the tone of their voices. They acknowledge your presence on the field but they do not seem to be their usual friendly selves. They don't say anything to you directly, or do anything that would lead you to believe that you have done something to upset them. Furthermore, you can't think of something that you have done recently, or something that has happened that would make them upset. The practice continues and finishes as usual but the level of personal interaction among all players seems lower than normal. After practice everyone is polite but there is not a lot of small talk and joking around. Some players are heading out to socialize together but no one invites you along. You head home to finish up some homework.

APPENDIX E

Stress Appraisal Measure

Stress Appraisal Measure

Respond to each of these questions with respect to how you think and feel about the **scenario** you have just read.

- 1: not at all true
- 2: slightly true
- 3: moderately true
- 4: very true
- 5: extremely true

| | Not at all | | | | Extremely |
|--|------------|---|---|---|-----------|
| 1. I have the ability to overcome this stressful situation. | 1 | 2 | 3 | 4 | 5 |
| 2. I can positively attack this stressful situation. | 1 | 2 | 3 | 4 | 5 |
| 3. I have what it takes to beat this stressful situation. | 1 | 2 | 3 | 4 | 5 |
| 4. I am eager to tackle this problem. | 1 | 2 | 3 | 4 | 5 |
| 5. I feel I can become stronger after experiencing this stressful situation. | 1 | 2 | 3 | 4 | 5 |
| 6. I have the skills necessary to overcome this stressor. | 1 | 2 | 3 | 4 | 5 |
| 7. I am excited about the potential outcome of this stressor. | 1 | 2 | 3 | 4 | 5 |
| 8. I perceive this stressor as threatening. | 1 | 2 | 3 | 4 | 5 |
| 9. I feel totally helpless in this situation. | 1 | 2 | 3 | 4 | 5 |
| 10. I feel anxious in this situation. | 1 | 2 | 3 | 4 | 5 |
| 11. This stressful event will impact me greatly. | 1 | 2 | 3 | 4 | 5 |
| 12. This stressful situation is beyond my control. | 1 | 2 | 3 | 4 | 5 |

APPENDIX F

Coping Functions Questionnaire.

Coping Function Questionnaire

We are interested in how you think you would **handle this scenario**. We are not concerned with things that you would do for other situations you might encounter in your sport.

Indicate on a scale how much each statement applies to you. Answer the questions as honestly and accurately as possible. There are no right and wrong answers.

- 1: Not at all
- 2: A little
- 3: Somewhat
- 4: Quite a bit
- 5: Very much

| | Not at all | | | Very much | |
|---|------------|---|---|-----------|---|
| 1. I would try and find a way to change the situation. | 1 | 2 | 3 | 4 | 5 |
| 2. I would stay in the situation and try and control my emotions to better deal with it. | 1 | 2 | 3 | 4 | 5 |
| 3. I would work harder to try and change the situation. | 1 | 2 | 3 | 4 | 5 |
| 4. I would try and change how I was thinking about the situation, so it didn't seem as stressful to me. | 1 | 2 | 3 | 4 | 5 |
| 5. I would try and get out of the situation as soon as I could to reduce the stress. | 1 | 2 | 3 | 4 | 5 |
| 6. I would use strategies to change the situation in order to deal with the stress. | 1 | 2 | 3 | 4 | 5 |
| 7. I would try to view the situation in a way that made it seem less stressful. | 1 | 2 | 3 | 4 | 5 |
| 8. I would try to leave or avoid the situation to get away from the problem or to reduce the stress. | 1 | 2 | 3 | 4 | 5 |
| 9. I would do my best to change the situation. | 1 | 2 | 3 | 4 | 5 |
| 10. I would try to use different strategies that would help me control my emotions. | 1 | 2 | 3 | 4 | 5 |
| 11. I would look for ways to solve the problem or to change the situation. | 1 | 2 | 3 | 4 | 5 |
| 12. I would try to get out of the situation and away from the stress. | 1 | 2 | 3 | 4 | 5 |
| 13. I would stay in the situation and try and change it. | 1 | 2 | 3 | 4 | 5 |
| 14. I would work through my emotions in order to feel better. | 1 | 2 | 3 | 4 | 5 |
| 15. I would try to get away from the situation to reduce the stress. | 1 | 2 | 3 | 4 | 5 |
| 16. I would try to find ways to control my emotions. | 1 | 2 | 3 | 4 | 5 |
| 17. I would try to relax so that I could keep my emotions under control. | 1 | 2 | 3 | 4 | 5 |
| 18. In order to reduce the stress I would try and remove myself from the situation. | 1 | 2 | 3 | 4 | 5 |

