SOURCES OF STRESS, STRESS REACTIONS AND COPING STRATEGIES USED BY ELITE FEMALE GOLFERS

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Dedication

To all of the competitive athletes, young and old, who have the courage to challenge themselves publicly on a regular basis.

Abstract

Golf is an individual sport in which performance is publicly judged daily on the basis of a golfer's scores. Elite golfers, who are required to play well on a consistent basis in order to maintain rankings, must be able to handle competitive situations and pressure in order to succeed. This study explores the sources of stress, stress reactions (emotional, cognitive, behavioral, and physiological), and coping strategies used by elite amateur and professional female golfers. Four elite amateur golfers and four professional golfers participated in this study. Structured individual interviews were used to gain insight into the sources of stress, stress reactions, and coping strategies used by the two groups of golfers. The responses given by the elite amateur golfers and the professional golfers were analyzed, and common themes were developed. The results indicate that stress is an individual response to each golfer's perception of her ability to cope with a situation. Although they recognized stress at different times and in different ways, these golfers used some common cognitive and behavioral strategies to deal with stressful situations. It is important for sport psychologists to understand the common sources of stress, stress reactions, and effective coping strategies used by elite golfers, in order to generate effective stress intervention programs for golfers of all skill levels.

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  The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires. -- William Arthur Ward
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Chapter 1

Introduction

Athletes who are involved in competitive sport can expect to be placed regularly under intense physical and psychological demands. These demands require athletes to use not only the technical and tactical skills that they have developed but also cognitive and behavioral coping skills, in order to achieve performance success and satisfaction (Crocker, Alderman, & Smith, 1988). Anyone who has been a sport participant or observer has certainly observed certain athletes who tend to "peak" during competition and, at the same time, other athletes who tend to falter or "choke" in the same competitive situations. Research on how athletes cope with sport-related stress has been recognized for both its practical and its theoretical importance because of the debilitating effects that stress may have on athletic performance (Smith, 1986). Stress can affect athletes in ways other than their sport performance. Some drop out of sport because they find athletic competition to be threatening rather than enjoyable (Gould, Feltz, Horn & Weiss, 1982). Sports medicine practitioners and athletic trainers have found that athletes who find competitive situations stressful or anxiety producing appear injury prone and/or seem to take longer to return to activity following injury (Nash, 1987).

Sport is an arena of achievement in which ability is publicly tested, scrutinized, and evaluated. Because of the debilitating effects that stress can have on performance, athletes must learn to cope with the demands and pressures of competition if they are to enjoy and succeed in sports. Research has been conducted to discover or identify the sources of stress in various competitive sports, including basketball (Madden, Summers, & Brown, 1990), figure skating (Scanlan, Ravizza, & Stein, 1989), college baseball

(Anshel, 1996), golf (Cohn, 1990), and wrestling (Gould, Eklund, & Jackson, 1983). According to Anshel and Delaney (2001), two limitations of these studies have been their lack of differentiation between acute and chronic sources of stress, and their failure to link sources of stress to athletes' appraisal and coping strategies (p. 333).

Athletes have identified several sources of acute stress in team activities: receiving unpleasant input from peers, fans, coaches, experiencing pain or injury, making a physical or mental error, receiving a "bad" call from an official, and receiving negative feedback from the coach (Anshel, 1996; Anshel & Kaissidis, 1997). However, the association between cognitive appraisal and the subsequent use of coping strategies as a function or result of the cognitive appraisal has been overlooked in the sport psychology literature (Anshel & Delaney, 2001).

An athlete's appraisal of an event may be closely linked to his or her subsequent use of coping strategies – or, if the event is not perceived as stressful, to not having to cope at all. For example, if an athlete interprets an event as not stressful or only slightly stressful, a coping strategy may not be required. If, however, the event is appraised as highly stressful, then the content of the appraisal will partially determine the athlete's selection of a coping strategy or set of strategies (Anshel & Delany, 2001).

