Sources of Stress in NCAA Division I Women Ice Hockey Players

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Abstract

The purpose of this study was to identify the sources of stress experienced by NCAA Division I female ice hockey players at one university. In-depth, open-ended interviews were carried out with six athletes. The data was inductively analyzed according to the guidelines set forth by Côté and colleagues (Côté et al., 1993; Côté et al., 1995). The results of the analysis identified three main categories of stress: (a) the educational demands included academic concerns and time concerns; (b) the hockey pressures included the advantages of playing Division I, hockey performance stressors, training concerns, and the transition to the NCAA; and (c) the relationship issues included family and significant-other relationships, "hockey family" relationships, and social concerns. The connection linking the categories centered on the time concerns and on achieving a successful balance among the educational, hockey, and social pressures. These findings are similar to stressors reported by researchers in a variety of sports.

Résumé

Le but de cette étude était d'identifier les sources de stress vécues par des joueuses de hockey sur glace de première division dans la NCAA dans une université. Des entrevues semi-structurées et en profondeur ont été menées avec six athlètes. Les données ont été analysées de façon inductive selon les règles établies par Côté et ses collègues (Côté et al., 1993; Côté et al., 1995). Les résultats de cette analyse ont identifié trois catégories principales de stress: (a) les demandes scolaires incluant les préoccupations d'ordre académique et les contraintes de temps; (b) la pression reliée au hockey incluant les avantages de jouer en première division, le stress de performance sur glace, les préoccupations reliés à l'entraînement, et la transition au niveau de la NCAA; et (c) les intérêts relationnels incluant les relations familiales et sentimentales, les relations interpersonnelles reliées au hockey, et les préoccupations sociales. Le lien unissant ces catégories se centre sur les contraintes de temps et sur l'atteinte d'un équilibre entre les préoccupations d'ordre académique, la pression reliée au hockey, et les intérêts relationnels. Ces résultats sont semblables aux sources de stress rapportées par d'autres chercheurs dans plusieurs sports.

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CHAPTER I

INTRODUCTION

Athletes are a special population of people who are subjected to a distinctive set of pressures on a continuous basis. Athletes in competitive sports often must train in intensely physical, psychological, and emotionally stressful environments (Hardy, Jones, & Gould, 1996). These circumstances elicit feelings of stress and identifying these sources of stress is important because of the far reaching effects of stress on both performance and the potential for injury. By using a qualitative research methodology, valuable information has been gathered regarding the range of stressors that the athletes experienced.

Gill (1994) emphasized the importance of social context when studying stress. This is of particular importance because the prestige and identity attached to sporting success makes top level sport "more than just a game" (Jones, 1995, p. 449; Maguire, 1993). Gill stated that the social context affects both the person and the environment which in turn determines both sources of and appraisals of stress. Lazarus and Folkman set forth a definition of the term where "psychological stress is a particular 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" (1984, p. 19). This definition emphasized the relationship between the person and the environment. It accounted for the characteristics of the person and the nature of the environmental event. Stress results when the individual perceives an inability to meet competitive demands successfully and anticipates or fears negative consequences (Scanlan & Lewthwaite, 1984).

Athletes experience stress from both competition and noncompetition sources, including daily stressors and major life events (Lazarus & Folkman, 1984). Athletes are required to cope with various stresses in sport situations, such as physical injury, performance slumps, time management, interpersonal conflict, expectations, and fear of failure (Hardy et al., 1996). Researchers have linked the psychosocial stressors such as marital discord, financial distress, and relationship crisis with increased incidence of injuries, illness, and poorer performance in athletes (Davis, 1991). J. M. Williams and Andersen (1998) noted that between 1970 and 1998, there were 30 published studies assessing the relationship of life events and injury among athletes. There was an almost universal finding of a significant positive relationship between life stress and injury. They emphasized the importance of this finding because the studies used a variety of sports, competitive levels (youth to elite level), and measures of life stress and injury.

A large portion of the research on stress and athletic injury relationships has focused on the influence of stressful life events. Life events are major changes in an individual's life, such as marriage, divorce, death of a loved one, or change in financial status (Andersen & J. M. Williams, 1988). They noted that stress may stem from minor daily problems, irritations, or changes the individual encounters. These chronic daily stressors may be independent of major life events or may be a direct result of a major life event, such as the logistics encountered when moving to a new city.

Andersen and J. M. Williams (1988) developed a theory emphasizing the importance of stress in the occurrence of athletic injury. The main hypothesis of their model was that a combination of demanding events, personality traits, and few coping resources may result in an individual appraising a situation as stressful. In addition, the

person may exhibit greater muscle tension and attentional changes. As a result, there will be a greater risk of injury. Andersen and J. M. Williams (1999) found that only negative life events contributed significantly to the prediction of the number of injuries. Individuals with higher occurrences of negative life events incurred more injuries than those with lower scores. Positive life events were not related to injury.

The demand to perform at optimal levels in pressure situations has resulted in the desire to find better ways to cope with stress and anxiety, although many methodological difficulties have arisen when studying sport stress. Jones (1995) emphasized that the success of applied sport psychology consultants rests on a sound knowledge base of theory and research. Martens (1987) noted that there is a reliance on the belief that sport science is helpful only if the results assist researchers in making generalizations about athletes or about specific categories of athletes. He used the example of generalizing that high trait anxious athletes tend to perform more poorly in highly competitive situations than do low trait anxious athletes. As Schutz (1994) also pointed out, "measurement does not necessarily equate with knowledge, nor is it necessarily the best tool of scholarly inquiry" (p. 37).

J. G. H. Dunn (1994) discussed the dichotomous perspective on nomothetic and idiographic methodologies where researchers advocate the benefits of only one of these approaches. Examples of the idiographic approach include case studies, in-depth interviews, extended participant observation, and comprehensive content analysis of a person's oral or written records (Martens, 1987). The importance of emphasizing the desirability of the single case approach in stress and anxiety research was acknowledged by Hackfort and Schwenkmezger (1989), but they cautioned that it should not take

precedence over the nomothetic approach. The acquisition of knowledge in the field of sport psychology has been hindered by such a biased view because the potential benefits of the unfavored view are generally unnoticed (J. G. H. Dunn, 1994). J. G. H. Dunn indicated that the area of competitive anxiety has been victim to this bias because most of the research has been conducted within a nomothetic framework. For example, the psychological constructs related to perceptions of anxiety in competitive situations has been studied in different sports and populations (see J. G. H. Dunn & Nielsen, 1993; Gould, Horn, & Spreeman, 1983b), although these were based on group-level analytical procedures. Researchers have questioned the validity of inferences drawn from group-level analysis when applied at the individual level (Hackfort & Spielberger, 1989; Martens, 1987).

Dewar and Horn (1992) criticized sport psychologists' reliance on the traditional research methodologies while alternative methodologies such as qualitative research have not been widely employed. They suggested that the alternative options provide strong opportunities and choices over traditional approaches in solving research questions. Support for this stance was provided by Sparkes (1998) who believed that sport psychology would grow and thrive if more diverse methodologies were employed therefore avoiding a "narrow view of research" (p. 383). Gould and Krane (1992) pointed out the abundance of quantitative information relating to the understanding of the anxiety-performance relationship. Gould and Krane, as well as Hackfort and Schwenkmezger (1989) have suggested the use of in-depth interviews with athletes in addition to questionnaires to gain a broader perspective of the athlete's experiences.

Patton (2002) stated that one of the strengths of qualitative methodology is that the subject matter is not constrained by predetermined categories of analysis and this contributes to the depth, openness, and detail of qualitative inquiry. By using a small sample one may not generalize extensively, but one may still learn from it, often exposing new ideas for further research (Patton, 2002). The benefit of isolating and explaining the sources of stress that exist among athletes has been noted by James and Collins (1997) because these stressors may impact on the performance of an athlete during competition.

The researchers have begun to address this need to isolate the sources of stress that athletes experience. Studies have focused on a variety of sports including figure skating (Gould, Jackson, & Finch, 1993; Scanlan, Stein, & Ravizza, 1991), wrestling (Gould, Horn, & Spreeman, 1983b; Gould & Weinberg, 1985; Scanlan & Lewthwaite, 1984), field hockey (Anshel & Delany, 2001), golf (Cohn, 1990), soccer (Scanlan & Passer, 1978; 1979; Holt & J. G. H. Dunn, in press), Australian football (Noblet & Gifford, 2002), running (Jones, Swain, & Cale, 1990), ice hockey (J. G. H. Dunn, 1999), and wheelchair basketball (Campbell & Jones, 2002b). While these studies have looked at a number of sports, the majority have focused on male athletes. Of the listed studies, only two focused solely on female athletes (Scanlan & Passer, 1979; Holt & J. G. H. Dunn, in press) although female sport participation has been on the rise. More females are engaged in sport and physical activity than at any other period in United States' history, partially as a result of Title IX in 1972. In 1993, approximately two million women participated in interscholastic sports, compared with 300,000 before the passage

of Title IX. More than one-third of all intercollegiate athletes are female, compared to 15% prior to Title IX (Greendorfer, 1993).

One example of the increase in popularity of female sports is the rapid growth of women's ice hockey in North America. The enrollment in women's ice hockey in Canada has increased over 600%, from 8,146 to 51,105 participants, between 1990 and 2000 (Canadian Hockey, 2002). Similar increases have taken place in the United States in that period where enrollment increased from 6,336 in 1990 to 39,693 in 2000. The number of women's ice hockey teams in the United States had grown from 149 in 1990 to 1,530 in 2000 (USA Hockey, 2002). Participation in women's Division I ice hockey in the National Collegiate Athletic Association has also grown over 330% between 1982 and 2001 (NCAA, 2001). Women's ice hockey gained attention and became widely known when the women's game debuted in the 1998 Winter Olympics (Fabrizio-Pelak, 2002). Since then, both the United States' and Canada's women's teams have earned gold and silver medals in the Olympic Games.

This rapid rise in interest in women's ice hockey has not been followed with a corresponding amount of scientific literature. Theberge (1997) noted that school, university, and international competitions provide contexts where opportunities for women are expanding, performances are improving, and public interest is rising. Most of the limited research on women's ice hockey has been completed in Canada (see Avery & Stevens, 1997; Boyd, Trudel, & Donohue, 1997; Etue & M. K. Williams, 1996; Theberge, 1995a, 1995b, 1997; M. Williams, 1995). Fabrizio-Pelak (2002) appears to be the only person to date who has examined women's ice hockey in the United States.

In conclusion, while women's sport has continuously grown in popularity over the last few decades, the research on the phenomenon has not always well reflected this trend, especially in the sport of ice hockey. Opportunities exist to complement the extensive literature on men's sport and to expand the literature regarding women in sport. Increasing the literature regarding females' experience in sport seems desirable since the findings will aid coaches and other athletics staff in providing programs better suited to female athletes' needs. Understanding the sources of stress is essential because of their relationship to injuries and potential performance decrements. A qualitative methodology provides a most appropriate opportunity to gather a wide range of information because the participants are able to respond by describing what is meaningful and relevant without their concerns having to be "pigeon holed" into standardized categories (Patton, 2002, p. 56; Rubin & Rubin, 1995).

Purpose of the Study

The purpose of this study was to gain a better understanding of the total experiences of Division I female ice hockey players and to identify the sources of stress that exist among the players at one university.

Significance of the Study

Unfortunately, there is a lack of scientific literature concerning stressors experienced by female athletes, particularly ice hockey players, even though the sport continues to gain in popularity. This study was exploratory in nature and it addressed the gap in the literature regarding stress and elite female athletes. Falk (1956) suggested exploring topics using idiographic investigations because new variables could emerge resulting in working hypotheses that can be tested nomothetically.

Understanding the causes of stress experienced by individual elite athletes is very important because it is usually with individual athletes that sport psychologists work in trying to overcome the effects of stress (Gould, Finch, & Jackson, 1993; Holt & Hogg, 2002). Blackwell and McCullagh (1990) suggested that coaches be aware of the events taking place in athletes' lives outside of sport because these events can influence their susceptibility for injury. Cross and Harwood (2002) noted that elite student-athletes are a population with unique needs that need to be explored in order to develop programs to aid in academic and athletic excellence.

Operational Definition of Stress

For the purpose of this study, the definition of stress used was the same one employed in previous studies by Scanlan and colleagues (1991) and Gould, Jackson, and Finch (1993) and was defined as "the negative emotions, feelings, and thoughts" and these included "feelings of apprehension, anxiety, muscle tension, nervousness, physical reactions (such as butterflies in the stomach, shaking, or nervous sweating), thoughts centered on worry or self-doubt, and negative statements to yourself" (Scanlan et al., 1991, p. 105).

Delimitations

The following delimitations were defined for the purpose of this study:

1. The participants in this study all attended the same university.
2. The participants all were current members of the same team.
3. The participants all were forwards and defensemen.

Limitations

The following limitations were identified in this study:

1. The participants included only women.
2. It was assumed that the participants responded honestly in the interviews.
3. The participants were athletes who received a significant amount of playing time.

CHAPTER II

REVIEW OF THE LITERATURE

This section provides an overview of the research on stress and anxiety and the relationship to injury. Definitions of arousal, anxiety, and stress are discussed. The relationship between anxiety and performance is summarized. A review of the literature regarding sources of stress in a variety of sports at the youth and elite levels is provided. The psychological antecedents of sport injury are also discussed.

Defining Arousal, Anxiety, and Stress

Terms such as arousal, anxiety, and stress have been used interchangeably in the literature although distinctions can be made between these concepts (Gould & Krane, 1992; Silva & Weinberg, 1994). Arousal has been referred to as the entire continuum of an individual's psychological activation (Sonstroem, 1984). Other researchers have acknowledged the physiological aspect of arousal by explaining arousal as a blend of physiological and psychological activity in a person. High arousal is characterized by feeling mentally and physically activated in addition to increased heart rate, respiration, and sweating (Weinberg & Gould, 1999). Sonstroem (1984) differentiated anxiety from arousal where anxiety is restricted to high arousal states that produce feelings of discomfort or excessive concern.

One of the major problems facing researchers examining the stress-performance relationship is the lack of consensus on a precise definition of stress (Jones, 1990; Kroll, 1979; Woodman & Hardy, 2001b). Lazarus and Folkman (1984) pointed out the inconsistencies in the definitions of stress where stress has been defined as either a stimulus or a response. The definition of stress as a stimulus includes natural disasters or

illness, but does not allow for individual differences in the evaluation of stress. Response definitions refer to a state of stress where the person reacts with stress or is under stress. They further reasoned that these definitions have very limited value because, according to these definitions, a stimulus is only defined as stressful if it is followed by a stress response. Lazarus and Folkman also noted that sources of stress may be appraised as positive (challenge), negative (threat, harm/loss), or a combination of both positive and negative. Individuals associate challenge with the stressor if they perceive a high degree of control, and they associate threat or harm if they perceive a low degree of control.

Katkin (1986) noted that certain classes of events are often assumed to be universal psychological stressors and that the individual differences of the person being stressed cause the variations in response. It was also pointed out that even the most unfavorable environmental events may not always result in adverse reactions. The individual's response to a presumably stressful situation depends upon factors such as the perception or interpretation of events and the coping capacity. Katkin further asserts that psychological stress is best defined in terms of response parameters and that "stress is in the eye of the beholder" (p. 46). Lazarus and Folkman (1986) identified stress as an "unclean" concept in that it depends on the interaction of two complex systems, the environment and the person. They suggested a new definition of stress where "psychological stress is a particular 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" (p. 19). This definition accounts for the characteristics of the person and the nature of the environmental event. Meichenbaum (1986) noted that in the transactional perspective of stress, the nature and impact of the

environment is considered. He outlined the importance of classifying environmental stressors when discussing stress because the concept of stress should not be limited to "something in the head of an individual" (Michenbaum, 1986, p. 56).

Another important distinction to be made is between state and trait anxiety. Spielberger (1966) noted the importance of distinguishing between anxiety as a transitory state and anxiety as a stable personality trait, and thus has been credited with formalizing the state-trait theory of anxiety. According to Spielberger, state anxiety (A-state) refers to an existing or immediate emotional state characterized by apprehension and tension. Trait anxiety (A-trait) is a predisposition to perceive certain situations as threatening and to respond to these situations with varying levels of state anxiety (Spielberger, 1966).

Arousal has been defined as a combination of physiological and psychological reactions. Stress has been defined as a stimulus and response, as well as both transitory and stable personality traits. As a result, stress is a problem for certain individuals in certain situations (Gould, Horn, & Spreeman, 1983a).

Anxiety and Performance

Elite athletes are able to control their anxiety and achieve an appropriate activation state that allows them to perform successfully (Gould et al., 1996). A review of the many theories and measures examining this anxiety or arousal-performance relationship are presented. The direction and interpretations of anxiety are discussed. A summary of the predictors of anxiety is given.

Theories and Measures of Anxiety and Arousal

A variety of theories and measures examining the relationship of anxiety or arousal to performance exist. These are presented in three major conceptual approaches

including general arousal-based, general anxiety-based, and multidimensional anxiety-based approaches. In the field of sport psychology, stress and anxiety have typically been studied in models attempting to explain the anxiety-performance relationship.

In the general-arousal based models it was originally hypothesized that the relationship between arousal and performance was direct and linear, such as in the drive theory (Hull, 1943; Spence & Spence, 1966), although there is not much support in the scholarly literature for this theory (Martens, Vealey, & Burton, 1990). Research has since expanded from a linear theory of arousal and performance, to an inverted-U hypothesis. The inverted-U hypothesis was originally credited to the work of Yerkes and Dodson in 1908. The assumption of the inverted-U hypothesis is that high and low levels of arousal are negative and will be debilitating to performance (Jones, 1990). This is not the case for all athletes, however, because some athletes view high levels of arousal as facilitating to their performance (Jones & Swain, 1992, 1995; Perry & J. M. Williams, 1998). Zaichkowsky and Baltzell (2001) noted that the inverted-U hypothesis is primarily descriptive and does not provide an adequate explanation for the arousal-performance relationship. Jones (1990) argued that the continued acceptance of the inverted-U has actually hurt sport psychology in that there is a disregard of advances in cognitive psychology.