APPENDIX G

Letter of Initial Contact for Principal



**Letter of Initial Contact to Principal
Examining coping functions in adolescent female athletes.**

Principal Investigator:

Peter Crocker, Ph.D.
School of Human Kinetics
University of British Columbia
Contact number: 604-822-5580
pcrocker@interchange.ubc.ca

Co-investigator:

Clare Cayley, Graduate Student
School of Human Kinetics
University of British Columbia
Contact number: 604-822-0219
ccayley@interchange.ubc.ca

To whom it may concern:

This letter is to inform you of a study that is being conducted at UBC, to explain the purpose of the study and to request the participation of student athletes from your school. Within one week of receiving this letter you will be receiving a phone call from the primary researcher to discuss participation and answer any questions that you may have.

Purpose of study:

The purpose of this study is to examine coping by female athletes in team sport. We are interested in looking at how these athletes cope with a hypothetical interpersonal conflict and how social support from teammates and social anxiety play a role in the process of coping. There is no evaluation of coaching behaviour.

- This research is part of a graduate masters thesis.
- This research is funded by a Social Sciences and Humanities Research Council of Canada.

Study Procedures:

Participation involves the athlete completing 5 questionnaires once during lunch hour or after school. The questionnaires each have a specific focus and deal with evaluating coping, social support, social anxiety, and perception of stress. The questionnaires will take approximately 30 minutes to complete. Student athletes who do not participate will not be required to be present during the study.

Benefits and Risks to Participants:

There are no known physical or psychological risks associated with participation in this research study. Effort will be made to minimize any risks associated with self-report data, such as not asking for names or contact information on the

questionnaires, and using responses for descriptive purposes only. No gender, race, or social class stereotyping will be made with the information provided in the questionnaires. Participants will receive a \$5 stipend for their participation.

Confidentiality:

Information gathered on the questionnaire will be used for research purposes only, and the identity of individual participants will not be recorded or revealed at any time. All completed questionnaires will be identified by code number only and will be securely stored for a minimum of five years as required by the University of British Columbia guidelines.

- Results of this study will be analyzed in group form and will be used in the preparation of a masters thesis, academic research publications, and presentations, all of which are public documents. A summary of the results will be available upon request.
- The students and their guardians will be advised of any new information that may influence her decision to participate in the study
- There is no conflict of interest between the participating schools, UBC, and the identified researchers.
- You do not waive any legal rights by reading and/or signing the consent form.

Contact information about the rights of research subjects:

If you have any concerns about the treatment or rights of research participants, you may contact the Research Subject Information Line at 604-822-8598.

Contact information about the study:

If you have any questions concerning the procedures of this study or desire further information please contact Dr. Peter Crocker at (604) 822-5580 or Clare Cayley (604) 822-0219.

Thanks for your time,

Sincerely,

Clare Cayley
ccayley@interchange.ubc.ca
(604) 822-0219

APPENDIX H

Letter of Initial Contact for Coach.



**Letter of Initial Contact to Coach
Examining coping functions in adolescent female athletes.**

Principal Investigator:

Peter Crocker, Ph.D.
School of Human Kinetics
University of British Columbia
Contact number: 604-822-5580
pcrocker@interchange.ubc.ca

Co-investigator:

Clare Cayley, Graduate Student
School of Human Kinetics
University of British Columbia
Contact number: 604-822-0219
ccayley@interchange.ubc.ca

To whom it may concern:

This letter is to inform you of a study that is being conducted at UBC, to explain the purpose of the study and to request the participation of student athletes from your team. Within one week of receiving this letter you will be receiving a phone call from the primary researcher to discuss participation and answer any questions that you may have.