Golf is one sport that demands effective coping strategies. Many professional golfers agree with golf legend Sam Snead's statement, "Golf is a game played on a six inch course – the space between your ears" (Kirschenbaum & Bale, 1980). One thing that makes golf so difficult is the amount of time that passes after each mistake (or shot) before golfers can take action and hit another shot. Also, golf is a game in which

improvement comes relatively slowly. These circumstances tend to promote negative self-evaluations by golfers (Kirschanbaum & Tomarken, 1982).

A number of studies have investigated the relationship between stress and performance in sports, including golf. These will be reviewed in Chapter 2, as will the available literature on the psychological skills that differentiate elite performers from others. In addition, many studies have investigated the sources of stress in athletes engaged in competitive sports.

Cognitive appraisal is particularly relevant in the coping process in competitive sport. The manner in which an athlete interprets a stressful event influences the level of perceived stress intensity and influences the athlete's coping responses. Cognitive appraisal, followed by the use of coping strategies, determines the quality and intensity of perceived stress and influences an athlete's selection of coping strategies (Folkman, 1992). To date, research into the area of cognitive appraisals and coping strategies has not been conducted in the sport of golf. If the coping strategies used by elite amateur and professional golfers can be identified, it may be possible to generate effective stress intervention programs for golfers of all skill levels.

Research Method

To reach an elite level in competitive golf, golfers need to perform well under stressful conditions. To determine the coping strategies they use, elite golfers were asked to explain their experiences in terms of the sources of stress, their personal stress reactions, and their coping strategies. They were asked to explain what situations they find particularly stressful, how they react to the stress, and how they cope with stressful situations.

Research Questions

The purpose of this study is to explore sources of stress, stress reactions (emotionally, cognitively, behaviorally, and physiologically), and coping strategies used by elite amateur and professional female golfers. Specifically, the research attempts to answer the following questions:

- What are the sources of stress for elite amateur and professional female golfers during a competitive round of golf?
- What are their affective, cognitive, behavioral, and physiological reactions to the stressors encountered?
- What coping strategies do elite amateur and professional female golfers use?
- What, if any, are the differences between the responses given by the professional female golfers and those given by elite amateur and professional female golfers?

Significance of the Research

Most athletes need a broad repertoire of knowledge and coping skills in order to be successful (Gould, Finch, & Jackson, 1993). Given the variety of demands that can occur within a competitive round of golf, it is inevitable that golfers, like other athletes, will sometimes find themselves in situations that overtax their coping repertoires. The results of this study should help to broaden the repertoire of effective coping strategies to the benefit of all concerned. Coaches, athletes, and sport psychologists need more information about the knowledge, skills, and attitudes that will help the athletes to cope successfully with the demands implicit in their sport.

Overview of Study

Chapter 2 provides a conceptual framework for the stress response. The stress reaction is explored and explained according to Heibert's (1983, 2000) Framework for Stress. Self-efficacy plays a large role in an individual's perception of stress and ability to cope in a stressful situation. Chapter 2 explains self-efficacy in general, along with Hiebert's (1988) Coping with Stress Model. A review of the literature follows concerning stress and competitive sport generally, and stress in competitive golf.

Chapter 3 explains the study's method of investigation, the method used to access elite female golfers, and the process used for qualitative analysis of the interviews. Chapter 4 presents the results of the qualitative investigation into sources of stress and coping methods used by elite female golfers. Chapter 5 discusses the findings, the limitations of the study, and its implications for future research, for counselling and stress control interventions, and for counselling elite golfers.

Chapter 2

Literature Review

Sport is an arena of achievement in which ability is publicly tested, scrutinized, and evaluated. In order to overcome the negative performance effects that stress can have on performance, athletes must learn to cope with the demands and pressures of competition if they are to enjoy and succeed in sports. Golf is an individual sport in which performance is publicly judged daily on the basis of one's scores. Elite golfers, who are required to play well on a consistent basis in order to maintain their rankings, must be able to handle competitive situations and pressure in order to succeed. In other words, they must be able to cope with the stress that they encounter during a competitive round of golf in order to perform well consistently.