The theory of psychological reversals (Apter, 1982; Kerr, 1993), also known as reversal theory, has gained in popularity because it attempts to explain the individual's experience of his or her own motivation and the inconsistency of human behavior associated with emotion, cognition, and subsequent motivation (Kerr, 1990; Zaichkowsky & Baltzell, 2001). Apter (1982) proposed that motivation is influenced by quick changes

or reversals between four paired, opposite 'metamotivational states' (Kerr, 1990). Metamotivational states are conceptualized as alternative mental states in which the individual can alternate between motives at any time (Zaichkowsky & Baltzell, 2001). High or low levels of arousal can be perceived as pleasant one moment, but unpleasant the next.

The anxiety-based approach to conceptualizing the anxiety-performance relationship has received a vast amount of attention in the literature due in large part to the work of Spielberger, including his state-trait theory of anxiety (Spielberger, 1966) and the development of his measuring instrument the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970). As a result of Spielberger's work, a model focused on a zone of optimal functioning has been proposed to describe individualized preferences for competitive anxiety levels (Hanin, 1989, 1997; Hanin & Spielberger, 1983). Hanin proposed that repeated observations of individuals' performance levels and associated precompetition and performance state anxiety levels can result in the identification of an individual zone of optimal functioning (IZOF) for that athlete. In addition, other measures and inventories have been developed to aid anxiety research from both a state (Competitive State Anxiety Inventory; Martens, Burton, Rivkin, & Simon, 1980) and trait perspective (Sport Competition Anxiety Test; Martens, 1977).

The majority of the literature has focused on the multidimensional approach to anxiety research (Jones, 1995). Multidimensional anxiety theory argues that at least two different mechanisms can be distinguished in the anxiety response: a cognitive and somatic component (Davidson & Schwartz, 1976). Measurements have been developed to study both cognitive and somatic anxiety (Competitive State Anxiety Inventory-2;

Martens, Burton, Vealey, Bump, & Smith, 1990). Generally athletes will experience either cognitive or somatic anxiety or a combination of both prior to competition. These two components of anxiety are believed to covary in stressful situations because these situations involve elements that will be arousing to both components. Athletes may have developed a conditioned response to precompetitive preparation at the competition site, such as locker room preparation or precompetition warm-up routines (Jones, Swain, & Cale, 1991; Martens, Vealey, & Burton, 1990). A cognitive or somatic response to a particular stimulus may indicate to the person that there is a reason to worry, when in fact there is none at all (Martens, Vealey, & Burton, 1990). During the validation work on the CSAI-2, a third dimension emerged and was identified as self-confidence. Self-confidence is the belief that one can successfully perform the desired behavior (Weinberg & Gould, 1999). The CSAI-2 has been the most widely used instrument in competitive state anxiety research since the mid-1980s, although there has been a shift toward the development of a trait measure of multidimensional competitive anxiety (Jones, 1995). This shift in focus resulted in the development of the Sport Anxiety Scale (SAS; Smith, Smoll, & Schutz, 1990) which measures the tendency to experience somatic and cognitive reactions in competitive situations.

One of the major problems with multidimensional anxiety theory is that it attempts to explain the potentially complex four-dimensional relationship among cognitive anxiety, somatic anxiety, self-confidence, and performance in a series of independent two-dimensional relationships (Hardy, 1990; Hardy & Fazey, 1987). The cusp catastrophe model of anxiety and performance was proposed by Hardy and Fazey as a result of their dissatisfaction with such over simplified explanations of the anxiety-

performance relationship. The model predicts that when cognitive anxiety is low, the relationship between physiological arousal and performance should be a mildly inverted-U shape curve. When physiological arousal is high, there is a negative correlation between cognitive anxiety and performance. When physiological arousal is low, cognitive anxiety should lead to enhanced performance. Finally, when cognitive anxiety is elevated, the effect of physiological arousal could be either positive or negative depending upon exactly how high cognitive anxiety is experienced.

Stress and anxiety have typically been studied using models and inventories that attempted to explain the anxiety-performance relationship from a general arousal-based, general anxiety-based, and multidimensional anxiety-based approach. Unfortunately, these inventories only addressed the intensity (i.e. the amount or level) of an athlete's symptoms and did not take into account the individual's interpretation of the anxiety.

Direction and Interpretations of Anxiety

The abundance of intensity measures resulted in research that focused on the interpretation of anxiety symptoms. Jones and colleagues discussed the need to address the directional perceptions of one's symptoms in terms of whether they are positive or negative in relation to an upcoming performance (Jones & Swain, 1992; Jones, Swain, & Hardy, 1993). The directional perceptions of anxiety were defined as the nature of the individual's interpretation of those symptoms in terms of whether they are positive or negative in relation to impending performance (Jones et al., 1993).

Athletes also vary on the intensity of the emotion and the direction in which it is interpreted. Even if athletes experience the same intensity of anxiety symptoms, the different interpretations of the symptoms may affect the potential performances

differently (Fenz, 1975; Gould, Horn, & Spreeman, 1983a; Jones et al., 1991; Passer, 1983; Perry & J. M. Williams, 1998). Research has shown that not all athletes experience anxiety as a negative emotion (Carver & Scheier, 1986; Jones, Hanton, & Swain, 1994; Jones & Swain, 1992, 1995; Jones et al., 1993; Perry & J. M. Williams, 1998; Swain & Jones, 1993). The concept of debilitating and facilitating dimensions of the anxiety response has been a major theme in test anxiety research (Alpert & Haber, 1960). It has been found that the skill level of the athlete (elite or non-elite) is a major determinant in the direction of the perception of the symptoms with elite athletes interpreting their responses as more facilitative to performance. This sort of 'positive anxiety' probably should not be labeled as anxiety, but rather named in more favorable terms such as "excitement", "arousal", or "motivation" (Jones & Swain, 1992). Performers who perceive themselves as able to cope and able to achieve their goals are predicted to interpret their anxiety symptoms as facilitative (Jones, 1995).

The question has been raised as to whether the difference in interpretation of anxiety is the cause or result of achieving elite status (Jones & Swain, 1995). Specifically, experiencing facilitative or debilitative anxiety could be a function of skill level with high level athletes experiencing facilitation and low level athletes experiencing debilitation (Jones et al., 1994; Jones & Swain, 1995; Martens, Vealey, & Burton, 1990; Perry & J. M. Williams, 1998). Jones (1995) suggested that these interpretation differences may occur due to the higher skilled athletes employing certain cognitive strategies or that the differences arise from increased success. Gould and Weinberg (1985) found that more experienced wrestlers worried less than their inexperienced counterparts. Gender has also been found to influence anxiety responses (Jones et al.,

1991; Perry & J. M. Williams, 1998). They found that female players did not report higher intensities of cognitive anxiety symptoms, but interpreted it as more debilitating compared to males. Males interpreted somatic and cognitive anxiety symptoms as facilitative more often than females.

Research has shown that not all athletes experience anxiety as a negative emotion; anxiety may be interpreted as facilitative or debilitative depending upon the skill level of the athlete. In addition, sex differences were found to influence the intensity and interpretation of anxiety where females experienced less anxiety, yet interpreted it as more debilitating. Perry and J. M. Williams (1998) also suggested that females need additional interventions to help them handle anxiety responses more positively.

Predictors of Anxiety

Martens, Vealey, and Burton (1990) hypothesized that predictors of cognitive anxiety and self-confidence are related to factors in the environment concerning the athlete's expectation of success. A model of anxiety and performance was developed by Carver and Scheier (1986) to explain the relationship between the predictors of anxiety and the expectation of success. In addition, understanding this relationship provides an opportunity to prevent the symptoms in the first place.

Carver and Scheier (1986) have developed a control-process model of anxiety and performance. Anxiety is believed to have the capacity to both debilitate and facilitate performance depending upon the individual's expectancy (favorable or unfavorable) of being able to cope with the anxiety and to complete the action. Expectations of success include the perceptions of one's own ability, which is based in a large part on previous performances, and perceptions of the opponent's ability (Gould et al., 1983a; Scanlan &

Lewthwaite, 1984; Scanlan & Passer, 1978, 1979; Thuot, Kavouras, & Kenefick, 1998). Cognitive anxiety and self-confidence are more likely to be related to the athlete's perceived ability, which may be generated from previous competitive experiences (Feltz, 1984), performance expectancies (Martens, Vealey, & Burton, 1990), and perceived readiness (Hanton & Jones, 1997; Jones et al., 1990). Different factors have been found to predict cognitive anxiety, somatic anxiety, and self-confidence in male and female university athletes (Jones et al., 1991).

Knowledge of what causes these states of anxiety may be beneficial because it could provide a possibility of preventing the symptoms in the first place (Hardy & Jones, 1994). Hardy and Jones call for more detailed research of the antecedents of anxiety because it will aid understanding at a theoretical level. It will also provide knowledge of practical significance that could be used to enhance the mental preparation of athletes. Jones (1995) observed that the demand to perform to optimum levels in high level sport resulted in a large portion of counseling sport psychologists' time being directed toward enabling performers to better cope with the stress and anxiety that accompanies their preparation and performance.

The studies of anxiety have resulted in several theories and measures to describe the complex anxiety-performance relationship. Further research has unearthed many interpretations and predictors of anxiety. There exists a need to identify a more complete set of stressors beyond competition, including those related to the organizational and occupational concerns of elite athletes (Hardy et al., 1996).

Sources of Stress

A large portion of the research regarding stress in sport has focused on competition induced stress, although that is only one aspect of the overall sporting experience. When studying athletes, one must consider the totality of the athlete's experience (Scanlan et al., 1991). The sources of stress experienced by athletes have been studied in populations including youth sport participants and elite level athletes, using both quantitative and qualitative methodologies. These findings have important implications for all athletes.

Youth Sport Participants

The supporters of youth sport believe that a child's psychological and physical development will be enhanced through participation in organized sport, whereas critics feel that competitive sport can potentially harm a young athlete's physical, emotional, and psychological well-being (Gould et al., 1983a). A number of researchers have investigated the sources of stress of youth in sport including soccer players (Scanlan & Passer, 1978, 1979), wrestlers (Gould et al., 1983b; Scanlan & Lewthwaite, 1984), field hockey players (Anshel & Delany, 2001), and golfers (Cohn, 1990).

A series of studies conducted by Scanlan and colleagues (Scanlan & Lewthwaite, 1984; Scanlan & Passer, 1978, 1979) investigated the intrapersonal and situational factors related to state anxiety levels of youth sport participants prior to competition. In their studies of 11 and 12 year old male (Scanlan & Passer, 1978) and 10 to 12 year old female soccer players (Scanlan & Passer, 1979) they found that competitive trait anxiety (A-trait) and baseline state anxiety (A-state) combined with several interpersonal factors were significant predictors of pregame state anxiety. The three major factors included:

(a) self-esteem, where players with low self-esteem demonstrated higher pregame anxiety; (b) expectancy of team performance, where players having lower expectancies of team success showed greater pregame anxiety; and (c) expectancy of self performance, where players with lower expectations of playing well indicated greater pregame anxiety.

The predictors of competitive stress in male youth wrestlers between the ages of 9 and 14 years were studied by Scanlan and Lewthwaite (1984). The results showed that competitive trait anxiety and personal performance expectancies were influential predictors of prematch stress. They found that participants with higher levels of baseline state anxiety and competitive trait anxiety, combined with lower personal performance expectancies, evidenced greater prematch state anxiety than those with the opposite attributes. They also identified that competitors who feel greater parental pressure to wrestle and who worry more frequently about failure experience greater state anxiety than do boys who perceive less pressure and worry less frequently. Scanlan and Lewthwaite noted that this was the first study to provide empirical evidence suggesting that the child's perceptions of parental pressure for sport participation was related to acute stress reactions prior to competition.

The sources of stress experienced by junior elite wrestlers were studied by Gould and colleagues (1983b). The wrestlers ranged in age from 13 to 19 years and were given a questionnaire consisting of 33 items that assessed typical worries in athletes instead of momentary or state worries (Gould & Weinberg, 1985). The most important sources of stress included performing up to ability, improving over the last performance, participating in championship meets, not wrestling well, losing, not making weight, not being able to get mentally ready, and making mistakes. The items that were rated as least

likely to make the wrestlers nervous or worried included being outcoached, hurting the opponent, having bad luck (being jinxed), spectators getting on them, and making the opponent look foolish (Gould et al., 1983b).

A factor analysis revealed that three stress dimensions were visible in the responses. The first factor was a combination of the fear of failure, including worries about losing, and feelings of inadequacy, including worries about getting stale. The second factor reflected issues with external control (worries about being outcoached) and guilt (worries about injuring an opponent). The final factor reflected concern over evaluation by significant others, including worries about what the coach would think or say (Gould et al., 1983b).

The findings of Gould and colleagues (1983b) are consistent with those found by Pierce and Stratton (1981). They surveyed youths, ages 10 to 17, to determine their biggest worries from a list of 10 choices while participating in sport. The worries most frequently reported included not playing well (63.3%), making a mistake (62.5%), and stress caused by parents, coaches, and teammates (11.2, 24.9, and 24.7% respectively). Many of the participants (44.2%) stated that they were prevented from playing their best because of certain worries. Also, 23.6% of the athletes indicated that they might discontinue participation because their worries had become bothersome.

Anshel and Delany (2001) studied the sources of acute stress experienced by 10 to 12 year old male and female field hockey players. They used structured personal interviews to assess the sources of stress. In addition, the participants were provided with a 10-item list of possible stressors to aid in recall. The results showed that receiving a bad call from the umpire and making a physical game error were the two most frequently

cited and intense sources of stress for both males and females. Hearing unpleasant comments from the sideline was reported as a stressor by female participants a great deal more often than males, although getting a bad game score was cited more often by males than females. The results of this study support previous findings (Gould et al., 1983b; Pierce & Stratton, 1981). Anshel and Delany suggested that the sources of stress may differ as a function of sport type because the environment (open or closed skills) influences the types of stress experienced.

An exploratory study was carried out by Cohn (1990) to determine the most frequent sources of stress experienced by male high school golfers, ages 15 to 17 years. A guided interview approach was used including both open-ended and specific questions. The four categories of interview questions were selected based on previous findings of the four major stress areas for elite figure skaters including competitive sources of stress, demands and costs of golf, personal struggles in golf, and relationships with significant others such as coaches, parents, and friends (see Scanlan et al., 1991). A checklist of topics was also used to explore each major category of stress to determine other possible sources not mentioned.

Cohn (1990) found that competitive stress responses involved the specific thoughts or feelings experienced during competition. The demands and costs of golf focused on the specific requirements and sacrifices that the game dictates including less time to spend with others, balancing school or work with golf, and the cost of practicing. Personal struggles included personal injuries, living up to personal standards, evaluating whether to continue golf as a career, and the struggle against physical injuries that reduced one's ability to play golf. Relationships with significant others included not

getting along with the coach or teammates, not being accepted by teammates, or having parents who were opposed to golf. The most frequently discussed stressor in this category was striving to meet expectations of parents and of coaches.

The studies previously cited have outlined a number of situational factors that are prevalent sources of stress for youth sport participants including difficulties with peers, problems with coaches, worries about not performing well, guilt, social evaluation, and increased demands upon time and energy (Anshel & Delany, 2002; Cohn, 1990; Gould et al., 1983b; Pierce & Stratton, 1981; Scanlan & Lewthwaite, 1984; Scanlan & Passer, 1978, 1979). Many of these worries are also salient in older, elite athletic populations.

Elite Level Athletes

Research was expanded from youth sport participants to elite level athletes to determine if the major stressors were similar to those found in the younger athletes. Athletes from a variety of sports were studied including wrestlers (Gould & Weinberg, 1985), figure skaters (Gould, Jackson, & Finch, 1993; Scanlan, Ravizza, & Stein, 1989; Scanlan et al., 1991), ice hockey players (J. G. H. Dunn, 1999), Australian footballers (Noblet & Gifford, 2002), wheelchair basketball players (Campbell & Jones, 2002a, 2002b), and soccer players (Holt & J. G. H. Dunn, in press). Organizational stress (Woodman & Hardy, 2001a) and self-presentational concerns (James & Collins, 1997) were studied in elite athletes.

Gould and Weinberg (1985) carried out a comparison of sources of stress in successful and less successful intercollegiate wrestlers. The sample consisted of wrestlers from four of the top ten ranked NCAA Division I teams. The athletes were given the same sources of stress scale used by Gould and colleagues (1983b). When

compared to the Gould et al. (1983b) study, it was found that four of the top six sources were similar including performing up to ability, improving on the last performance, not wrestling well, and losing. These items also reflect evaluative and performance expectancy concerns which are considered to be elements of stress (Martens, Vealey, & Burton, 1990). The intercollegiate wrestlers also frequently cited as stressors what their coach would think or say and their own physical condition before matches. These sources were reported as being frequently experienced by over 25% of the sample. The sources reported the least frequently included making a foolish mistake, because a brother/sister was a successful athlete, and hurting opponents. It was found that more successful wrestlers worried less about what their coach would think or say, losing, and making mistakes.

Some differences were found between the intercollegiate and junior wrestlers (Gould & Weinberg, 1985). The mean importance ratings and the percentage of each sample who reported frequently experiencing each type of stress were compared between the two groups. It was found that the intercollegiate wrestlers generally worried less than the inexperienced junior wrestlers. The elite intercollegiate athletes also reported, as two of their top six major stressors, what their coach would think or say and their own physical condition, whereas the junior wrestlers listed participating in championship meets and making weight as major stress sources (Gould & Weinberg, 1985). They attributed the differences to the fact that the junior elite wrestlers had less experience than the intercollegiate wrestlers. Gould and Weinberg noted the importance of future research trying to identify the frequency and types of stress athletes experience and the antecedents of these stressors.