Purpose of study:

The purpose of this study is to examine coping by female athletes in team sport. We are interested in looking at how female athletes cope with a hypothetical interpersonal conflict and how social support from teammates and social anxiety play a role in the process of coping. There is no evaluation of coaching behaviour.

- This research is part of a graduate masters thesis.
- This research is funded by a Social Sciences and Humanities Research Council of Canada.

Study Procedures:

Participation involves the athlete completing 5 questionnaires once during lunch hour or after school. The questionnaires each have a specific focus and deal with evaluating coping, social support, social anxiety, and perception of stress. The questionnaires will take approximately 30 minutes to complete. Student athletes who do not participate will not be required to be present during the study.

Benefits and Risks to Participants:

There are no known physical or psychological risks associated with participation in this research study. Effort will be made to minimize any risks associated with self-report data, such as not asking for names or contact information on the questionnaires, and using responses for descriptive purposes only. No gender, race, or social class stereotyping will be made with the information provided in

the questionnaires. Participants will be paid a stipend of \$5 for their participation.

Confidentiality:

Information gathered on the questionnaire will be used for research purposes only, and the identity of individual participants will not be recorded or revealed at any time. All completed questionnaires will be identified by code number only and will be securely stored for a minimum of five years as required by the University of British Columbia guidelines.

- Results of this study will be analyzed in group form and will be used in the preparation of a masters thesis, academic research publications, and presentations, all of which are public documents. A summary of the results will be available upon request.
- The students and their guardians will be advised of any new information that may influence her decision to participate in the study
- There is no conflict of interest between the participating schools, UBC, and the identified researchers.
- You do not waive any legal rights by reading and/or signing the consent form.

Contact information about the rights of research subjects:

If you have any concerns about the treatment or rights of research participants, you may contact the Research Subject Information Line at 604-822-8598.

Contact information about the study:

If you have any questions concerning the procedures of this study or desire further information please contact Dr. Peter Crocker at (604) 822-5580 or Clare Cayley (604) 822-0219.

Thanks for your time,

Sincerely,

Clare Cayley
ccayley@interchange.ubc.ca
(604) 822-0219

APPENDIX I

Parent/Guardian Information & Consent Form



Parent/guardian Consent Form Examining coping functions in adolescent females.

Principal Investigator:

Peter Crocker, Ph.D.
School of Human Kinetics
University of British Columbia
Contact number: 604-822-5580
pcrocker@interchange.ubc.ca

Co-investigator:

Clare Cayley, Graduate Student
School of Human Kinetics
University of British Columbia
Contact number: 604-822-0219
ccayley@interchange.ubc.ca

Purpose of study:

The purpose of this study is to examine coping in adolescent female team sport. We are interested in looking at how female adolescents cope with an interpersonal conflict and how social support and social anxiety play a role in the process of coping.

- This research is part of a graduate masters thesis.
- This research is funded by a Social Sciences and Humanities Research Council of Canada.

Study Procedures:

Participation involves your daughter completing 5 questionnaires once during lunch hour or after school. The questionnaires each have a specific focus and deal with evaluating coping, teammate social support, social anxiety, and perception of stress. The interpersonal stressor will be a written hypothetical event and will be the same for all participants. The questionnaires will take approximately 30 minutes to complete. As this research will take place outside of class time, students who do not participate will not be required to be present.

Benefits and Risks to Participants:

There are no known physical or psychological risks associated with participation in this research study. We will provide the contact information for the school counselor if there are issues your daughter wishes to discuss after the study. Effort will be made to minimize any risks associated with self-report data, such as not asking for names or contact information on the questionnaires, and using responses for descriptive purposes only. No gender, race, or social class stereotyping will be made with the information provided in the questionnaires. Participants will receive a \$5 stipend for their participation.

Confidentiality:

Information gathered on the questionnaire will be used for research purposes only, and the identity of individual participants will not be recorded or revealed at any time. All completed questionnaires will be identified by code number

only and will be securely stored for a minimum of five years as required by the University of British Columbia guidelines.