Stress

Stress is a complex reaction that affects our physiology, behavior, thinking and emotions. It arises in situations where people believe that the demands they face are greater than their abilities to handle those demands (Hiebert, 2000, cited in Malec et al., 2000). Stress can result from environmental factors (task difficulty) and internal factors (repertoire of coping skills, perceptions, and genetic predisposition) or from an interaction between the two (Hiebert, 1983). The external environmental factors are generally termed "stressors," while a person's reaction to an external stressor is termed "stress" (Albrecht, 1979; Hiebert, 1983). Lazarus and Folkman (1984) use an outcome-neutral way to describe people's attempts to deal with the demands or stressors that they encounter. They suggest that stressors have the potential to elicit different reactions among individuals due to their subjective experience of the stressor. These different

reactions are based on individuals using two forms of cognitive appraisal: primary appraisal, which involves evaluating the threat of the situation (e.g., irrelevant, benign, threatening), and secondary appraisal, which involves evaluating one's available resources for coping with the stressful situation (e.g., seek more information, control impulsivity). Stress arises not from the demands people face per se, but from people's perceived inability to deal with those demands to their own satisfaction (Hiebert, 1983; Lazarus & Folkman, 1984). Sometimes a person's coping attempts are successful and the demand is handled satisfactorily. Other times, coping attempts are not as successful as one desires and, if the demands or stressors persist, the person begins to feel stressed.

When an individual engages in a situation, there is an initial appraisal, or in some cases a mis-appraisal, of the demand characteristics of the situation, the individual's resources for coping with the demand, and the consequences likely to result from the way in which the situation is handled. As the individual remains engaged in the situation, there is subsequent ongoing appraisal regarding the continuing nature of the demand and the adequacy of the individual's coping attempts (Lazarus & Folkman, 1984). Regardless of the accuracy of the person's appraisal of the situation and the coping resources available, a perceived inequity between demand and coping resources produces an increase in stress level (Hiebert, 2002, p. 228). For example, an athlete who makes a mental or physical error during competition may appraise the stressor as threatening to self-esteem, while another athlete experiencing the same stressor may appraise it as merely challenging. If an athlete has appraised a situation as stressful, his or her coping processes then work to manage the stress reaction. These processes influence the athlete's subsequent appraisal and, therefore, the type and intensity of the stress reaction. Studying

the relationship between perceived stress and burnout among high school basketball coaches, Kelley and Gill (1993) found that lower perceived stress and reduced burnout were correlated with greater social support and more years of coaching experience.

The Stress Reaction

Lazarus described the stress reaction as having three components: behavioral, physiological and cognitive (Lazarus, 1974). Recent work by Hiebert, as described in Malec, Hiebert, Young, Rose, Blackshaw, Felsky-Hunt, and Lea (2000), includes an emotional component to the stress reaction.

The Behavioral Stress Reaction

The behavioral component of a stress reaction can be demonstrated through random tics and tremors along with hyperactivity (Hiebert, 1983). The increase in muscle activity that accompanies stress tends to be demonstrated in more "hyper" types of behavior. According to Malec et al. (2000), individuals tend to speed up when they are stressed. Examples of "hyper" or speedy behaviors demonstrated when individuals are under stress include walking, talking and eating fast, using punctuated hand gestures when talking, turning events into competitions, and getting impatient with people who are slower (Malec et al., 2000).