Scanlan and colleagues (Scanlan, Ravizza, & Stein, 1989; Scanlan, Stein, and Ravizza, 1989, 1991) used in-depth interviews with former elite figure skaters to learn more about the sources of sport enjoyment and stress, in addition to the role of significant others in these experiences. These skaters had previously competed at national championships and were currently coaching. The interviewees were instructed to focus on the sources of stress experienced during the most competitive phase of their careers and to consider their total skating experiences, not just aspects of competition. Stress was defined for the athletes as "the negative emotions, feelings, and thoughts that you might have had with respect to your skating experience" and these included "feelings of apprehension, anxiety, muscle tension, nervousness, physical reactions (such as butterflies in the stomach, shaking, or nervous sweating), thoughts centered on worry or self-doubt, and negative statements to yourself" (Scanlan et al., 1991, p. 105).

The five themes that emerged from the data were negative aspects of competition, negative significant-other relationships, demands or costs of skating, personal struggles, and traumatic experiences. The negative aspects of competition encompassed worries about competition, competitive failure, preparation for competition, competitive hurdles, and the importance of competition. The negative significant-other relationships were comprised of interpersonal conflict, performance expectations, performance criticism or lectures, skating politics, and psychological warfare. The demand costs of skating included financial demand or costs, time demand or costs, and personal costs. The personal struggles included physical or mental difficulties, self-doubts about talent, perfectionism, dealing with homosexuality, undesired coaches, commitment to skating,

and limited time frame. The traumatic experiences were made up of family disturbances and death (Scanlan et al., 1991).

Another examination of figure skaters was carried out by Gould, Jackson, and Finch in 1993. In-depth interviews were carried out with present and former skaters including singles, pair, and dance competitors using the same definition of stress as Scanlan and colleagues (1991). The athletes were asked about sources of stress both prior to (Phase 1) and after (Phase 2) winning their national titles. A comparison of these two phases revealed that the overall general stress source dimensions were similar and also paralleled those found by Scanlan and colleagues (1991). One aspect appeared in Phase 2 that did not appear in Phase 1 and that was life direction concerns. The most often mentioned concerns from Phases 1 and 2 centered around: (a) competitive anxiety and self doubts, including fear of failure, lack of confidence, and worries about performing well; (b) dealing with environmental demands, including the media, increased time commitments, and the need to finance training; (c) high performance standards and expectations; and (d) significant-other relationship issues. Although these were the most frequently mentioned stress sources, they were not necessarily the sources of the greatest stress magnitude (Gould, Jackson, & Finch, 1993).

J. G. H. Dunn (1999) studied competitive worry in collegiate ice hockey players using the Collegiate Hockey Worry Scale (CHWS). Examples of items on the scale include worries about opponents playing chippy physical hockey, making mistakes, other people being disappointed with them, spectators forming a poor impression of them, not knowing what to expect in the game, and not performing up to the best of their ability (J. G. H. Dunn, 1999). The CWHS was constructed to assess ice hockey players'

predispositions for experiencing pregame worries relating to physical danger, negative social evaluation, performance failure, and uncertain or unknown competitive conditions. It was found that the hockey players had a higher predisposition to worry about performance failure than negative social evaluation, injury or physical danger, and situational uncertainty.

J. G. H. Dunn noted that a coach's decision to select a player for competition depends largely on the previous performances of that athlete. This might be an explanation for the finding that worries about performing up to the best of one's ability was ranked number one in the first testing session and second in the next testing session behind how the coach views their performance (J. G. H. Dunn, 1999). J. G. H. Dunn also hinted at the idea that worries associated with fear of injury or physical danger and fear of the unknown do not play a major role in the competitive anxiety process in intercollegiate ice hockey. It was found that those two areas were significantly less characteristic of intercollegiate ice hockey players than the worries about performance failure and negative social evaluation.

The sources of stress experienced by professional Australian footballers were studied by Noblet and Gifford (2002) using in-depth interviews and focus group discussions. They hypothesized that younger, inexperienced players would perceive the environment much differently than players who have been in the league for a few years because the rookies have not had as much of a chance to become accustomed to the physical and psychological pressures of professional football. As a result, Noblet and Gifford selected players based on the number of games played. The six themes that emerged included negative aspects of organizational systems and culture (poor

communication, autocratic leadership, negative cultural norms), worries about performance expectations and standards, career development concerns (uncertain future in football), negative aspects of interpersonal relationships, demanding nature of work itself, and the problems associated with the work/non-work interface (relocation concerns and balancing work, studies, and relationships). Career development concerns paralleled the life direction concerns found by Gould and colleagues (1993).

Structured interviews with elite male wheelchair basketball players revealed 10 dimensions of stress experienced by these athletes (Campbell & Jones, 2002b). Findings similar to those of Gould, Jackson, and Finch (1993), Scanlan and colleagues (1991), and Noblet and Gifford (2002) included relationship issues, demands or costs of the sport, poor group interaction and communication, negative coaching style and behavior, oncourt performance, negative match preparation, postmatch performance concerns, negative aspects of major events, and pre-event concerns. The theme of lack of disability awareness also emerged related to traveling to competitions. This included issues surrounding poor access to accommodations or the venue and the lack of understanding of the athletes' special needs. The findings support previous conclusions that stress may be experienced from both competition and non-competition sources (Campbell & Jones, 2002a, 2002b; Lazarus & Folkman, 1984) and that stress may be appraised as a mixture of challenge, threat, and causing harm or loss, depending upon individual interpretation of a situation (Campbell & Jones, 2002a; Folkman & Lazarus, 1985; Lazarus, 1999).

Holt and J. G. H. Dunn (in press) studied four-high performance female soccer players in order to identify the perceived stressors and the corresponding coping mechanisms. They used a qualitative methodology consisting of audio-diaries and

interviews and presented the analysis in idiographic profiles describing the experience of each participant. Holt and J. G. H. Dunn noted that the stressors were reported when the athletes' personal goals were threatened. The most commonly identified sources of stress included personal performance concerns, fitness-related concerns, team performance concerns, leadership ability, and injury. Personal performance concerns included the fear of making mistakes. Fitness-related concerns were related to the athletes' perceived lack of fitness and some of the athletes avoided extra physical training. Leadership ability was discussed by one athlete who was having difficulty deciding the proper leadership approach to use with the team. Dugdale, Eklund, and Gordon (2002) also found that athletes reported that a recent or ongoing injury or illness was the most stressful experience noted prior to a major international competition.

Research on sources of stress mentioned above (e.g. Campbell & Jones, 2002b; Gould et al., 1983b; Gould, Jackson, & Finch, 1993; Noblet & Gifford, 2002; Scanlan et al., 1991) suggest that organizational factors have an influence on athletes. Elite level athletes have a very close working relationship with the national governing bodies of their sport. Organizational stress in sport is related to the interaction between the individual and the sport organization within which that individual is operating and can be defined as the stress that is associated primarily and directly with an individual's appraisal of the structure and functioning of the organization within which he/she is operating (Woodman & Hardy, 2001). As a result, only those issues that are directly related to the organization, such as coaches or selection criteria, are viewed as potential sources of organizational stress, whereas issues such as parents or school are not considered in this topic.

In-depth interviews were carried out with 15 international male and female elite performers by Woodman and Hardy (2001a). The authors kept the sport and its national governing body anonymous due to the sensitive nature of discussing organizational stress. The interview questions were based on Carron's (1982) model of group cohesion including four major areas: environmental issues, personal issues, leadership issues, and team issues as they related to their experiences of major international competitions. Environmental issues were the first major area and these encompassed selection, finances, and training environment. Personal issues were the second major area and included nutrition, injury, and goals and expectations. The third major area was leadership issues and was comprised of coaches and coaching styles. The fourth major area was team atmosphere, such as tension between athletes, lack of social cohesion, and a separation of groups within the team. Gould and colleagues (Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999) also noted that organizational stressors, such as sport organization politics and poor administration, were associated with less successful performances.

One source of stress that is pervasive and has been documented in the literature among both children and adults is social-evaluation (Cohn, 1990). This concept has had a significant effect on the decline in adolescent sport involvement (Brustad, Babkes, & Smith, 2001). Alfred Adler held the opinion that humans have a need to achieve a level of competency (or superiority) over the environment and others, although the individual's social interest or relationships mediate this need (Ewen, 1993). It is the belief of James and Collins (1997) that "social evaluation is symptomatic of a larger and more fundamental process which underpins competitive stress, namely, self-presentation" (p.

18). They used in-depth interviews with male and female athletes to study the self-presentational sources of competitive stress during performance. Of the 20 athletes in the study, two were international level, eight were national or semi-professional, three were regional or district athletes, and seven were club level athletes. The researchers employed the same definition of stress developed by Scanlan and colleagues (1991) and applied by Gould, Jackson, and Finch (1993). James and Collins identified eight general dimensions including significant-other stressors, social evaluation and self-presentational concerns, competitive anxiety and doubts, perceived readiness issues, nature of competition, environmental demands, not performing to required standard, and miscellaneous factors. James and Collins reasoned that significant others were perceived as stressful because "their proximity and power alerted the athlete to the social consequences of performance, thereby elevating impression motivation" (p. 31). These findings also parallel a number of the antecedents of precompetitive state anxiety discussed by Jones et al. (1990, 1991) including the roles played by perceived readiness, outcome expectancy, match importance, and environmental factors.

As an athlete pays more attention to his or her behavior, the experience of somatic presentations of anxiety, such as muscle tension, may interfere with bodily movement (Leary & Kowalski, 1990). Leary (1992) reasoned that a concern with others' perceptions and evaluations could increase the perceived importance of a performance. Leary further explained that concerns regarding the crowd's reactions might result in excessive self-consciousness, anxiety, and choking. Sport competition anxiety, as seen by Leary, centers on the self-presentational implications of competition. During competition, there is a risk of conveying negative images of oneself to observers,

teammates, coaches, and opposing team members. Conversely, nonparticipation or "benchwarming" may result in self-presentational concerns (Leary, 1992). A benchwarmer may feel stress from being replaced by a new team member or not receiving playing time. Leary also acknowledged that the impact of failure or poor performance might result in frustration from losing, lowered self-esteem, and the real and imagined evaluative reactions of others.

Elite level athletes from a variety of sports often experience many of the same stresses regardless of whether they compete for a university, club, or their country. Some of these pressures include environmental issues, personal problems, significant other influences, self-presentational concerns, high performance standards based on expected potential, injury, fitness, and organizational issues (J. G. H. Dunn, 1999; Gould, Jackson, & Finch, 1993; Gould et al., 1999; Holt & J. G. H. Dunn, in press; James & Collins, 1997; Kroll, 1979; Noblet & Gifford, 2002; Scanlan, Stein, & Ravizza, 1989, 1991; Woodman & Hardy, 2001). Elite athletes experience stress from both competition and noncompetition sources (daily stressors and major life events), therefore one must consider the totality of the athlete's experience (Lazarus & Folkman, 1984). Studies focusing on youth athletes have found that concerns most often focus on performance-related worries, external control-guilt (bad luck), and social evaluation (Gould et al., 1983b), whereas research with older athletes has identified situation-specific factors, such as outcome expectancy, environmental factors, and perceived readiness, as being salient stresses (Jones et al., 1990, 1991).

Psychological Antecedents of Injury

While many factors contribute to injury, the most obvious examples are physical or biomechanical factors such as overtraining, equipment failures, poor field conditions, weather, and the nature of the sport (Smith, Smoll, & Ptacek, 1990). Discounting high-risk situations, some athletes seem plagued by an inordinate amount of injuries and are considered accident prone (Arnheim & Prentice, 1999). A variety of theories exist that attempt to explain the relationship between stress and injury. Physiological changes that occur during stress, such as muscular tension or differences in attention, may increase the susceptibility to injury (Nideffer, 1983). The influence of psychological and social factors related to the occurrence and rehabilitation of sport injuries has long been suspected, although this area has only begun to receive empirical support in the last three decades (Andersen & J. M. Williams, 1988; Brewer, 1998).

Physiological Changes

Researchers have hypothesized that changes related to muscle tension or attention can contribute to an athlete's susceptibility to injury. Andersen and J. M. Williams (1988; J. M. Williams & Andersen, 1998) believed the stress response, including the physiological and attentional aspects, was very closely related to the incidence of athletic injury.

Many physiological changes occur during stress, but it has been speculated that increases in generalized muscle tension may play a large part in the stress-injury relationship (Nideffer, 1983). Muscle tension can disturb motor coordination and reduce flexibility, thus contributing to strains, sprains, and other musculoskeletal injuries (Arnheim & Prentice, 1999). Baumeister (1984) found that situational demands for high

levels of performance (i.e. pressure) caused the individual to attend consciously to his or her internal process of performance. This consciousness disrupted the internal processes and harmed the performance.

Changes in attention also occur as a result of stress. Stress may result in distraction where one of two processes could occur: (a) the performer no longer selectively filters cues and attempts to process a larger amount of information, thus overlooking task-relevant cues; or (b) the performer processes a normal amount of information, but the focus is shifted to task irrelevant cues, therefore the critical cues are ignored (Baumeister & Showers, 1986). Andersen and J. M. Williams (1988) suggested that a narrowing of the visual field may occur where cues in the peripheral vision are not picked up thus increasing the likelihood of injury, such as being blind-sided. Andersen and J. M. Williams (1999) found that from baseline to the stress condition in a perceptual task, state anxiety increased, peripheral vision narrowed, perceptual sensitivity decreased, more targets went undetected, and reaction times became slower. These findings provided support for the notion that individuals with more negative life events and greater peripheral narrowing during stress incurred more injuries than those with the opposite profile.

J. M. Williams and colleagues (1991) noted that in order to more fully understand attention changes during stress, consideration should be given to the previous stress history of the individual, specifically as it relates to experiencing negative life events. These variables have been found to be strongly related to the susceptibility to injury.

Psychosocial Variables

Research in the area of psychosocial variables, such as life stress and social support, which predispose athletes to injury, has recently received attention (Ford, Eklund, & Gordon, 2000). Early research focused on personality constructs and produced inconsistent results (J. M. Williams & Andersen, 1998). Researchers have linked the psychosocial stressors of marital discord, financial distress, and relationship crisis with increased incidence of injuries, illness, and poorer performance in athletes (Davis, 1991).

An athlete's history of stressors including life events, daily hassles, and previous injuries directly impacts the stress response and, consequently, on injury risk (Andersen & J. M. Williams, 1988; J. M. Williams & Andersen, 1998). Life events are major changes in an individual's life, such as marriage, death of a loved one, or change in financial status (Andersen & J. M. Williams, 1988). They noted that stress may stem from minor daily problems, irritations, or changes the individual encounters. These chronic daily stressors may be independent of major life events or may be a direct result of a major life event, such as the logistics encountered when moving to a new city. Contradicting results have been found for the relationship between daily hassles and injury. Patterson and colleagues (1998) found that microstressors exhibited a stronger relation with measures of well-being than did major events, although Hanson and colleagues (1992) found no relationship between minor life events (daily hassles) and frequency of injury.

Hardy and Reihl (1988) studied the connection between life stress and injury frequency for male and female intercollegiate athletes and found negative life stress to be

predictive of injury only for female athletes, even though they did not report significantly more life events than the male athletes. E. C. Dunn, Smith, and Smoll (2001) found that sport-specific stress predicted athletic injury beyond that accounted for by general life stress for female athletes, but not for male athletes. They noted that the base relation between stress and injury is stronger for female than for male athletes. These findings suggest that female athletes might experience stressful life events differently than males and these events might have a greater impact on their susceptibility to injury.

Considerable evidence exists to support the relationship where coping resources moderate the effects of life stress (J. M. Williams & Andersen, 1998). Coping resources comprise a wide variety of behaviors and social networks that help the individual deal with the problems, joys, disappointments, and stresses of life. General coping behaviors, a social support system, and stress management and mental skills are different types of coping behaviors. General coping behavior refers to factors that may influence an athlete's overall stress level including sleep patterns, nutritional habits, time management, general self-esteem, and study skills.

The social support system that an athlete possesses is a major coping resource. Rosenfeld, Richman, and Hardy (1989) found that social support is provided by coaches, teammates, friends, and parents, and that each makes a unique contribution to the athletes' social support network in the form of technical challenge, technical appreciation, emotional challenge, shared social reality, and listening support. J. M. Williams, Tonymon, & Wadsworth (1986) found that the only predictor of injury among intercollegiate volleyball players was a low level of coping resources. Hanson and colleagues (1992) found that coping resources contributed the most in group differences

for both severity and frequency of injuries where the injury groups had significantly fewer coping resources compared to the no injury group. Petrie (1992) hypothesized that social support, depending upon the level, appears to function in two different ways when athletes experience high negative life stress. High social support seems to protect the athletes from injury, but low social support appears to exacerbate the deleterious effects of life stress. Petrie (1993b) found that for football starters, more severe injuries, greater time loss, and more games missed occurred for players with high negative life stress and low social support; no relationship emerged for non-starters. Smith and colleagues (1990) found that coping resources moderated the life stress-injury relationship, but did not directly affect injury occurrence; having either social support or psychological coping skills reduced injury vulnerability. Ford, Eklund, and Gordon (1997) did not find support for previous research suggesting social support buffers life stress in their study of athletes from seven sports. They suggested that having high numbers of support providers could, in itself, be stressful.