- Results of this study will be analyzed in group form and will be used in the preparation of a masters thesis, academic research publications, and presentations, all of which are public documents. A summary of the results will be available upon request.
- You and your daughter will be advised of any new information that may influence the decision to participate in this study.
- There is no conflict of interest between the participating schools, UBC, and the identified researchers.
- You do not waive any legal rights by reading and/or signing this consent form.

Contact information about the rights of research subjects:

If you have any concerns about the treatment or rights of research participants, you may contact the Research Subject Information Line at 604-822-8598.

Contact information about the study:

If you have any questions concerning the procedures of this study or desire further information please contact Peter Crocker at (604) 822-5580 or Clare Cayley (604) 822-0219.

Consent:

Your signature on the next page indicates

- That you have been informed of the objectives and procedures of this research study, as outlined above
- That your daughter is free to withdraw from this study at any time with absolutely no penalty. The decision to withdraw will NOT result in any loss of services or any other negative consequences with their school.

You consent / Do not consent to your daughter's participation in this study
(Please circle one)

Daughter's Name (participant): _____

Print Name (parent/guardian): _____

Signature (parent/guardian): _____

Date: _____

***Please return this back page to the researcher and keep the other pages for your records.**

APPENDIX J
Participant Assent Form



Participant Assent Form **Examining coping functions in adolescent females.**

Principal Investigator:

Peter Crocker, Ph.D.
School of Human Kinetics
University of British Columbia
Contact number: 604-822-5580
pcrocker@interchange.ubc.ca

Co-investigator:

Clare Cayley, Masters Student
School of Human Kinetics
University of British Columbia
Contact number: 604-822-0219
ccayley@interchange.ubc.ca

Purpose of study:

The purpose of this study is to examine coping in adolescent female team sport. We are interested in looking at how female adolescents cope with an interpersonal conflict and how personality and perceived support from teammates will influence coping.

- This research is part of a graduate masters thesis.
- This research is funded by a Social Sciences and Humanities Research Council of Canada.

Study Procedures:

Participation involves completing 5 questionnaires once during lunch hour or after school. The questionnaires will take approximately 30 minutes to complete. The interpersonal stressor will be a written hypothetical event and will be the same for all participants. You will fill out the questionnaires in a classroom far enough from your teammates that you cannot read their answers and they cannot read yours. If you choose not to participate you will not have to be present during the study.

Benefits and Risks to Participants:

There are no known physical or psychological risks associated with participation in this research study. However, we will provide the contact information for the school counselor if there are issues you wish to discuss after the study. No gender, race, or social class stereotyping will be made with the information provided in the questionnaires. You will receive a \$5 stipend if you choose to participate.

Confidentiality:

Information gathered on the questionnaire will be used for research purposes only, and the identity of individual participants will not be recorded or revealed at any time. All completed questionnaires will be identified by code number only and will be securely stored for a minimum of five years as required by the University of British Columbia guidelines.

- Results of this study will be analyzed in group form and will be used in the preparation of a masters thesis, academic research publications, and presentations, all of which are public documents. A summary of the results will be available upon request.
- You will be advised of any new information that may influence your decision to participate in the study
- There is no conflict of interest between the participating schools, UBC, and the identified researchers.
- You do not waive any legal rights by reading and/or signing this consent form.

Contact information about the rights of research subjects:

If you have any concerns about the treatment or rights of research participants, you may contact the Research Subject Information Line at 604-822-8598.

Contact information about the study:

If you have any questions concerning the procedures of this study or desire further information please contact Peter Crocker at (604) 822-5580 or Clare Cayley (604) 822-0219.

Consent:

Your signature on the next page indicates

- That you have been informed of the objectives and procedures of this research study, as outlined above
- That you are free to withdraw from this study at any time with absolutely no penalty. The decision to withdraw will NOT result in any loss of services or any other negative consequences with your school.