The Physiological Stress Reaction

Increased heart rate, respiration rate, and muscle tension are common indicators of the physiological component of a stress reaction. Other physiological reactions demonstrated by individuals when under stress include increased sweat gland activity and increased blood pressure (Hiebert, 1983; Malec et al., 2000). People's hands get cooler when they are under stress, due to the shunting of the blood away from the extremities

and towards the large muscle groups, which is indicative of the fight or flight response. Lastly, blood in the brain is shunted away from the rational problem-solving centers of the brain towards the parts of the brain that control the muscle movement. This causes individuals to think less clearly when under stress (Malec et al., 2000).

The Cognitive Stress Reaction

The cognitive component of a stress reaction often exaggerates the degree of threat or demand involved and minimizes the individual's coping attempts (Hiebert, 1983; Lazarus, 1974). Typically, as stress levels increase, there is increasing interference with people's abilities to engage in accurate cognitive appraisal. For example, when people feel stressed, they tend to exaggerate the nature or intensity of the demands they face, catastrophize about the consequences of not responding optimally in that situation, and thus lessen their coping abilities. Excessive negative thinking and negative self-talk often accompany this unproductive thinking, a combination that tends to interfere with performance and result in less-than-optimal performance. This in turn feeds into the cycle of exaggeration and catastrophization being experienced by the individual.

The cognitive, physiological, behavioral, and emotional components of a stress reaction tend to occur simultaneously as one integrated response involving heightened arousal, inappropriate cognitive activity, and hyperactivity (Hiebert, 1983; Malec et al., 2000). According to Malec et al., one component of the stress reaction is often more exaggerated than the rest. Some people tend to notice their stress physiologically, while others may tend to notice their behavioral or cognitive reactions to stress more readily. Because we react to stress differently, Malec et al. argue that it is possible for individuals to pay attention to their stress reactions, discover which component seems to be the most

reactive, and use that as an early warning of stress. If stress is recognized early, steps can be taken to manage or control the stress reaction.

Once a person encounters a demand, reacts, and perceives the coping attempts as beginning to work, or the demand decreasing, the system returns to normal with very little harm done to the person (Hiebert, 1983). If the coping attempts are perceived as inadequate, the arousal is sustained or even increased, and overexaggerated cognitive activity occurs along with hyperactivation of the motor system. These stress responses indicate that the demand has become a stressor and that the person is experiencing stress. At this point, if the demand decreases and/or if the person's coping attempts are perceived as adequate, the stress response will begin to decrease and the system will return to normal. If the demand persists, however, and/or if the person's coping attempts are perceived to be inadequate and continue to be perceived as inadequate, a chronic stress reaction will develop. See Figure 1 for Hiebert's (1983) Framework for Stress.