Injuries affect a wide range of people including athletes, their families, and athletic programs due to adverse physical and psychological consequences, high medical costs, and limitations on team success because of missing players (E. C. Dunn, Smith, & Smoll, 2001). High anxiety, abnormal muscle tension, restlessness, insecurity, and poor self-esteem combined with low levels of confidence can also lead to an athlete being accident prone (Arnheim & Prentice, 1999). Prospective research designs have been used to measure psychosocial variables during the pre-season and the findings suggested that athletes with high life stress, poor coping skills or behavior, or low social support appear more vulnerable to injury (Blackwell & McCullagh, 1990; Hanson, McCullagh, &

Tonymon, 1992; Patterson, Smith, Everett, & Ptacek, 1998; Petrie, 1992, 1993a, 1993b). Positive events were not predictive of subsequent injuries (Passer & Seese, 1983; Patterson et al., 1998; Smith et al., 1990). J. M. Williams and Andersen (1998) stated that a large portion of the literature supported the conclusion that coping resources (particularly social support) directly affects injury outcome, moderates the life stress-injury relationship, or does both, although injury researchers may not know exactly how these intermingle.

Summary

In summary, previous research suggests that although each sport is unique in its circumstances, athletes who differ in sport, age, ability, and experience share some common sources of competitive stress (James & Collins, 1997). As a result of this common ground, it is important to consider these worries because of the influence they may have on an athlete's performance (Baumeister, 1984; James & Collins, 1997; Leary, 1992; Leary & Kowalski, 1990) or susceptibility to injury (Andersen & J. M. Williams, 1988; J. M. Williams & Andersen, 1998). Hardy and Jones (1994) noted that information of practical significance for the enhancement of mental preparation for performers could be developed.

CHAPTER III

METHODOLOGY

In this chapter, the methodology is explained including the participants, procedure, and data analysis. The qualitative methodology used followed the guidelines set forth by Lincoln and Guba (1985), Patton (2002), and Rubin and Rubin (1995). The data analysis followed the guidelines set forth by Côté and colleagues (Côté, Salmela, Baria, & Russell, 1993; Côté, Salmela, & Russell, 1995).

Participants

The participants in this study were six female National Collegiate Athletic Association (NCAA) Division I ice hockey players. These athletes attended a NCAA Division III institution which hosts Division I ice hockey for men and women. The university was classified at this level because all of the sports hosted were Division III, with the exception of the men's and women's ice hockey teams. This institution was also a member of the Eastern College Athletic Conference (ECAC) North Division I Ice Hockey League of the United States.

The NCAA is the organization through which American colleges and universities speak and act on athletics matters at the national level. It is a voluntary organization that regulates the administration of intercollegiate athletics and serves as the colleges' national athletics accrediting agency (NCAA, 2002b). There are three membership divisions and active member schools determine which division is the most appropriate for each educational institution's programs. The decision is based on the school's ability to meet established criteria including sports sponsorship criteria, football and basketball

scheduling requirements, academic and other eligibility standards, and financial aid limitations (NCAA, 2002a).

Division I is the highest level of competition. Institutions in this division are required to meet minimum financial aid awards for their athletics program and there are maximum awards for each sport that cannot be exceeded. There are contest and participant minimums for each sport in addition to scheduling criteria. Division II institutions also have contest and participant minimums for each sport, but only have scheduling criteria for football and basketball. There are maximum financial aid awards that are not to be exceeded and teams usually feature local or in-state student athletes. Division II athletes finance their education through a combination of scholarship money, grants, student loans, and employment earnings. Division III institutions have contest and participant minimums for each sport, but feature student-athletes who do not receive financial aid related to their athletic ability. These athletic departments are staffed and funded like any other department in the university (NCAA, 2002c).

NCAA Division I ice hockey is comprised of four leagues including the ECAC, Hockey East, Central Collegiate Hockey Association (CCHA), and Western Collegiate Hockey Association (WCHA). The ECAC is also the oldest and largest women's university hockey organization in the United States. ECAC North is comprised of nine ice hockey programs (ECAC, 2001a). The ECAC has a rich tradition of high level athletes including members of the United States and Canadian Olympic hockey teams (ECAC, 2001c).

In order to identify participants that were rich in information relevant to the research questions, purposeful sampling was employed in the selection of participants

(Patton, 2002). Maximum variation sampling is a type of purposeful sampling where a wide range of cases are chosen to get variation on the dimensions of interest. By using maximum variation sampling, important common patterns that appear across variations are expected to emerge (Patton, 2002).

The participants in this study were selected with the help of the coach of the women's team. In order to achieve a maximum variation in sampling, two athletes representing each of the first three years of university were invited to participate. These athletes had just completed their freshman, sophomore, or junior year at university. Noblet and Gifford (2002) advocated purposeful sampling based on the criteria of amount of experience at the specific competitive level. The ages of the participants ranged from 19 to 22 years with the mean age being 20.2 years.

Criteria such as campus living arrangements, grade point average, academic major, scholarship status, and family members involved in hockey were considered. The participants lived in the same dorm and five out of six lived in the same suite. The grade point average for the sample ranged from 2.5 to 3.4 with a mean of 3.0. Half of the participants had been named to the All-Academic Team for the previous season, which meant that they must have completed at least one academic year, have had a cumulative grade point average of at least 3.0 on a 4.0 scale, and have competed in at least one half of their team's contests during that season (ECAC, 2002b). While two of the participants were undecided, the academic majors of the others included Psychology, Economics, and English. Each of the participants was on an athletic scholarship. All had siblings, parents, or grandparents involved in hockey and two of the participants had close relatives that play or have played professional hockey.

The participants were contacted by phone and informed of the nature of the investigation and asked to participate. They were individually interviewed for 18 to 35 minutes over a period of one week during preseason training in the Sport Psychology Lab on the participants' campus. Their anonymity was protected through the use of a coding system. Each participant was assigned a label numbered 1 through 6 (i.e. IH1, IH2, through IH6).

Interview Technique

In qualitative research, the interviewer is the instrument of data collection. As a result, the interviewer must be well acquainted with the techniques to be employed during the interviews. This section discusses building rapport, the type of interview used, and the composition of the interview guide, including main questions, probes, conversational repairs, and follow-up questions (Patton, 2002; Rubin & Rubin, 1995). Each interview followed the same format to ensure consistency in the data collection.

The interviewer began the process by building rapport with the participant. It was the researcher's responsibility to develop a climate in which the participants felt at ease with the researcher prior to the actual data collection. Lincoln and Guba (1985) noted that the participant should be given time to "warm up" in a relaxed atmosphere prior to the interview (p. 270). Building rapport with the participants was done before the interview began. Rubin and Rubin (1995) suggested beginning an interview with an informal chat about either the researcher's interest in the topic or a commonality with the participant that points in the direction of the topic. The participants read and signed a consent form (see Appendix A) in addition to completing a brief biographic questionnaire (see Appendix B). The interviewer explained the purpose of the study and began the

audio tape recorded portion of the interview when the participant was ready. It was emphasized that there were no right or wrong answers to the interview questions. The participants were also told that they would receive a verbatim transcript of their interview to edit or use to clarify their points before any analysis began.

Interview strategies vary in the amount of structure they possess. The informal conversational interview lacks structure and is the most open-ended approach. The opposite is a closed, fixed-response interview where questions and response categories are determined in advance. The participant must choose from among the fixed responses (Patton, 2002). This study used an intermediate strategy consisting of a series of open-ended questions. The open-ended interview was comprised of a set of questions that were carefully worded and arranged in advance with the intention of taking each participant through the same experience. All of the participants were therefore asked the same basic questions in the same order (Patton, 2002). The purpose of using open-ended questions to gather data was to allow the researcher to capture the points of view of the participants without predetermining those points through the use of a questionnaire. The participant was able to respond by describing what was meaningful and relevant without being "pigeon holed" into standardized categories (Patton, 2002, p. 56; Rubin & Rubin, 1995).

An interview guide listed the questions to be explored during the interview (see Appendix C). The purpose was to ensure that the same lines of inquiry were used with each participant. An interview guide increased the efficiency of interviews by making the interview systematic and comprehensive. An additional benefit of the interview guide was that the exact instrument used in the evaluation was available for inspection by

those who reviewed and read the evaluation (Patton, 2002). The interview guide consisted of three types of questions: main questions, probes, and follow-up questions.

The purpose of the main questions was to encourage people to describe their lives by providing examples and stories that the researcher could follow up on (Rubin & Rubin, 1995). Main questions served to specify the area of concern without limiting the discussion to specific themes or events because one was trying to obtain a broad overview. As a result, the main questions were also referred to as "grand tour" questions (Rubin & Rubin, 1995, p. 180).

The participants were asked four major questions during the interview. The questions were based on previous research about elite figure skaters. Scanlan, Stein, and Ravizza (1989) noted that social and life opportunities, perceived competence, social recognition of competence, and the act of skating were the four major sources of enjoyment. Further studies of elite figure skaters revealed that some of these areas of enjoyment were also sources of stress (Gould, Jackson, & Finch, 1993; Scanlan et al., 1991), therefore the first question centered on sources of enjoyment. The second and third questions were focused on dislikes and areas of surprise, since the researcher thought that these areas might also be sources of stress. The fourth question asked the athletes to discuss any stressors they felt in relation to their overall experience as Division I ice hockey players. The final question gave the athletes a chance to add anything else they felt was pertinent. It also allowed the researcher to end the interview.

Probes are prompts or questions that were used in order to deepen the response to a question, increase the richness and depth of responses, and give cues to the participant about the level of response that was desired (Patton, 2002; Rubin & Rubin, 1995).

Verbal elaboration probes were used such as "What was it about [specific source] that made it a cause of stress to you?" and "What was it about [specific source] that made it a source of stress?" A minimum of two elaboration probes per source of stress were used to establish a consistent level of depth across participants and interviews (Gould, Jackson, & Finch, 1993; Scanlan et al., 1991). Patton noted that non-verbal elaboration probes, such as gentle head-nodding, were also helpful in encouraging the participant to continue talking. Clarification probes served to tell the participant that the interviewer needed more information, a restatement of the answer, or more context (Patton, 2002) such as "I'm not sure I understand exactly what you mean. Would you please go over that again?"

In addition to clarification probes, misunderstandings were also cleared up through the use of conversational repairs. In a conversational repair, the researcher asked for clarification by suggesting what the researcher thought the participant meant and asking for confirmation (Rubin & Rubin, 1995). Rubin and Rubin further stated that if the participant misunderstood the question, the researcher should politely listen to the mistaken reply, then (without reference to the mistake) rephrase the question so it is clearer and ask it again. At the end of the interview the participants were given a chance to add any other information that might not have been touched on that they felt was pertinent to the topic discussed during the interview (Patton, 2002).

Follow-up questions served to explore the taken-for-granted aspects of the culture (Rubin & Rubin, 1995). Rubin and Rubin noted that recognizing when to follow-up requires more skill than wording the follow-up question. These questions focused more explicitly on the themes frequently mentioned in the interviews and invited illustrations

or stories. Another application for these questions pertained to questions about conflicting cultural values, such as university students' need to socialize and make friends, in addition to getting a solid education and good grades.

As noted by Scanlan and colleagues (1991), the participants were reminded that the discussion involved the participants' overall experience as Division I athletes, not just one particular facet thereof. The participants' responses drew on any and all aspects of their involvement in Division I athletics including practices, games, tournaments, relationships, academics, scholarships, ambitions, and interactions with other people, or anything else that was pertinent or an important part of the participant's experience. It was emphasized that there were no right or wrong answers to these questions.

Data Analysis

The interviews were analyzed using the procedures outline by Côté and colleagues (Côté et al., 1993, 1995). The objective of the content analysis was to reduce a volume of qualitative data by identifying core consistencies and meanings. Inductive content analysis allowed properties and categories to emerge from the data (Patton, 2002). Two main procedures were employed in the data analysis, the formation of meaning units and the organization of these into the higher order themes.

First, the interviews were transcribed verbatim with only minor editing procedures performed on the data such as changing names that threaten anonymity and adding relevant information in brackets to clarify ambiguous segments in the text (Côté et al., 1995). The six transcripts were broken down into 314 quotes, called meaning units, which comprised a single thought (Tesch, 1990). The meaning units were then given a

name or tag reflecting the content. A total of 45 tags emerged from the data. It was possible for multiple meaning units to receive the same tag.

Second, the common features among the meaning units were identified. This procedure involved comparing the meaning units with similar tags and grouping them together into distinct groupings called properties (Côté et al., 1993). The 45 tags were grouped into nine categories. The property reflected the common features that the meaning units shared. The properties were then compared for common features and then organized into three larger and more embracing categories.

Trustworthiness

This qualitative research procedure yielded a copious amount of data. To make certain the data was not misinterpreted or mishandled, the researcher ensured the credibility of the research through the use of trustworthiness techniques recommended by Lincoln and Guba (1985; Sparkes, 1998). Trustworthiness is based on the question of "How can an inquirer persuade his or her audiences (including self) that the findings of an inquiry are worth paying attention to, worth taking account of?" (Lincoln & Guba, 1985, p. 290). Some of the techniques included pilot testing, prolonged engagement, persistent observation, reliability checks, member checks, triangulation, and a computer program for data analysis.

The interviewer underwent training and carried out pilot testing prior to the onset of the study. This training included becoming versed in qualitative methodology as outlined by Lincoln and Guba (1985), Patton (2002), and Rubin and Rubin (1995). Pilot interviews with four female collegiate ice hockey players were carried out under the supervision of an individual with experience in qualitative research. The first pilot

interview was observed and evaluated by a trained interviewer. The second, third, and fourth interviews were conducted without a trained interviewer being present. All of the pilot interviews were audio and video taped. They were reviewed by the trained interviewer with feedback given to the researcher. Each participant was given the opportunity to make suggestions for improvement of the interview guide and interviewing techniques. Pilot interviewing was necessary to ensure the skill of the researcher and the relevance of the interview guide.

Lincoln and Guba (1985) discussed the importance of prolonged engagement. This consisted of becoming familiar with the culture and vocabulary of the participants and building trust. This was accomplished in a variety of ways. Knowledge of the university that these athletes attend was gathered by spending time on the campus and in its academic departments. The history and accomplishments of both the men's and women's ice hockey teams were also read. Information regarding the sport of ice hockey from the athlete's perspective was acquired by participating in ice hockey skills classes and by playing on an intramural ice hockey team. Literature regarding sources of stress found in other elite level athletes was reviewed. Trust of the interviewees was built by explaining the confidential nature of the interview, that the players' responses would not be used against them, and that the participants would have input into the data analysis.

The purpose of persistent observation was to identify those characteristics and elements of a situation that were most relevant to the topic being pursued (Lincoln & Guba, 1985). An examination of the NCAA guidelines and requirements for scholarship and eligibility was completed to become more familiar with the standards that the athletes

must uphold. A discussion with the coach regarding expectations of the players also took place.

Reliability checks are a form of data analysis validation and were carried out by a trained research assistant (Côté et al., 1995). Reliability checks were also known as peer review and were carried out independent of the primary researcher. Discrepancies in classification between the primary researcher and the research assistant were discussed until a consensus was reached. Validation reduced the potential biases of either researcher so that the quotes, properties, and categories created represented more accurate interpretations of the participants' experiences (Scanlan, Ravizza, & Stein, 1989).

The research assistant was presented with a random sample of 25% of the meaning units and was required to place them under the appropriate tags that best identified each meaning unit. A reliability rate of 81% was reached for analysis of the meaning units. The tag "men's hockey" was changed to "men's style hockey" because it was decided the original tag did not adequately reflect the meaning in the passages with that tag. The research assistant also classified the 45 tags into the nine properties. A 96% rate of reliability was reached. Upon further discussion, two of the tags were renamed to reduce the ambiguity of their meaning. The tag "others' perception of team" was renamed "others' negative perception of team" and the tag "hockey siblings" was renamed "siblings in hockey". The research assistant placed the nine properties into the three categories and achieved a 100% rate of reliability.

Lincoln and Guba (1985) stated that member checks were the most crucial technique for establishing credibility. This involved presenting the data, analytic categories, interpretations, and conclusions to members of the group from whom the data

were originally collected. It provided the participants with an opportunity to correct errors of fact and to ensure adequate representations and conclusions that were made. The participants were given a verbatim transcript to review prior to data analysis where they were allowed to elaborate on or eliminate text. The goal was to have a transcript that accurately reflected what the participant was trying to say. Transcripts were sent back to the participants, four elected not to change anything, one requested that a passage be omitted, and one did not reply. Upon completion of the data analysis, the participants were given a brief summary of the findings and were asked for their feedback. Only one responded and she agreed with the findings.

Triangulation is another way to improve the chances that the findings and interpretations will be found credible (Lincoln & Guba, 1985; Patton, 2002). Denzin (1970, 1978), Miles and Huberman (1984), and Patton (2002) established five methods of triangulation including the use of multiple and different: (a) sources (multiple copies of one type of source or different sources of the same information), (b) methods (different data collection modes or different designs), (c) investigators (team of researchers), (d) theories, and (e) data types (qualitative, quantitative, audio, video). Triangulation was satisfied by using more than one investigator. A second investigator was used in addition to the primary researcher to aid in the reliability of the data analysis. The data was stored as text and the audio tapes were available for independent analysis. An audit trail, or log book, was also kept during the course of the data analysis to keep a record of all the steps followed. As previously mentioned, the results were also discussed with the participants to ensure that they agreed with the description of the findings.

The software program NUD*IST 4.0, specifically designed for the analysis of qualitative data, was used. This program aided in the organization of the data from coding to categorization. Côté and colleagues (1995) found that electronic organization of the data facilitated data interpretation by keeping a systematic classification of each meaning unit and its source. Electronic handling of the data ensured that data was not lost or misplaced during the analysis (Côté et al., 1993).

CHAPTER IV

RESULTS

This chapter gives the results of this study beginning with a synopsis of the nature of the data, including a description of the inductive content analysis. The three higher-order categories including educational demands, hockey pressures, and relationship issues are discussed. The nine properties that comprised these three categories are described and are illustrated by excerpts from the interviews. The excerpts in each case are followed by a label (IH1 through IH6) to credit the participant that provided the quotation.