You assent/ do not assent to participate in this study **(please circle one)**

Print Name (participant): _____

Signature (participant): _____

Date: _____

***Please return this back page to the researcher and keep the other pages for your records.**

APPENDIX K

Vancouver School Board Ethics Approval



Vancouver School Board

School District No. 39 (Vancouver)

LEARNING SERVICES

1580 West Broadway

Vancouver, B.C. V6J 5K8

Telephone: 604-671-5000

Fax: 604-710-5244

March 30, 2007

Clare Cayley
School of Human Kinetics UBC
Rm. 210 War Memorial Gym
6081 University Blvd.
Vancouver, B.C. V6T 1Z1

Dear Clare,

Thank you for your research proposal on "Examining Coping Functions in adolescent Females". On behalf of the VSB Research Committee, please accept this letter as approval for you to complete your research in Vancouver schools. You have permission to contact teachers, parents and students in Vancouver schools. We request that you make your initial contact with the principal of the school to inform them of your study. Please note that teachers and administrators are very busy with many obligations and that schools have the right of refusal to participate in any research studies. Also, the Vancouver School District does not find subjects for researchers.

The VSB Research Committee would be very interested in learning of your results and its implications for students. When your research is completed please send us an abstract of the results.

Thank you for focusing your work within the Vancouver School District. I wish you the best of luck as you proceed with your inquiry.

Sincerely,

A handwritten signature in cursive script that reads "Valerie Overgaard".

Dr. Valerie Overgaard, Associate Superintendent
Learning Services

APPENDIX L

University of British Columbia Behavioural Research Ethics Board Approval Form



The University of British Columbia
Office of Research Services
Behavioural Research Ethics Board
Suite 132, 6190 Agronomy Road, Vancouver, B.C. V6T 1Z3

CERTIFICATE OF APPROVAL - FULL BOARD

| | | |
|---|--|---|
| PRINCIPAL INVESTIGATOR: Peter Crocker | INSTITUTION / DEPARTMENT: UBC/ Education/ Human Kinetics | UBC BREB NUMBER: 103-03787 |
| INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT: | | |
| <small>Institution</small> | <small>Site</small> | |
| N/A <small>Other locations where the research will be conducted: Secondary High Schools in BC.</small> | | |
| CO-INVESTIGATOR(S): Clare Cayley | | |
| SPONSORING AGENCIES: Social Sciences & Humanities Research Council "The Nature and Function of Adolescent Sport Friendship Qualities in Managing Stressful Sport Transactions." | | |
| PROJECT TITLE: The role of social support and social anxiety in coping with an interpersonal conflict in female team sport. | | |
| RRE MEETING DATE: February 8, 2007 | CERTIFICATE EXPIRY DATE: February 8, 2008 | |
| DOCUMENTS INCLUDED IN THIS APPROVAL: | | DATE APPROVED: March 20, 2007 |
| <small>Document Name</small> | <small>Version</small> | <small>Date</small> |
| Consent Forms: | | |
| Parent/Guardian Consent Form | N/A | February 7, 2007 |
| Assent Forms: | | |
| Participant Assent Form | N/A | February 28, 2007 |
| Questionnaire, Questionnaire Cover Letter, Tests: | | |
| Scenario | N/A | February 28, 2007 |
| Interact on Anxiety Scale | N/A | February 7, 2007 |
| Stress Thermometer | N/A | February 28, 2007 |
| Coping Functions Questionnaire | N/A | February 28, 2007 |
| Demographic Information | N/A | January 7, 2007 |
| Social Provisions Scale | N/A | February 28, 2007 |
| Stress Appraisal Measure | N/A | February 7, 2007 |
| Letter of Initial Contact: | | |
| Letter of Initial Contact Principal | N/A | February 7, 2007 |
| Letter of Initial Contact Coach | N/A | February 7, 2007 |
| <p>The application for ethics review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.</p> | | |
| <p>Approval is issued on behalf of the Behavioural Research Ethics Board and signed electronically by one of the following</p> | | |
| <p>Dr. Peter Suedfeld, Chair Dr. Jim Duped, Associate Chair Dr. Andrew Karamjian, Associate Chair Dr. M. Judith Lynskey, Associate Chair Dr. Laura Ford, Associate Chair</p> | | |