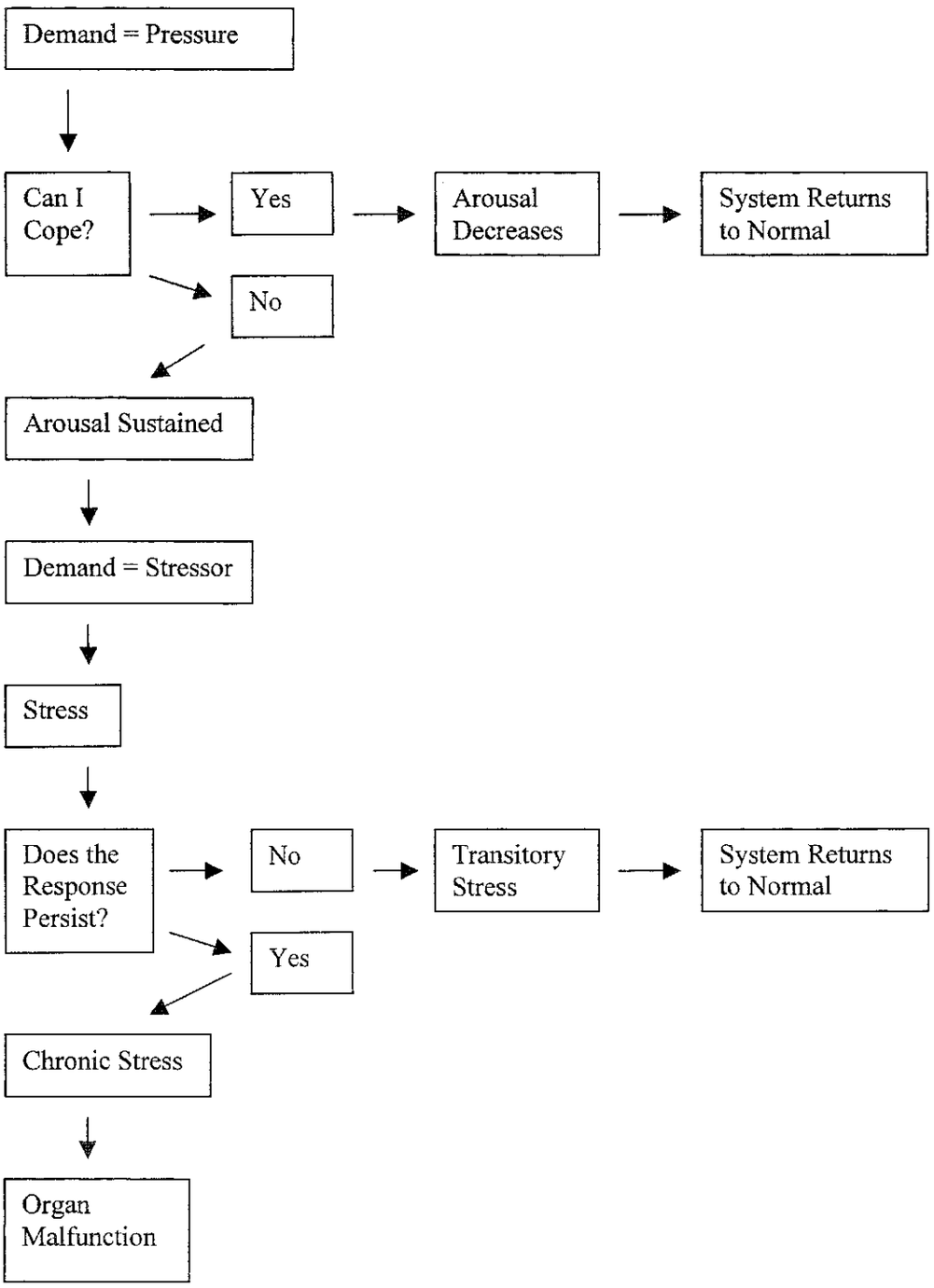

Figure 1. Hiebert's (1983) Framework for Stress

Hiebert (2000) explained the stress response as being triggered not so much by the demands individuals face but by their perception that they will not be able to handle those demands as well as they would like. According to Hiebert, individuals make judgments about the nature and intensity of the demands required of them in stressful situations. They evaluate the resources that are available to draw on in order to handle the situation. These resources include their own skills and knowledge and the people whom they could approach for assistance. At the same time, they are processing cognitively the likely consequences. If this appraisal leaves them confident that they can handle the situation to their satisfaction, their stress level will be typically quite low. When there is a perceived balance between demand and resources for coping, facilitative emotions such as excitement, motivation or enthusiasm are likely to result (Malec et al., 2000). If, however, the appraisal leaves the individuals believing that they are unable to handle the situation as well as they would like, and if unpleasant consequences are likely to result, their stress levels will be typically quite high. The intensity of the stressful reaction results from the degree of imbalance between the demand and the resources for coping, coupled with the perceived severity of the consequences (Hiebert, 2000).

Figure 2 shows Hiebert's (2000) Framework for Stress. Hiebert recognizes that mediating factors affect individuals' appraisal of a situation. One important personal factor that mediates appraisal in a competitive or threatening sporting environment is self-efficacy. If individuals are confident that they have the resources to handle a particular situation, they may view it as challenging and exciting. If they do not perceive themselves to have the resources to cope with the situation, they may perceive it as very stressful.