Nature of the Data

This study yielded a total of 314 meaning units (MU) from the six interviews. A total of 45 tags emerged from the 314 MU. Table 1 (in Appendix D) shows the frequency of topics discussed for each of the participants labeled as IH1 through IH6. The total number of meaning units from each participant ranged from 41 (IH2) to 63 (IH5). Due to the open-ended nature of the interviews, not every participant discussed the same topics; therefore, the frequency of each tag from the total sample ranged from 1 to 23. The tags that were most often discussed were the participants love of Division I ice hockey (n = 23), time management (n = 22), and academic pressures (n = 20). The tags that were discussed the least (n = 1) were health concerns, length of the season, nutrition, pregame stress, and the relationship with the men's team. The 45 tags were organized into nine properties and are displayed in Table 2.

Table 2

Grouping Under Property Headings with Frequencies of Stressors Expressed by Women Ice Hockey Players

Property and Tags	n	IH1	IH2	IH3	IH4	IH5	IH6
Academic Concerns	**33**	**11**	**1**	**10**	**5**	**3**	**3**
Academic pressures	20	7	0	6	3	3	1
Academic support	10	2	1	3	2	0	2
Eligibility	3	2	0	1	0	0	0
Advantages of Playing D I	**53**	**12**	**5**	**14**	**2**	**8**	**12**
Dedication to sport	8	2	2	0	0	3	1
Love of D I Hockey	23	7	0	9	1	1	5
Men's style hockey	2	0	0	2	0	0	0
Perks	11	3	2	2	0	1	3
Skill level of female hockey players	4	0	1	1	1	0	1
Recognition from others	5	0	0	0	0	3	2
Family and Significant-Other Relationships	**22**	**5**	**6**	**0**	**6**	**3**	**2**
Boyfriend	5	0	2	0	0	3	0
Parental pressure	10	2	2	0	5	0	1
Parental support	5	2	2	0	0	0	1
Siblings in hockey	2	1	0	0	1	0	0
"Hockey Family" Relationships	**47**	**8**	**3**	**7**	**14**	**7**	**8**
Pleasing the coaches	7	0	0	4	0	3	0
Relationship with coaches	11	3	1	0	3	1	3
Relationship with men's team	1	0	0	0	1	0	0
Relationship with team-mates	15	1	2	3	6	0	3
Talking behind backs	9	0	0	0	4	3	2
Trust from coaches	4	4	0	0	0	0	0
Hockey Performance Stressors	**59**	**8**	**5**	**14**	**4**	**19**	**9**
Athletic performance concerns	11	0	0	5	0	5	1
Letting team down	5	1	0	4	0	0	0
Consistency on ice	8	0	0	0	0	8	0
Making mistakes on ice	7	3	3	0	0	1	0
Playing time	8	4	1	0	1	2	0
Pregame stress	1	0	0	0	0	0	1

Table 2 (continued)

Properties and Tags	n	IH1	IH2	IH3	IH4	IH5	IH6
Pressure from self	8	0	0	1	3	0	4
Role on the team	8	0	1	2	0	3	2
Team achievement	3	0	0	2	0	0	1
Social Concerns	**29**	**4**	**7**	**1**	**4**	**9**	**4**
Conduct off ice	5	2	3	0	0	0	0
Maintaining personal image	2	1	0	1	0	0	0
Social life	17	1	1	0	3	9	3
Others' negative perception of team	5	0	3	0	1	0	1
Time Concerns	**41**	**2**	**7**	**5**	**11**	**7**	**9**
Daily schedule	6	0	1	1	2	1	1
Length of season	1	0	0	0	1	0	0
Time commitment	6	1	3	1	1	0	0
Time management	22	1	3	1	7	5	5
Traveling	6	0	0	2	0	1	3
Training Concerns	**19**	**3**	**3**	**0**	**4**	**6**	**3**
Health concerns	1	0	0	0	1	0	0
Nutrition	1	0	0	0	0	0	1
Physical training issues	11	1	1	0	3	5	1
Work ethic	6	2	2	0	0	1	1
Transition to NCAA	**11**	**2**	**4**	**1**	**0**	**1**	**3**
Choosing a school	2	1	0	0	0	0	1
Leaving home	2	0	0	0	0	0	2
Seriousness of program	2	1	0	0	0	1	0
Uniqueness of program	5	0	4	1	0	0	0
Totals	**314**	**55**	**41**	**52**	**50**	**63**	**53**

The nine properties were then grouped into three higher-order categories, labeled educational demands, hockey pressures, and relationship issues. A tabular representation of the properties in each category is presented in Table 3.

Table 3

Higher-Order Groupings of Stressors with Frequencies as Expressed by Each Participant

Categories and Properties	n	IH1	IH2	IH3	IH4	IH5	IH6
Educational Demands	**74**	**13**	**8**	**15**	**16**	**10**	**12**
Academic Concerns	33	11	1	10	5	3	3
Time Concerns	41	2	7	5	11	7	9
Hockey Pressures	**142**	**25**	**17**	**29**	**10**	**34**	**27**
Advantages of Playing D I	53	12	5	14	2	8	12
Hockey Performance Stressors	59	8	5	14	4	19	9
Training Concerns	19	3	3	0	4	6	3
Transition to NCAA	11	2	4	1	0	1	3
Relationship Issues	**98**	**17**	**16**	**8**	**24**	**19**	**14**
Family and Significant-Other Relationships	22	5	6	0	6	3	2
"Hockey Family" Relationships	47	8	3	7	14	7	8
Social Concerns	29	4	7	1	4	9	4
Totals	**314**	**55**	**41**	**52**	**50**	**63**	**53**

The common thread linking the three major areas of stress was the time concerns; specifically, achieving a successful balance between the categories (see Figure 1). As one athlete noted during the interview, the major stressors that she experienced were, "just getting my work done, keeping up with the workouts, and hanging out" [IH5]. Although the athletes tried to maintain a healthy balance between the three areas, they did note that sometimes their priorities changed and one area might lose a bit of attention. The participants observed that their ability to balance the areas improved throughout their Division I experience.

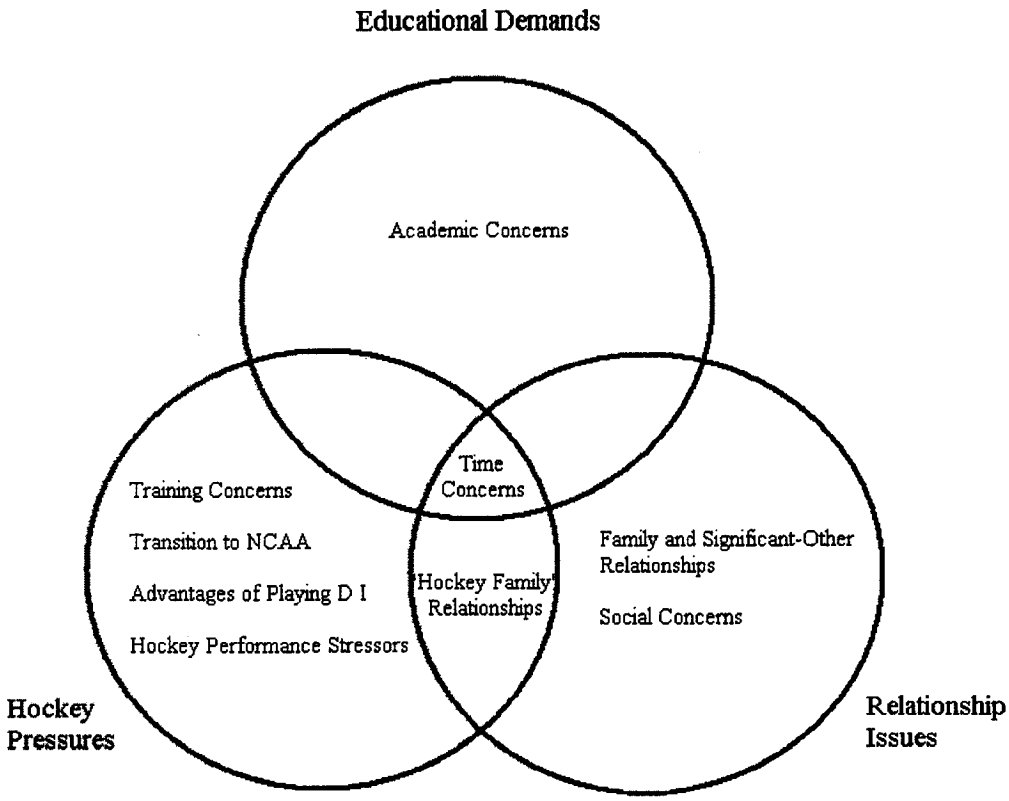

Figure 1. Relationship among the Higher-Order Categories of Stress Expressed by Women Ice Hockey Players.

Educational Demands

The category labeled educational demands included 74 MU and accounted for 24% of the total MU. It encompassed the pressures that the athletes faced as they tried to balance their educational goals with their athletic pursuits. This included the properties of academic concerns and time concerns.

Academic Concerns

The property of academic concerns includes the academic demands that the athletes felt in addition to maintaining appropriate grades. Academic concerns contained

the academic pressures, academic support, and eligibility. Some of the pressures the athletes sensed included balancing their academics with their participation in hockey. In addition, they discussed how that participation impacted on their academic functioning, such as completing schoolwork, getting good grades, difficulty of classes, and making up schoolwork.

> Sometimes I take a break, but if I want to keep up and get good grades I can't slack off. I am talking probably 3-4 hours of work every day for school work to keep up and get good grades, but that's just me. I need to work hard to get good grades. Another person could work for an hour and they will be fine, but it's hard for me. It takes me a long time to learn and do stuff, I have to do it extra so it's really hard. [IH5]

> Yesterday I had to sacrifice skating to going to a meeting and Monday I have to sacrifice skating to go to another meeting. Sometimes I worry. I don't think it's a big deal, but I don't want the coaches to feel like, "Why isn't she here? Is she lazy or something?" I kind of worry about that sometimes, but I know obviously it is for the best. I know I should be going to this rather than to free skate. [IH1]

> Teachers saying "You know your school work comes first", especially because this school is dominantly Division III. At the same time, I have to be at practice until this time and I don't have time to read the extra hundred pages because I have this other project to finish, that can be stressful because it's hard. [IH4]

The athletes also discussed the academic pressure they felt from others. This pressure came from a variety of sources including the pressure to do well from coaches, professors, and roommates, as well as difficulties with professors.

> The coaches are always asking "How are classes going?" I'm a bit nervous about that, not so much being able to play, but I know that I have to do well because it's important to the coaches, it's important to me. There's a lot of school work. I feel like there's just so much to do so that kind of stresses me out. [IH1]

> Some of the teachers can be very stressful. Just for an example, we were going on the road; it was a Thursday and it was our second road trip. I was still trying to figure out how it all worked. My coach said, "Before we got on the bus, I want everyone to go for a skate because we have a nine hour bus ride, so I want you to skate around and get you're legs moving so that you're not too dead on the bus." He said, "Tell your teachers that we're leaving at 11:00 [A.M.], be at the rink at 11:00," so I told them that. Of course class ends at 11:40 so I had to leave 40

> minutes early. I go to the rink and he says, "Throw your skates on and go skate a few laps, come off, pack your stuff up, and load the bus." I did and we all went over to the gym to shower. When we were coming out of the gym with one of our seniors at the time, my advisor was walking in. It was 12:00 I guess, an hour after I left class, and he looked at her and he said, "Aren't you on the hockey team?" She said, "Yes" and he said, "Well, why are you here, you left at 11:00?" She replied, "Well, we were all at the rink at 11:00, but we're just leaving now because our coach just wanted us to skate a couple of laps and get our legs moving before we sat on the bus for nine hours." Well, this is not good to him. He went into the Athletic Director's office screaming, "These students can't leave my class! They can't! They're not even leaving for the road and she thinks she gets this special treatment to get out of class so she can go and skate before!" He's going nuts. I was sitting there like I have no idea. I am just doing what my coach tells me to do. So yeah, teachers can be stressful. [IH4]

The athletes also discussed the academic support they received. They obtained academic support from a range of people including their teammates, roommates, coaches, professors, and tutors.

> You get a lot of help around too. Most of the girls are older. I think they're great. My roommate and I are the youngest two in the suite so everybody helps out a lot if you have any questions. [IH3]

> The one good thing about our team is that everyone kind of helps each other like, "I've taken that class if you need help with it". We help each other. We have tutors and all that stuff, but it takes getting used to, that's for sure, because it's busy, very busy. [IH4]

This property also included the pressure to maintain a grade point average high enough to be eligible to play hockey. This concern was voiced by two of the participants.

> I guess at a smaller school like this one, academics are just as important. You have the individual player trying to maintain the right grade point average just to play. I can't imagine not keeping that average and having to sit out because of my academics. That stresses me out sometimes. [IH3]

Time Concerns

The time concerns that the athletes discussed included the difficulties the athletes felt as a result of having extremely full and taxing schedules. This included the concerns

the athletes' had with their daily schedule, length of the season, time commitment, time management, and traveling. The athletes' daily schedules were packed with activity.

> My day usually consists of waking up, going to classes, working out for hockey, and doing work for the rest of the night. That's my day for sure. [IH5]

> At 7:30 A.M. my alarm goes off, I finished printing off the homework that I had finished last night at around 1:00 [A.M.], I was in class from 8:30 to 10:00 and 10:10 to 11:40, I had a sandwich, I worked at the rink from 12:00 to 2:00 (I supervised the ice so I was on the ice trying to break in a new pair of skates for two hours), then I had to run back to my room, grab my workout clothes so that I could come here. I'll go to work out at 4:00, work out from 4:00 to 5:30, we'll skate from 5:30 to 6:00 skating lines with Coach, we'll scrimmage from 6:00 to 7:00, get changed, probably ride the bike, then leave the rink around 7:45, go to dinner, come home, shower, be done that probably around 9:30, and then tonight from 9:30 to whatever time I have to finish a one hour presentation for class tomorrow morning. That's today so that is a busy day. [IH4]

The time commitment that is required of the athletes was discussed by four of the athletes. The considerable amount of time that hockey requires came as a surprise to one of the athletes.

> I'd say the only other thing that is kind of surprising, because I didn't realize the extent of it, is exactly how much time was required. Everyone says you're getting paid to play a game kind of thing, but it's a lot of work. Every other weekend I am gone for three days and then everyday I am at the rink for five hours. It's a lot of time. That kind of surprised me because I wasn't used to, first of all, being on the ice every single day of my life, but being there for that long. That was a bit of a shock to get used to. [IH4]

Time management was the second most often discussed concern with 22 MU and was referred to by all of the athletes.

> Time management is huge. Well usually, I know my freshman year, they give us the first two weeks from the day you get on campus to kind of get into your classes, get everything with your classes sorted out. You have to have a full course load. You get all that sorted out, get kind of into the routine of going to classes, and doing your work before we start. This year I think we started classes on a Thursday, and that Monday we had 7:00 A.M. testing and then we had 4:00 lifting. We only had four days. I think on this year's freshman it has been a little harder because they didn't have that time, but time management is huge. The coach will come in most times at the start of the year and give you some

> suggestions and advice about how to do things. Personally, I think it is one of those things that you have to figure out on your own, like what works best for you. Some people do better to get up early in the morning and do their work. Some people will stay up all night doing work. It just depends. [IH4]

> For instance, my sophomore year I started getting anxiety attacks because it's hard to balance the hockey, training, school, and then relationships and a social life. When you're trying to budget your time between all those things, sometimes you run into some trouble; you stay up too late and then your performance decreases. [IH6]

> You have to really learn how to balance it or you'll run into problems. Now I am totally balanced, but as I was saying, my first years it was a lot harder; plus leaving home at seventeen, going so far away, and I thought, "Whoa, party time!" You just really have to prioritize everything and make time for everything. You have to find a balance I think. [IH6]

The concerns regarding traveling encompassed both the enjoyment from traveling, including getting to see new cities, as well as the impact that traveling had on academic functioning.

> We leave Thursdays, sometimes Friday mornings, for road trips. I miss classes Thursdays and Fridays so it depends on how many road trips we have. Last semester, I missed four or five classes so that takes up extra time... We basically have to do our homework on the road because we don't get back until Sunday or Saturday night late. During exam times, we had games away or we had games at home and a lot of our girls had to study on the bus and take an exam that morning when we got back so its just tough. I've had to take exams on the road because I'd miss them on a Friday and they'd make us do it with our coaches. Things like that are kind of tough. [IH3]

In summary, the topic of educational demands focused on the balance between school and athletics, including the academic and time concerns that the athletes expressed. This consisted of areas concerning academic pressures, academic support, maintaining eligibility, as well as the athletes' daily schedule, length of the season, time commitment, time management, and traveling.

Hockey Pressures

The category of hockey pressures comprised 45% (n = 142) of the total meaning units. Hockey pressures referred to the demands and rewards that the athletes contended with as a result of their participation in a NCAA Division I sport, as well as the adjustments they made to play at that level. The labels given to these groupings of hockey pressures were: the advantages of playing Division I, hockey performance stressors, training concerns, and the transition to the NCAA.

Advantages of Playing Division I

The advantages of playing Division I hockey included the satisfaction, fulfillment, and challenge that the athletes felt as a result of their participation in a Division I sport, such as the athletes' dedication to the sport, their love of playing Division I hockey, playing a style of hockey closer to the men's game (faster and more physical), perks, skill level of female hockey players, and the recognition they received from others outside of the team.

Differing opinions on the amount of dedication to the sport were discussed by four of the athletes. It was felt by two of the athletes that other players were not as dedicated as they should be at such a high level, although the other two athletes commended the level of dedication that they thought existed on the team.

> I guess what surprised me is that some players that play at this level it seems like they are not dedicated. You are playing the top level of hockey and it seems like it's not one of their priorities. They have passion for it, but it doesn't really show I guess. That surprises me because you would think that playing at this level that you really want this, you're ready to play a lot, and you'd be really serious about it. That surprised me. [IH5]

> I love the dedication. I think there's a bit higher level of dedication knowing that it's a Division I sport. I think most people put more work into it than maybe, I've

> never played a Division III sport at this level, but I've played other sports that I know personally I didn't put as much into if it wasn't my first sport. [IH2]

The athletes' love of playing Division I hockey was the idea with the most meaning units (n = 23). The athletes mentioned that they enjoyed the high level of competition in the division, the personal importance of playing Division I, and their love of the overall experience.

> Basically it's the highest level of hockey you can play for girls, except for Team Canada or Team USA. An even smaller number of people get to go on and play at that level. I think this is the highest level for girl's hockey. It's very competitive and competitiveness has always been a part of me. [IH3]

> I think what I like the most about it is that when I've gone out and played hockey, it was kind of in the back of my head [playing Division I hockey], but I didn't really think it was realistic. As I became more serious about it, it became something that I really wanted to do. I knew that if I could do it, it would be the biggest accomplishment. It has been probably my best accomplishment in my life. [IH1]

> I just think playing a Division I sport is the best experience for any female athlete because that's it unless you go to the Olympics. I know when I have kids I hope they can have the experience that I had. I think when you become a senior, you finally realize all that you have gotten, that this is pretty neat sometimes. I had great coaching and I had a great experience here. It's a great school. [IH6]

The perks that the athletes receive as a result of their participation were discussed by five of the athletes. The athletes expressed their pleasure at receiving a variety of "extras" including food stipends, tuition, equipment, and traveling expenses.

> It's not privileges, but the things that we get like our equipment and traveling arrangements. Everything is paid for. We basically don't pay for anything, food, nothing. It's paid for so that type of stuff. That is pretty cool. [IH3]

> There are a lot of perks like full scholarships, free equipment, and clothes. Everything is free basically. [IH6]

The skill level of the hockey players was mentioned by four of the athletes. The comments focused on the increasing skill level of the upcoming players, as well as the

skill of the league as a whole. One athlete also mentioned that this large pool of skilled players could be a stressor for some athletes.

> It's hard, especially in Division I sports, your best athletes from your town, your best athletes from your province or your state, and you all collaborate together. Some people may not be the best here and they may not dress. I would imagine that causes some people stress. [IH6]

The recognition that the athletes received as a result of their participation in such a highly visible program was discussed by two of the athletes. They noted that people in the area, as well as those from home, were very interested in and supportive of the athletes' participation.

> It's funny, but people come up to you and ask "How was your practice today?" and you're thinking, "And you are?" You have no idea who the people are and the teachers always ask you how hockey is going. Even people in town know you. You walk in a bank somewhere, say your name, and they ask, "How's hockey?" I just thought that was really weird. In class, the teachers will know how the games went. Fans, such as super fans, like to talk to you. They just recognize you. They recognize you as someone different from just everybody else. I'm not trying to be cocky. It's just different. [IH5]

Hockey Performance Stressors

The property of hockey performance stressors focused on the difficulties that arose from pre-game and on-ice situations and was the largest grouping with 59 MU. This included the tags for pregame stress, making mistakes on the ice, consistency on the ice, letting the team down, amount of playing time, finding a role on the team, team achievement, pressure from self, and other athletic performance concerns. The athletic performance concerns that the athletes discussed included the pressure of performing in front of people, scoring, and achieving an expected level of performance.

> It makes you think a lot. It does stress you out because since I've been playing, that's what I've done. Not that it just came naturally to me, but it seemed like I could score. I didn't know how I did it half the time. It makes you think a lot and worry about whether you're going to come in and be good enough to score goals

> that they that they expect you to. It affected my play because every time I stepped on the ice, all I thought about was "What if I don't score this game?" It is not that I didn't get chances to score. When I had a chance to score, that's all I could think about, and I would screw up. I guess it stressed me out. I had a tough year stress wise and worrying about a lot of stuff which I kind of learned not to let get to me. [IH3]

The concerns about consistency on the ice, letting the team down, and making mistakes on the ice were very similar. The notion of letting the team down was centered on concerns about disappointing teammates. Making mistakes on the ice focused on mistakes in practice, as well as in game situations. The athletes feared that mistakes would result in a loss of playing time. The idea of playing time was discussed by four of the athletes and was related to getting the amount of playing time that they felt they deserved.

> You might not be playing a regular shift and that also causes me stress. During the week at practice, you don't play well, you might worry about things like am I going to play, especially this year because we have a big roster. It's definitely the amount of playing time, more whether or not you'll make the line up, but it's always up in the air. I think that has to do with knowing where I stand with the coaches and on the team. I know this year we are going to work on it a lot more than we have in the past. I think that should help, but that's definitely a stressor for me and just with the time too. [IH2]

> I think it's harder too with girl's Division I sports because most teams don't have the depth that a guy's team has. There are players that play a lot and players that don't play at all. I think that can also cause conflict because I don't know what I would do if I didn't play. When you are so used to something, you're so competitive, and all of a sudden be told "Ok you're not playing this game..." I can't lie, but we have some great girls on our team that deal with it and they're good. [IH4]

The pressure that the athletes put on themselves was strongly related to feelings of competitiveness, fulfilling expectations the athletes have for themselves, and not wanting to fail.

> Oh yeah, you see this scar over here [on hand]? That was because I had a bad game. I have expectations for myself that are probably higher than what my

> coaches have, my teammates have, probably higher than my Dad has, and if I don't feel like I am playing to the best of my ability, it'll bring me right down. It'll be very frustrating for me. I'll get very angry and it's pretty stressful. I know what I am capable of and I expect myself to do that every time. Obviously no one can do that. When I think about that, I know that, but when I am playing, it's expectations that I have for myself, and I just feel like I should be able to do it every time. If I can do it once, I should be able to do it all the time. I get frustrated, not with anyone else, just with myself more than anything. I am a little hard on myself. [IH4]

Training Concerns

The grouping of training concerns was associated with on- and off-ice training. It included the tags for health concerns, nutrition, physical training issues, and work ethic. Health concerns and nutrition each had one MU and were focused on staying healthy during the season and eating properly. The physical training issues discussed included not having experience with weight training prior to entering the program, difficulties in getting the whole team together for a team workout, boredom with workouts, and motivating one's self to work out hard. Of the five athletes who discussed physical training issues, two stated that they enjoyed the exercise.

> I guess practice sometimes. I'm not a big fan of the team workouts. It is not because I don't like being with my team, but sometimes it's hard to get everyone together for just a plain workout. Usually when we do, like today at four o'clock, I'll be running from one thing, someone else is running from somewhere else, and we all get there and it's kind of like "(sigh) Ok, let's get it done". At the same time, we all like to work out on our own too, so we may as well do it together. [IH4]

The tag concerning the athletes' work ethic was related to working hard and maintaining a positive work ethic.

> There are a lot of people that work really hard and they don't get the opportunity that some people do when they [the hard workers] don't. It kind of just happens for them regardless of whether they worked hard or not and it really bothers me. I don't know if it's just because it's Division I or here [at this school]. I kind of feel bad saying this though. It's not the coach's fault or anything. That just really bothers me. [IH1]

Transition to NCAA

The property related to the transition to the NCAA was the smallest property with 11 MU. It included the pressure that the athletes faced prior to and upon entering a NCAA Division I program and the adjustments the athletes had to make in their new environment. It was related to choosing a school, leaving home, the seriousness of the program, and the uniqueness of the program. The program was unique because it was the only Division I program in what was classified as a Division III school.

> I remember that it was stressful deciding on a college. I remember being in tears picking which school to go to because coaches started calling me. I think they're allowed to start calling January 1st and they were calling me all through the year. You have to make your decision in about April and you have developed friendships with all of these coaches so it's hard. That was stressful. [IH6]

> I was only seventeen though. Coming so far you have no connections with anyone around you and you're basically coming all alone. It's different; it's a totally different lifestyle up here. [IH6]

> I am talking about women's hockey because in any women's hockey we are always second to men's hockey or they don't really pay attention to us. Here it is different. Here you have ice time, you can go on the ice whenever you want, you've got your coaches there, you've got the recognition from people around you, and you travel together, you fly or you take a bus. I just feel like it's a pro team because you get all the attention, you get most of what you want, and it's always there for you. I am especially talking about when we went to the Frozen Four my freshman year. It was so professional. They had interviewers coming in your room after the game and talking to you. They had press conferences and stuff like that, which is really impressive. It was really professional. I feel like a pro athlete because you get so much attention. [IH5]

The topic of hockey pressures was related to the hockey performance stressors, training concerns, and the transition to the NCAA. These pressures ranged from on-ice performance stressors and physical training difficulties to adjusting to a collegiate program. It also included the advantages that the athletes perceived as a result of playing Division I ice hockey.

Relationship Issues

The category of relationship issues accounted for 31% of the meaning units (n = 98). It referred to all of the relationships that the athletes had in their personal lives, the hockey community, and the school. It consisted of three sub-categories of concerns including family and significant-other relationships, "hockey family" relationships, and social concerns.

Family and Significant-Other Relationships

The family and significant-other relationships sub-category consisted of the concerns about boyfriends, parental pressure, parental support, and siblings in hockey. Only two of the athletes discussed their boyfriends and they both noted the difficulty of spending time with them because they themselves had such full schedules. Of those two participants, one had a long distance boyfriend and the other was dating a player on the men's ice hockey team.

> It makes me a little stressed sometimes such as this weekend; it is the last weekend that I'll probably be able to sneak away. We don't have very many weekends off from here on in, but it's just the way it works. If it's mean to be, it's meant to be. That's what I think about it. That's what gets me through, but I talk to him everyday. I mean it's not like I don't have time for that, but I'd love to see him more, see my parents more, my family more, but now's not the time it's going to happen. It's stressful sometimes, but not to the extent where I'm ready to flip out or anything, too often at least. [IH2]

> He also plays hockey so he understands. We just do our things and we find time even if it's just half an hour a day. We both understand each other and he lives very close to me at home so we saw each other all summer. I would not say it's hard if you are both dedicated to each other and to the sport, but if you're just not sure if you want to be in it then it's not worth it. We both understand and if he says, "I can't see you, I have to go work out or I have this much work to do", then it's understandable because I know where he is coming from so I don't think it's hard at all. [IH5]

The parental pressures included a sense of a need to do well in school and to perform well in hockey. Although the emphasis on the need to do well in hockey was discussed in depth by one participant, the other athletes did not necessarily experience the same amount of concern from the family.

> My Dad never played hockey, but he played pro soccer, my brother played really competitive hockey, and my mom still plays competitive sports; I had a really highly competitive and athletic family. My parents still go to the gym three times a week and I guess I've always been brought up that way. They've always expected me to be more competitive as I go along and to get better. Everyone wants their child to be the best right? My brother had to quit because of academics. He's really smart, he's an engineer now, getting his doctorate and all that, and he ended up quitting for that reason, then it was kind of like all the focus went on me. It was like, well you're the one, you have to go to Team Canada... My dad and I have had our battles just because he is very much involved; his parents never went and supported him so he felt like he had to be there all the time with me. He couldn't miss anything; my first year he did not miss a home game at all. He flew from Vancouver and saw every single home game. It's just insane because he felt like his parents were never there so he went to the other extreme. Not that I don't like him being there, but it's just that every game it was never, "Oh, you did this well or that well", it was, "Why didn't you do this? You did this wrong". He's very much a perfectionist so we've had a couple of battles over that just because I was like, "I scored three goals; you could at least tell me I did that right". He's very critical, and not to be mean, it is with good intentions, but sometimes when your parents are trying to give you the constructive criticism, it doesn't exactly come across that way. You just don't want to hear it at the time, but he's gotten a lot better as I've gotten older. I think that also pushes me too because as much as I would get mad at him for saying it, I was still kind of like I have to do it better so that he doesn't have anything to say. [IH4]

Along with the pressure the athletes faced from their parents was the support the athlete's felt for their hockey participation.

> They [parents] are so supportive. That helps me too. They make a lot of the road trips so it's good. [IH2]

> They have been supportive all along. When you're a kid playing, they're the ones that feed you, take you to practice, all that stuff; they're the ones that get up at 5:00 A.M. to take you. You kind of owe it to them to do well. They don't put pressure on me though. [IH6]

A couple of the athletes also discussed other siblings' involvement in hockey as having influenced their participation. The athletes were influenced by older brothers who were involved in ice hockey.

> Well it's not like I'd get in trouble if this didn't happen, but my older brother, who's an excellent hockey player, the best, so good, he got hurt. It's also a little bit that he was here and he regretted not playing here because he was really good. He knew he could play here, but he just never did. He tells me all the time that it's that biggest mistake of his life so far. The fact that I'm playing here is kind of like his dream so he's so proud of me and everything. [IH1]

"Hockey Family" Relationships

The "hockey family" relationships were comprised of the interactions within the hockey community including the men's and women's programs. This property was called the "hockey family" relationships because that is the term that one of the athletes used to describe the associations within the hockey community. This included the tags for pleasing the coaches, relationships with the coaches, men's team, and teammates, talking behind backs, and the trust of the coaches.

> I'm not saying there is one side and you have to do what they tell you to do here, well sort of... it's just the fact that they could have chosen twenty other girls that wanted to come here so badly and I was one of the ones they gave the money to. I couldn't afford to come here if they didn't. I'm saying the fact that they're paying for my education, a good education, and I don't do what they expect me to, that's why they brought me here, I'll feel bad that I'm not doing it. The fact that they're taking care of me basically academic wise, education wise, if I don't do what they want me to do then I sort of have guilt, a guilty conscience. [IH3]

> With our school being so small, especially, and our hockey teams here get a lot of attention because it is the only D I sport, nothing happens to one person on a hockey team without both hockey teams, men's and women's, and all coaches knowing about it. The event I told you about that already happened this year that happened at one of our teammate's cottages, the men's team and coaches knew about it before we even got back the next day. That's how fast it goes. Nothing happens without the hockey family knowing. Everyone knows and it's ok. We all say one big family. Whatever happens in this rink stays in this rink. We have our own hallway and all of the visitors use the other side; whatever happens in this hallway stays in this hallway. [IH4]

The relationship with the coach was discussed by one of the athletes as being a stressor because of the differences between coaching a men's team and a women's team.

> There's even the coaching side of it that can sometimes be stressful. Our coach came from the men's team and if you ever do an interview with him, you'll probably never stop laughing because for him coming from a men's program to a women's program, it was different. His first year was my freshman year and so many times he would just literally smash his stick over the post and be like "I have got to get out of here," he'd leave, and that would be it. He would get so frustrated because he could go out and yell at a guy on the ice, "Smarten up, get your ass in gear" kind of thing, and they'd be fine, but you yell like that at some of the girls on our team, they'd cry. He's thinking "What am I supposed to do?" I think it has been a slow process for him to transition. Sometimes it's awkward having a man coach with a female team, but I think it depends; it's a matter of opinion. I prefer a man coach because I feel like they push me more; girls tend to be a little more laid back, some of them aren't, believe me it's not so fun. [IH4]

The close connection shared by the hockey community was the most evident when five of the athletes discussed the bonds with their teammates.

> I made a lot of great new friends for sure. I live with seven girls on our team right now and they're like my sisters. We're getting closer and closer every year I think. It's tough to see girls go, but you make great friends and meet a lot of great people, thousands of great people from hockey and it's unbelievable. I really think that's another big thing. [IH3]

> We live, breathe, eat, and sleep with each other; we shower with each other. We are with each other so much that I think it would be impossible to have friends outside of it that would know you as well as the people within your team. [IH4]

Although the athletes emphasized how close the teammates were to each other, three of the athletes discussed the amount of talking behind backs that takes place within the team and how that affects the team.

> Sometimes, especially being on a girl's team and because we know everything about each other, girls are girls, they talk about each other, they talk behind people's backs, and that can sometimes be a problem. It just causes conflicts between people. It'll cause little fights, but I mean it's the same thing with guys. Guys will talk about each other too, but with guys its more of a I heard you said this about me, they fight, it's done, and they are friends again; whereas girls are girls and they hold a grudge. I know sometimes, if someone says something

about someone, they'll be mad for a week; that can get to a team. I know we've already had one incident this year where something happened to us; someone said something they shouldn't have and everyone knew about it within five minutes. I think we're getting better now because we have a lot of seniors so we have a lot of good leadership. In the past we haven't had really good leadership, these problems all build, and no one ever does anything. That part of it, off ice, can be a problem... I think one of the worst ones is the players that don't get played or don't even dress at all; then you get the well, why is she playing, she shouldn't be out there. That can be hard on the coach and it's hard on everyone else too. [IH4]

In girl's sports there is a lot of talking behind backs; it's like any sorority... It's kind of like a cancer throughout the team because when it starts, it doesn't really stop until it's talked about. Some people know what's going on and others don't. The team has been really good with that this year though. It's been worse in previous years. [IH6]

Social Concerns

The sub-category of social concerns encompassed the difficulties of having a fulfilling social life and the additional attention and scrutiny that these athletes faced as a result of participation in the program. This was associated with the athletes' conduct off of the ice, maintaining their personal image, balancing a social life, and others' negative perceptions of the team.