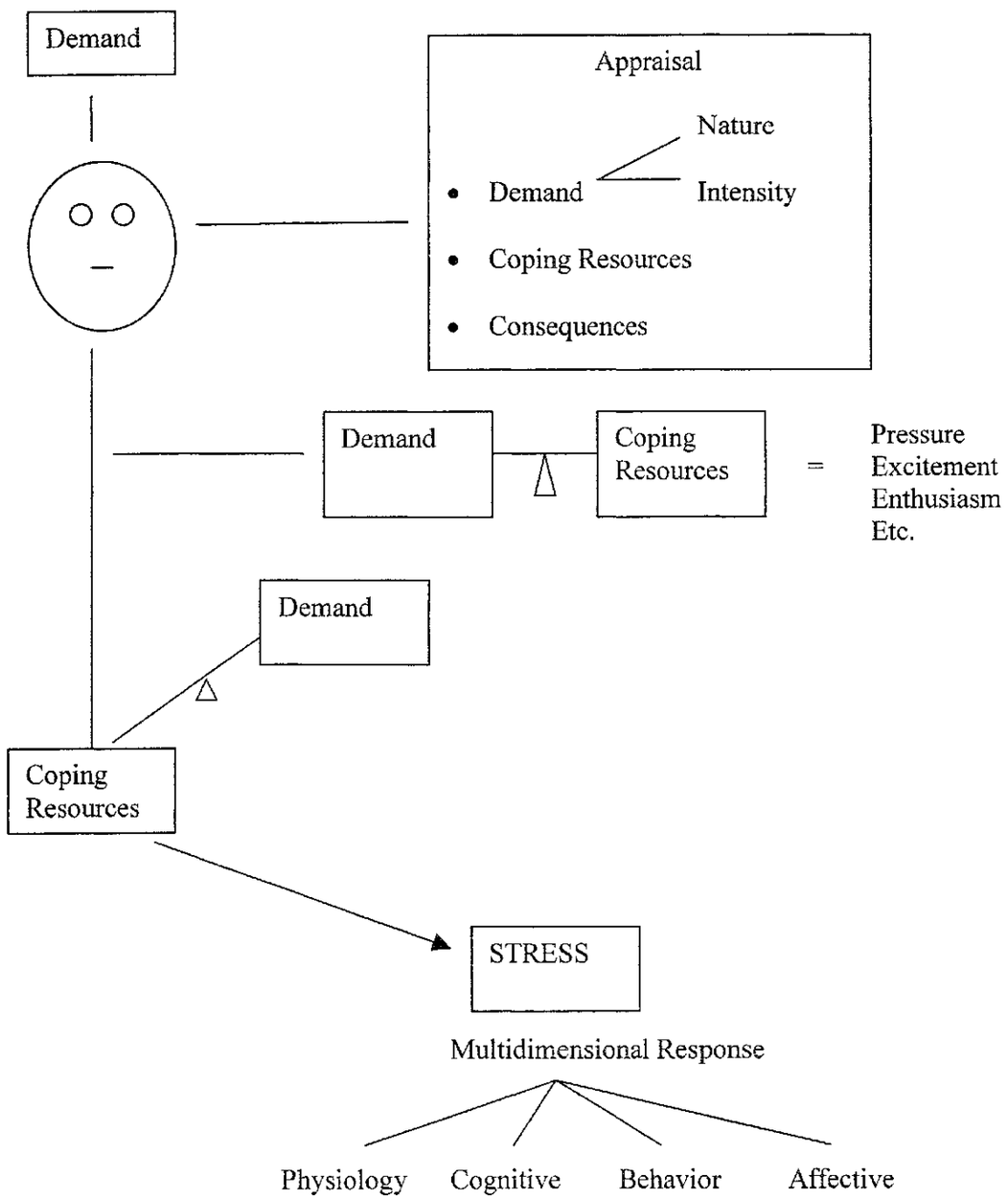

Figure 2. Hiebert's (2000) Framework for Stress

Self-Efficacy

The self-efficacy theory is based on the principal assumption that psychological procedures, whatever their form, serve as a means of creating and strengthening expectations of personal efficacy (Bandura, 1977). Bandura explained self-efficacy as "the belief in one's capabilities to organize and execute courses of action required to produce given attainments" (p. 192). Expectations of personal mastery affect both the initiation and the persistence of coping behavior. According to Bandura, people fear and tend to avoid threatening situations that they believe exceed their coping skills, yet they get involved in activities and behave with assurance when they judge themselves capable of handling situations that would otherwise be intimidating. The self-efficacy theory is not concerned with the skills of an individual, but rather with the individual's judgments concerning those skills. Self-efficacy is proposed to be a mediating variable between pervious performance accomplishments and future performance.

Bandura's theory (1977) stated that psychological procedures alter the level and strength of self-efficacy. For Bandura, expectations of self-efficacy are derived from four principal sources of information: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. Expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles. Bandura suggested that performance accomplishments are the most influential source of efficacy information, as they provide the most authentic evidence of an individual's ability to complete a task successfully.

Bandura, Adams, and Beyer (1977) tested the theory that psychological procedures could achieve changes in behavior by altering the level and strength of self-

efficacy. In their study, 33 phobics aged 18 to 50 were administered treatments based on either performance mastery experiences or vicarious experiences, or they received no treatment. The mastery-based treatment group produced higher, stronger and more generalized expectations of personal efficacy than did the treatment group relying solely upon vicarious experiences.