Stuff like that I think about a lot, not so much on the ice really because I think everyone is equal, obviously that stuff happens, but also off the ice. I am afraid to make a stupid mistake socially or do anything that would not only embarrass myself, but the team. I don't think it'll happen to me, but I don't want that to happen... Like getting in trouble with the police or something like that. That's what I don't want to happen. I don't think the coaches would like it either. [IH1]

Now that I'm an upperclassman, I don't want to jinx myself, but it's kind of like you're a role model and not so much being the one looking for a role model. That's definitely a new thing that I'm trying to get used to right now. [IH2]

The whole worrying about what other people think of you, worrying about what your teammates think of you, seeing if you're good, and it doesn't really bother me anymore. They can think what they want. I don't really care. I work hard and for me, well it's for them too in a certain way, but the way that they think of me doesn't really bother me anymore. If they don't think I'm good then well ha. [IH3]

The difficulties related to maintaining a fulfilling social life were discussed by five of the athletes and resulted in 17 MU.

> If you are a serious Division I athlete, you're social life takes a beating a little bit, especially if you're serious in hockey and in school. I would say that's the only bad thing about it. [IH5]

> Sometimes you want to go out and have fun during the season, but you don't really have that much time. It's all worth it in the end, but some Friday nights I wish I could go out. [IH6]

The negative perceptions that were held by people outside of hockey were discussed by half of the athletes.

> Sometimes when you get the looks like "They get everything, they get to go everywhere, do everything." That doesn't really add pressure, but you want to do well so people on all the other sporting teams don't think that it's such a waste of money that these girls or these guys get to do everything and get everything given to them, even though we don't. We do pay for stuff ourselves. That doesn't really add pressure, but it's kind of like we want to prove them wrong, that we deserve what we get. We work hard for the scholarships and that kind of thing. That's my take on it. [IH2]

The topic of relationship issues referred to all of the relationships that the athletes had in their personal lives, the hockey community, and the school. It reflected pressures that were sensed from the family, the hockey community, and the social relationships outside of hockey.

Summary

In summary, three main areas of stress were discussed by the participants. The first was the educational demands including the academic concerns and time concerns. The second area of concern focused on the hockey pressures including the hockey performance stressors, training concerns, the transition to the NCAA, as well as the advantages of playing Division I hockey. The final area of concern encompassed the

interaction issues including those involving the family and significant-other, the "hockey family", and the social concerns.

CHAPTER V

DISCUSSION

Researchers have noted that top level sport has become "more than just a game" due to the prestige and identity attached to sporting success (Jones, 1995, p. 449; Maguire, 1993). Athletes experience stress from both competition and noncompetition sources, including daily stressors and major life events (Lazarus & Folkman, 1984). Although researchers have studied stressors in a variety of sports, the majority have focused on all male or mixed samples. Therefore, the purpose of this study was to gain a better understanding of the experiences of Division I female ice hockey players by identifying their sources of stress through the use of a qualitative methodology. This chapter discusses the results of the three main categories that emerged from the data, labeled educational demands, hockey pressures, and relationship issues, in relation to previous studies' finding on sources of stress. In addition, the association between stress and injury is discussed. Methodological considerations are also presented.

Educational Demands

Because the athletes interviewed were university students, it was not surprising that one of the major sources of stress dealt with educational demands. The educational demands discussed by the participants included academic considerations and time concerns. The academic concerns focused on the scholastic pressures to do well in school and support the hockey players received. These areas are discussed in relation to the previous literature.

Some of the academic pressures the athletes felt included balancing their class work with their participation in hockey and how that participation impacted on their

scholarly performance, such as completing schoolwork, getting good grades, and making up schoolwork. Miller and Kerr (2002) identified similar stressors, particularly with respect to the quantity and complexity of university schoolwork. Making up missed assignments was found to be a stressor by Humphrey and colleagues (2000). Other studies found that balancing academics with athletics was stressful for athletes (Cohn, 1990; Noblet & Gifford, 2002; Scanlan et al., 1991). The athletes in this study did note that balancing both became easier the longer they were in school.

It was interesting to note that two of the athletes discussed the pressure to maintain their eligibility although this was not a topic covered in previous literature. The athletes were required to maintain above a certain grade point average or else they would lose their NCAA eligibility. This would mean that the athlete could not compete and would be required to raise their grade point average to regain eligibility for the following semester. This would not have been a salient stressor in many of the previous studies because the athletes were not competing in a university sport.

The high priority given to academics by these women might be related to the fact that they are playing at a Division III school. Universities with that classification are primarily focused on education and secondarily on athletics. In addition, Division I athletics is the highest level of competition for women ice hockey players with the exception of the Olympic Team in the United States. There are significantly less opportunities to have a successful career as a professional ice hockey player for women than for men. As a result, the women may place a stronger emphasis on achieving scholastic goals to prepare them for a career outside of hockey after graduation. Miller and Kerr (2002) also remarked that many Canadian student-athletes in their study were

Physical Education students. This was possibly attributed to the idea that this university department was better able to accommodate the athletes' needs or that this subject area was more interesting to athletes. Half of the ice hockey players in the present study had Sport Science and Education as two minors in addition to their majors.

The ice hockey players in the present study also felt scholastic pressures from a variety of sources including professors, parents, teammates, and coaches. One athlete noted that her professor became very angry at the 'special treatment' he thought she received as an athlete and complained to the Athletic Director. A study by Baucom and Lantz (2001) suggested that some faculty have prejudicial attitudes towards both revenue and non-revenue male athletes at an NCAA Division II school. They noted that faculty perceived the male student-athletes negatively in situations dealing with academic competence, special services, and recognition. They cautioned that the entire faculty did not hold those perceptions and that the data indicated that faculty still held mostly positive attitudes toward this group of students. The ice hockey players of the present study noted that the professors were predominantly supportive of their educational needs and helped them achieve their goals. One participant also stressed the fact that she had never asked for an extension on any assignment during her three years on the hockey team.

The athletes also noted that they received academic support from their professors, teammates, and coaches. One of the participants described the academic help she received from older teammates and roommates. Many of the older athletes offered to help the younger athletes in classes that they had taken previously. Similar findings were

noted by Miller and Kerr (2002) in that the participants received academic support from teammates in the form of used texts and old class notes.

The time concerns discussed included the difficulties felt as a result of having extremely full and taxing schedules. This included the concerns with their daily schedules, length of the season, time commitment, time management, and traveling. These findings support those of Humphrey and colleagues (2000) who found that 86% of the female athletes in their study were stressed by academic problems such as missing classes because of travel to athletic events and making up missed assignments. Humphrey and colleagues also found that the time, physical, and mental energy needed to prepare for academic requirements was frequently cited as a serious problem because of the time commitment to their sport. The ice hockey players in this study voiced the same concerns, although they did note that they enjoyed the opportunity to travel.

The academic pressures and support received by the female ice hockey players of this study were similar to those found in studies of other athletes with the exception of the concern over maintaining eligibility. Various explanations might account for their emphasis on scholastic success including the lack of opportunities for women to play professional ice hockey after university and the fact that it is a Division III school. The amount of time required to participate in Division I ice hockey was a stressor for most of the athletes, but they learned to manage their time in order to fit in both hockey and school.

Hockey Pressures

The hockey pressures experienced by the athletes included hockey performance stressors, training concerns, and the transition to the NCAA. Some of these stressors

included pregame anxiety, successfully achieving hockey performance goals, the fear of making mistakes, and organizational issues. It also included a discussion regarding the advantages of playing Division I ice hockey, as well as the lack of financial concerns.

Pregame stress was discussed, although it was interpreted by the participant more as excitement to play. This supported the findings of Jones and Swain (1995) where high level athletes interpret anxiety as facilitative to performance. This supports the notion that positive anxiety should be labeled as something more favorable (Jones & Swain, 1992).

The concerns for athletic performance, consistency on the ice, and the pressure from one's self were comprised of the athletes' desire to perform well, to score, and to achieve their performance goals. Feelings of anxiety emerged when these goals were not met successfully. Gould and colleagues (Gould et al., 1983b; Gould & Weinberg, 1985) found that performing up to the level of ability, improving over the last performance, and making mistakes were some of the most commonly cited stressors for junior elite wrestlers.

The fear of making mistakes has been well documented in the literature and appeared in this study. Some of the strain associated with making mistakes was attributed to looking foolish in front of a crowd, as well as to the consequences of such errors including getting benched. The fear of looking foolish was consistent with findings related to self-presentational concerns (James & Collins, 1997). J. G. H. Dunn (1999) found that worries about performance failure, negative social evaluation, and how the coach viewed the performance were characteristic of intercollegiate ice hockey players.

The athletes also discussed organizational stressors related to their participation in a Division I program. Issues directly related to the organization, such as coaches, coaching style, or the roster selection criteria were considered sources of organizational stress; parents and school were not considered in this topic (Woodman & Hardy, 2001a). The athletes experienced anxiety due to the uncertainty of whether they would play or not in the weekend games. The athletes worked through this stress by discussing the evaluation criteria with the coaches and increasing the communication between themselves and the coaching staff concerning their performances.

The transition to the NCAA was discussed by almost all of the ice hockey players. Some of the concerns related to this transition were associated with relocation because the athletes came from all over the United States and Canada. Noblet and Gifford (2002) also noted that relocation resulted in some stressful situations because the athletes missed family and friends and had to adjust to independent living. Miller and Kerr (2002) found that the athletes developed friendships quickly because there was an immediate social network of teammates to ease the transition to university. The older team members made sure that incoming athletes received this support network and this pattern continued in a cyclic manner. The ice hockey players also discussed having a similar experience in their transition to college.

The participants in the present study pointed out a major difference in the treatment they received at their university compared to other programs in regards to ice time. Securing ice time was discussed in previous research as being difficult because women's programs were considered second to the men's programs and often were given the most inconvenient ice time (Fabrizio-Pelak, 2002; Theberge, 1995b; Vanier, 2002;

Williams, 1995). Contrary to other literature regarding women's ice hockey, the current athletes noted that they could go on the ice whenever they wanted and scheduling was not a problem. The men's and women's team rotated their practices daily so that each team had the same opportunity for early and late afternoon practices.

The sub-category regarding the advantages of playing Division I hockey was widely discussed by the participants. It accounted for 17% of the total meaning units and ranked second behind the hockey performance stressors. The advantages that the athletes felt they received as a result of participation included a high level of dedication to the sport, the love of playing Division I hockey, playing a men's style of hockey, perks, the high skill level of play of the female hockey players, and the recognition they received from others outside of hockey. This is congruent with the findings of Boyd and colleagues (1997) where female youth ice hockey players emphasized their "love of hockey" (p. 40). The majority of the athletes in the present study discussed the sense of honor and personal fulfillment that they felt as a result of their participation. In addition, it was mentioned that the choice to play at that level would be made again, regardless of all the stressors and pressure that came with it.

Humphrey and colleagues (2000) found that the athletes frequently discussed financial difficulties as a stressor. Similar findings were noted by Campbell and Jones (2002b), Cohn (1990), Gould, Jackson, and Finch (1993), Scanlan and colleagues (1991), and Woodman and Hardy (2002a). The athletes in this study were all on athletic scholarship and did not discuss finances as being stressful. They did mention receiving scholarships as being an additional benefit of playing Division I hockey because of it being a way to pay back their parents for years of support. Wuerth and colleagues (in

press) hypothesized that intense parental involvement at the youth sport level may suggest to children that they need to repay the parents for the investment of time, effort, and money made to further the child's athletic career. In addition, the fact that the program paid for everything, including equipment, food, and traveling expenses, was discussed as a benefit and that was surprising to some athletes.

The stressors discussed by the women ice hockey players included pregame anxiety, successfully achieving performance goals, the fear of making mistakes, and organizational issues. These findings were similar to those of other research regarding athletic performance pressures. Contrary to previous research results, the ice hockey players of this study did not discuss financial concerns. This could be due to the athletic scholarships that the athletes receive for their participation.

Relationship Issues

The relationship issues category referred to all of the interactions that the athletes had in their personal lives, the hockey community, and the school. It consisted of family and significant-other interactions, "hockey family" relationships, and social concerns. Humphrey and colleagues (2000) had noted that collegiate athletes were stressed by others including teachers, coaches, and fellow athletes.

Some of the stressors that were discussed pertained to pressure that the athletes felt from their parents. This was related to both academic and athletic performance. Both Scanlan and colleagues (1991), as well as Gould, Jackson, and Finch 1993) noted that family relationships were a source of pressure for elite figure skaters. Other researchers have also found that athletes worry about what their parents will think or say about their performances (Gould et al., 1983b; Pierce & Stratton, 1981). Wuerth, Lee,

and Alfermann (in press) found that fathers score higher than mothers on directive behavior because they give more sport specific advice to their children, as well as push them harder to train and give their best. This was illustrated by the ice hockey players in the current study. Two of them mentioned that their fathers give them sport specific advice during games using hand signals or by yelling. Although certain aspects of the parental interactions were considered stressful, such as parental criticism of game performances, the ice hockey players enjoyed the interest the family showed in their participation and appreciated having their family watch their games.

The relationship with significant-others was not considered excessively stressful. Two of the participants discussed their boyfriends and noted that it was sometimes difficult to spend time with them. One of the participants was dating a member of the men's ice hockey team and said that helped decrease the stress associated with their relationship. This was due to the fact that they had similar time concerns and schedules; therefore they tried to capitalize on mutual free time.

The influence of other siblings involved in ice hockey was also discussed. It was mentioned that the participants have siblings that are also involved with ice hockey, as well as others that are successful athletes in other sports. This is consistent with Boyd and colleagues' (1997) suggestion that fathers and brothers had a strong influence on the initial involvement of female youth participants in ice hockey. Gould and colleagues (1983b) found that 10% of the junior wrestlers interpreted as stressful the fact that a sibling was a successful athlete. Only 2.7% of the intercollegiate wrestlers noted that as a stressor (Gould & Weinberg, 1985). One participant of the present study noted that she was basically living out her brother's dream of playing Division I ice hockey. He

attended the same university and repeatedly would tell her that not playing there was the biggest mistake of his life.

The relationships in the "hockey family" were sometimes stressful for the athletes. Although the participants discussed the close relationship with their coaches, they also noted the pressure to perform well (academically, athletically, and socially) to please them. Researchers have found that athletes worry about the coach's perceptions or what the coach will say about a performance (Gould et al., 1983b; Gould & Weinberg, 1985; Pierce & Stratton, 1981). Gould, Finch, and Jackson (1993) found that for individual figure skaters, coaches were reported as a source of social support. Holt and Hogg (2002) found that elite women soccer players perceived their interactions with the coaches as a stressor. Humphrey and colleagues (2000) and Noblet and Gifford (2002) noted that the athletes' frequently cited negative relationships with the coach as being stressful. Contrary to the literature focusing on team sport participants (Holt & Hogg, 2002; Noblet & Gifford, 2002), the ice hockey players in this study did not perceive the relationship with the coaches as being negative in nature.

Humphrey and colleagues (2000) also noted that negative relationships with teammates were stressful for intercollegiate athletes. Similar findings were mentioned by Noblet and Gifford (2002). Studies of the figure skaters revealed that the relationship between skating partners, as well as with other peers at the rink, were often stressful for the athletes (Gould, Jackson, & Finch, 1993; Scanlan et al., 1991). The present ice hockey participants did note that some aspects of the teammate relationships were stressful, specifically the amount of talking behind other people's backs that occurs. This gossiping was perceived as stressful to the team as a whole because it caused tension

between players. The athletes worked through this problem by holding team meetings. It was also mentioned that older players provided strong leadership and set better examples for conduct. As a result, the back talking became less of a problem. Regardless of the conflicts that did arise between players, the overwhelming consensus was that the teammates were a very tightly knit group.

Miller and Kerr (2002) found that the student-athletes benefited from a social support system, their ensuing interactions restricted almost entirely to teammates and other athletes. Some Australian footballers felt they were spending too much time with other players (Noblet & Gifford, 2002) as did some figure skaters (Scanlan, Ravizza, & Stein, 1989). The present ice hockey players discussed the desire to expand the social circle outside of hockey, although many factors made this somewhat difficult to achieve. One factor was that the immense amount of time required for hockey participation left little free time to pursue a social life, although this time commitment led to strong ties with teammates. It was often discussed that the athletes' best friends were their teammates because they spend most of their time together in training, traveling, and living arrangements. This is consistent with the findings of Miller and Kerr (2002) in that the social lives of the athletes consisted predominantly of interactions with teammates and that many of the teammates lived together.

Some of the social concerns the ice hockey players discussed pertained to the conduct off the ice, one's personal image, and others' negative perceptions about the team. The professional athletes in Noblet and Gifford's (2002) study discussed similar concerns relating to constant public scrutiny, other's lack of understanding of the commitment required, and rumors about their personal lives. These topics were also

mentioned as environmental demands on skater resources by Gould, Jackson, and Finch (1993) and Scanlan et al. (1991).

Although some negative relationships were perceived as a part of the Division I athletic experience, the majority of the experiences were positive. The participants professed that their relationships with their families, boyfriends, coaches, and teammates were far less stressful compared to the support they received from these people. The friendships forged between teammates as a result of playing ice hockey were considered to be the strongest of all the relationships formed during university.

Stress and Injury

Research has supported the link between stress and the susceptibility to injury. In addition, the struggle with injury has been widely documented as a stressor in the literature. The findings of this study did not reveal any discussion of injury as a stressor. Potential explanations for this are discussed.

Interestingly, not one of the participants in this study referred to or discussed anything about injuries. It is important to note that the interview guide did not list any questions specifically geared toward discussing injuries because the structure of the interview was open-ended. The interviews also took place prior to the onset of the competitive season and the athletes had just returned to school from summer break. They had participated in pre-season training for only two weeks. As a result, the participants did not have a chance to develop overuse injuries or other injuries resulting from participation and may have forgotten any from the previous season.

The closest reference to injury was made during a discussion regarding missed classes and training due to physical illness. J. G. H. Dunn (1999) noted that the findings

of his study led him to believe that worries associated with the fear of injury or physical danger did not play a major role in the competitive anxiety process of intercollegiate male ice hockey players, although many studies have noted injury as a source of stress (Cohn, 1990; Gould, Jackson, & Finch, 1993; Holt & J. G. H. Dunn, in press; Noblet & Gifford, 2002; Scanlan et al., 1991). It seems that in this study, the female ice hockey players did not perceive injury or the threat of injury as a serious concern.

It has been suggested that female athletes experience stressful life events differently than males and these events have a greater impact on their susceptibility to injury. A study by Hardy and Reihl (1988) found that negative life stress was predictive of injury only for female athletes, even though they did not report significantly more life events than the male athletes. E. C. Dunn, Smith, and Smoll (2001) found that sport-specific stress predicted athletic injury beyond that accounted for by general life stress for female athletes. They noted that the base relation between stress and injury is stronger for female than for male athletes.

The social support system that an athlete possesses is a major coping resource. Rosenfeld, Richman, and Hardy (1989) found that social support is provided by coaches, teammates, friends, and parents, and that each makes a unique contribution to the athletes' social support network. The ice hockey players reported having a very strong social support network in and out of hockey. This may have acted as a buffer to decrease the occurrence of injury in this sample of participants. High social support has been found to protect athletes from injury (Hanson et al., 1992; Petrie, 1992; J. M. Williams, Tonymon, & Wadsworth, 1986)

Despite the significant amount of literature supporting the stress-injury relationship, as well as injury being a stressor, the findings of the present study did not offer insight to further the knowledge in this area. There are various explanations for this absence of information including the timing of the interviews and the participants' social support network.

Methodological Considerations

Certain methodological considerations arose from this study and should be taken into account when interpreting the results. Some of these considerations include the choice of participants and the timing of the interviews.

The participants in this study all received a significant portion of playing time and all played out of the net (forwards and defensemen), therefore it may be argued that the sample was not representative of other Division I women ice hockey players. The stressors discussed by a benchwarmer may be different than those discussed by a starter. Athletes playing in certain positions, such as goalies, may have more sport related stress, although goalies were not included in this study.

The interviews all took place during the preseason and a few weeks into the fall semester. As a result, the responses to the questions may be more related to the pressures that the athletes were facing at that moment, instead of related to their total experience as student-athletes. The preseason off-ice conditioning was mentioned as a stressor by some athletes because of the boredom associated with that type of training. The athletes were still in the process of getting settled into school and their new courses. The timing of these interviews may have been a factor in the absence of discussion pertaining to injuries.

Summary

The purpose of this study was to gain a better understanding of the total experiences of Division I female ice hockey players and to identify the sources of stress that exist among the players at one university. The qualitative methodology employed provided an opportunity to gather a wide range of information because the participants were able to respond by describing what was meaningful and relevant without their concerns having to be "pigeon holed" into standardized categories (Patton, 2002, p. 56; Rubin & Rubin, 1995). The relationship between the educational demands, hockey performance stressors, and relationship issues were discussed in relation to previous literature. The present findings support earlier literature regarding worries experienced by youth sport participants, as well as elite athletes, from a variety of sports and geographic locations. The present study did not offer insight to the area of injury. Methodological considerations should be taken into account when interpreting the results including the choice of participants and the timing of the interviews.

CHAPTER VI

SUMMARY AND CONCLUSIONS

This chapter gives a summary of the study, the suggestions for future research, and the conclusions. The purpose of this study was to identify the sources of stress experienced by NCAA Division I female ice hockey players. Identifying these sources of stress is important because of the far reaching effects of stress on performance and the susceptibility to injury.

Summary

While women's sport has grown in popularity over the last few decades, research in this domain has not reflected this trend, especially in the sport of ice hockey. Women's ice hockey has seen a rapid growth in North America where enrollment has increased over 600% in both Canada and the U.S. between 1990 and 2000 (Canadian Hockey, 2002; USA Hockey, 2002). Theberge (1997) noted that school, university, and international competitions provide contexts where opportunities for women are expanding, performances are improving, and public interest is rising. As women's ice hockey receives more attention, it is poised to follow other elite sports where top level sport becomes "more than just a game" (Jones, 1995, p. 449; Maguire, 1993). Unfortunately, there is a lack of scientific literature concerning stressors experienced by female athletes, particularly ice hockey players, even though the sport continues to gain in popularity.

Previous research suggests that although each sport is unique in its circumstances, athletes who differ in sport, age, ability, and experience share some common sources of competitive stress (James & Collins, 1997). Researchers have outlined a number of

factors that are prevalent sources of stress for youth sport participants and elite level athletes including environmental issues, personal problems, significant-other influences, self-presentational concerns, high performance standards based on expected potential, injury, fitness, and organizational issues (Anshel & Delany, 2002; Campbell & Jones, 2002b; Cohn, 1990; J. G. H. Dunn, 1999; Gould, Jackson, & Finch, 1993; Gould et al., 1999; Gould et al., 1983b; Holt & J. G. H. Dunn, in press; James & Collins, 1997; Kroll, 1979; Noblet & Gifford, 2002; Pierce & Stratton, 1981; Scanlan & Lewthwaite, 1984; Scanlan & Passer, 1978, 1979 Scanlan, Stein, & Ravizza, 1989, 1991; Woodman & Hardy, 2001). Athletes experience stress from both competition and noncompetition sources (daily stressors and major life events), therefore one must consider the totality of the athlete's experience (Lazarus & Folkman, 1984). There exists a need to identify a more complete set of stressors beyond competition, including those related to the organizational and occupational concerns of elite athletes (Hardy et al., 1996).

Although much has been researched on stress in sport, this study differs from those previously carried out in that previous studies have used mixed sex samples (Anshel & Delany, 2001; Cross & Harwood, 2002; Gould, Jackson, & Finch, 1993; Miller & Kerr, 2002; Scanlan et al., 1991) or all male samples (Campbell & Jones, 2002b; Cohn, 1990; J. G. H. Dunn, 1999; Gould et al., 1983b; Gould & Weinberg, 1985; Noblet & Gifford, 2002; Scanlan & Lewthwaite, 1984; Scanlan & Passer, 1978). Few studies have focused solely on female athletes. Of those studies that have employed all female participants, both were carried out with soccer players (Holt & J. G. H. Dunn, in press; Scanlan & Passer, 1979). As a result, there was a gap in the literature regarding female athletes, particularly elite ice hockey participants at the NCAA Division I level.

The purpose of this study was to identify the sources of stress experienced by NCAA Division I female ice hockey players. The methodology was similar to that used previously in qualitative research focusing on sources of stress and anxiety in elite athletes (Gould, Jackson, & Finch, 1993; Noblet & Gifford, 2002; Scanlan, Stein, & Ravizza, 1991). Six participants were interviewed using an in-depth open-ended format. The interviews all took place with the aid of an interview guide. In addition, main questions, probes, conversational repairs, and follow-up questions were used in the interviews (Patton, 2002; Rubin & Rubin, 1995). Each interview followed the same format to ensure consistency in the data collection. Trustworthiness techniques were used including pilot testing, prolonged engagement, persistent observation, reliability checks, member checks, triangulation, and a computer program for data analysis.

The data was inductively content analyzed following the guidelines set forth by Côté and colleagues (Côté et al., 1993; Côté et al., 1995). Inductive content analysis allowed properties and categories to emerge from the data (Patton, 2002). Two main procedures were employed in the data analysis, the formation of meaning units and the organization of these into the higher-order themes.

Three higher-order categories of stress emerged and were called educational demands, hockey pressures, and relationship issues. The educational demands focused on balancing academic goals and athletic pursuits. The hockey pressures included the demands and rewards the athletes contended with as a result of their participation in a NCAA Division I sport, as well as the adjustments they made to play at that level. The relationship issues included the interactions in the athletes' personal lives, the hockey

community, and the school. The common thread linking these three categories was time concerns; specifically, achieving a successful balance between the major categories.

The academic pressure and support discussed by the ice hockey players were similar to those found in studies of other student-athletes. The amount of time required to participate in Division I ice hockey was a stressor for most of the athletes, but they learned to manage their time in order to fit in both hockey and school. The performance stressors discussed by the women ice hockey players were similar to those found in other research and included pregame stress, successfully achieving performance goals, the fear of making mistakes, and organizational concerns. Contrary to the findings of previous research, these women ice hockey players did not discuss financial stressors. This could be due to the athletic scholarships that they receive for their participation in ice hockey. Although some negative relationships were perceived as a part of the Division I athletic experience, the participants described the majority of their experiences as positive. The athletes felt considerable support from their families and coaches. The friendships forged between teammates as a result of playing Division I ice hockey were considered by them to be the strongest of all the relationships discussed.

Despite the significant amount of literature supporting the stress-injury relationship, as well as injury being a stressor, the present study did not find support for this contention. None of those interviewed mentioned injury or fear of injury as a source of anxiety. There are various explanations for this including the timing of the interviews, the participants' social support networks, as well as the possible fact that it just is not a significant concern for these women athletes.

Conclusions

Within the confines and limitation of this study, the following conclusions appear warranted:

1. These findings, by and large, support findings of previous research on stressors experienced by elite athletes.
2. The academic pressures and support received were similar to those found in studies of other athletes, although the concern regarding maintaining eligibility had not been previously discussed.
3. Contrary to earlier research, the participants did not discuss finances as being a stressor nor were there any difficulties regarding the scheduling of ice time.
4. The athletes received considerable support from teammates, families, friends, and significant-others.
5. Although playing Division I ice hockey while going to school full-time is a taxing schedule to sustain, the athletes maintain that the stressors they experienced were far overshadowed by the support they received for playing, their love of the sport, and their good fortune to have had the opportunity to play ice hockey at this level.
6. Despite the fact that concerns about injuries have been discussed in previous literature, the participants in this study did not mention injury or fear of injury as a stressor.

Implications

These findings also contribute to the knowledge about elite women's sport because there is a lack of literature focusing on Division I women's ice hockey. Increasing the literature regarding females' experience in sport is desirable. The findings

should aid coaches and other athletics staff in developing programs better suited to female athletes' needs that provide opportunities for academic and athletic excellence. By understanding the stress experienced by athletes, the sport psychologists can help the athletes to cope with the demands placed on them (Gould, Finch, & Jackson, 1993; Holt & Hogg, 2002). In addition, it is also beneficial for everyone involved in their lives including the coaches, support staff, professors, and families to understand the stressors that these athletes experience.

Suggestions for Future Research

Because this study included participants that received significant playing time, future research might address those concerns associated with athletes that play a mainly supportive role on teams. A study focusing on goalies might yield new areas of stress due to the unique nature of the position. It also might be interesting to look at the possible change in stressors sensed over the four years of NCAA eligibility. The participants of this study mentioned that they were less stressed as seniors due to mastering the management of their time. Gould and Weinberg (1985) also noted that more experienced athletes worried less than their inexperienced counterparts. Since the sample of participants played in a Division I program in a Division III school and received a lot of attention, future research could explore the stressors experienced by women ice hockey players in Division I schools where the focus may be less on the ice hockey program than was the case in the university from which our participants were drawn.

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Appendix A

CONSENT FORM TO PARTICIPATE IN RESEARCH

Sources of Stress in NCAA Division I Ice Hockey Athletes

McGill University requires that participants are informed of the purposes of the research study in which they are invited to participate. This does not imply any risk to the participant, nor will the participant undergo harm as a result of participation. Participation is completely voluntary and you may withdraw at any time without repercussions. This study is part of the requirements for a master's thesis by Tracy Heller, a graduate student in the Department of Kinesiology and Physical Education at McGill University.

The purpose of this study is to gain a better understanding of the overall experiences of Division I ice hockey athletes. If you choose to participate in this study, you will be asked to participate in one interview that will last approximately 60-90 minutes and will be audio recorded. This interview is about your experiences as a Division I athlete and your thoughts about your experience. A second interview may be necessary if more data is needed. Following the interview, you will be sent a typed transcript in case you would like to edit any portion of the interview. All of the information disclosed will be kept confidential. The information collected during the interview will be used in the thesis and possibly in an article for publication in a journal or in a presentation at a sport psychology conference. Names of the participants will not appear at any time.

I understand the purpose of this study and know about the risks, benefits and inconveniences that this research project entails. I understand that I am free to withdraw at anytime from the study without any penalty or prejudice. I understand how confidentiality will be maintained during this research project. I understand the anticipated uses of data, especially with respect to publication, communication and dissemination of results.

I have carefully studied the above and understand my participation in this agreement. I freely consent and voluntarily agree to participate in this study.

Name (please print) _____

Signature _____ Date _____

If you have any concerns, feel free to contact us at any time:

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Appendix B

Athlete Biographic Information

Name: _____ Date of Birth: _____

Email Address: _____

Mailing Address: _____

Class Year: _____ Eligibility Year: _____

Academic Major and Minor:_____ GPA: _____

Type of Scholarship: _____

Other clubs, activities, and jobs: _____

_____

_____

_____

Campus Living Arrangement: _____

Number of years playing hockey: _____

Highest level of hockey played: _____

Other family members involved in hockey: _____

_____

Achievements: _____

_____

Appendix C

Interview Guide

1. What do you enjoy most about being a D I athlete?

2. What do you enjoy least about being a D I athlete?

3. Does anything surprise you about playing at this level?

4. Could you name 4 or 5 things about being D I athlete that make you feel pressure or are stressful for you?

   Probes:

   What was it about [specific source] that made it a cause of stress to you?

   What was it about [specific source] that made it a source of stress?

   Would you say that any of the things you do/do not enjoy about being a D I athlete are stressful?

5. Is there anything else that you would like to add?

Appendix D

Table 1

Alphabetical Listing of the Frequency of Topics Discussed by Each Participant

Tags (Level 1)	n	IH1	IH2	IH3	IH4	IH5	IH6
Academic pressures	20	7	0	6	3	3	1
Academic support	10	2	1	3	2	0	2
Athletic performance concerns	11	0	0	5	0	5	1
Boyfriend	5	0	2	0	0	3	0
Choosing a school	2	1	0	0	0	0	1
Conduct off ice	5	2	3	0	0	0	0
Consistency on ice	8	0	0	0	0	8	0
Daily schedule	6	0	1	1	2	1	1
Dedication to sport	8	2	2	0	0	3	1
Eligibility	3	2	0	1	0	0	0
Health concerns	1	0	0	0	1	0	0
Leaving home	2	0	0	0	0	0	2
Length of season	1	0	0	0	1	0	0
Letting team down	5	1	0	4	0	0	0
Love of D I Hockey	23	7	0	9	1	1	5
Maintaining personal image	2	1	0	1	0	0	0
Making mistakes on ice	7	3	3	0	0	1	0
Men's style hockey	2	0	0	2	0	0	0
Nutrition	1	0	0	0	0	0	1
Others' negative perception of team	5	0	3	0	1	0	1
Parental pressure	10	2	2	0	5	0	1
Parental support	5	2	2	0	0	0	1
Perks	11	3	2	2	0	1	3
Physical training issues	11	1	1	0	3	5	1
Playing time	8	4	1	0	1	2	0
Pleasing the coaches	7	0	0	4	0	3	0
Pregame stress	1	0	0	0	0	0	1
Pressure from self	8	0	0	1	3	0	4

Table 1 (continued)

Tags (Level 1)	n	IH1	IH2	IH3	IH4	IH5	IH6
Recognition from others	5	0	0	0	0	3	2
Relationship with coaches	11	3	1	0	3	1	3
Relationship with men's team	1	0	0	0	1	0	0
Relationship with teammates	15	1	2	3	6	0	3
Role on the team	8	0	1	2	0	3	2
Seriousness of the program	2	1	0	0	0	1	0
Siblings in hockey	2	1	0	0	1	0	0
Skill level of female hockey players	4	0	1	1	1	0	1
Social life	17	1	1	0	3	9	3
Talking behind backs	9	0	0	0	4	3	2
Team achievement	3	0	0	2	0	0	1
Time commitment	6	1	3	1	1	0	0
Time management	22	1	3	1	7	5	5
Traveling	6	0	0	2	0	1	3
Trust of coaches	4	4	0	0	0	0	0
Uniqueness of program	5	0	4	1	0	0	0
Work ethic	6	2	2	0	0	1	1
Totals	**314**	**55**	**41**	**52**	**50**	**63**	**53**

Appendix E

MCGILL UNIVERSITY
FACULTY OF EDUCATION

CERTIFICATE OF ETHICAL ACCEPTABILITY FOR FUNDED AND NON FUNDED RESEARCH INVOLVING HUMANS

The Faculty of Education Ethics Review Committee consists of 6 members appointed by the Faculty of Education Nominating Committee, an appointed member from the community and the Associate Dean (Academic Programs, Graduate Studies and Research) who is the Chair of this Ethics Review Board .

The undersigned considered the application for certification of the ethical acceptability of the project entitled:

Sources of Stress in National Collegiate Athletic Association Division I Ice Hockey Athletes

as proposed by:

Applicant's Name Tracy Heller

Applicant's Signature

Degree / Program / Course M.A./Physical Education

Supervisor's Name Graham Neil

Supervisor's Signature

Granting Agency

The application is considered to be:
A Full Review

A Renewal for an Approved Project

An Expedited Review ✓

A Departmental Level Review
Signature of Chair / Designate

The review committee considers the research procedures and practices as explained by the applicant in this application, to be acceptable on ethical grounds.

1. Prof. Ron Stringer
Dept of Educational and Counselling Psychology

Signature / date

2. Prof. Ron Morris
Department of Culture & Values

Signature / date

3. Prof. René Turcotte
Department of Physical Education

Signature / date

4. Prof. Ada Sinacore
Department of Educational and Counselling Psychology

Signature / date

5. Prof. Brian Alters
Department of Educational Studies

Signature / date

6. Prof. Kevin McDonough
Department of Culture and Values in Education

May 3/02

Signature / date

7. Member of the Community

Signature / date

Mary H. Maguire Ph. D.
Chair of the Faculty of Education Ethics Review Committee
Associate Dean (Academic Programs, Graduate Studies and Research)

Signature / date

May 6, 2002