Multon, Brown, and Lent (1991) concluded that self-efficacy beliefs accounted for approximately 14 percent of the variance in students' academic performance. Subsequent studies have also supported links between self-efficacy and performance. Lane and Lane (2001) reported similar findings with a population of postgraduate students. Chemers, Hu, and Garcia(2001) found self-efficacy to be significantly and directly related to academic performance. Lane, Devonport, Milton, and Williams (2003) investigated the relationship between self-efficacy and dissertation performance among undergraduate students. In line with earlier studies (Chemers, 2001; Lane & Lane, 2001; Multon et al., 1991), Lane et al. (2003) found a significant self-efficacy and performance relationship. They also found that some self-efficacy factors had a stronger relationship with performance than others. Self-efficacy related to obtaining support, understanding theory, and writing skills significantly correlated with dissertation performance. Support and guidance from a supervisor, the ability to understand theory, and the ability to write the dissertation were themes positively related to the students' efficacy expectations about completing their dissertations. However, self-efficacy related to maintaining motivation, planning, and time management did not significantly correlate with performance. This study illustrated that, in designing an intervention strategy to raise

self-efficacy, the guiding principle should be that performance accomplishments should raise self-efficacy (Bandura, 1977).

Self-Efficacy Interventions

Lane et al. (2003) suggest that interventions for low efficacious students should focus on developing perceptions of success. One approach is to encourage goal setting. Setting short-term and challenging goals and monitoring performance against these goals offer a clear standard with which to compare progress. According to Lane et al., goal attainment can lead to a perception of progress; this perception strengthens self-efficacy, which in turn should motivate students to continue to improve. The second suggested approach to raising self-efficacy is support groups. Solving problems in a group rather than as individuals can enhance students' self-efficacy through observation of others performing successfully or through mastery of a task within a group.

Self-efficacy is one factor that affects individuals' perceptions of a situation. Malec et al. (2000) stated that individuals make judgments about the nature and intensity of the demands required of them in stressful situations. Individuals with high self-efficacy may perceive a stressful situation as non-threatening due to their confidence in their ability to perform or to meet the demands of the situation. Competitive athletes, including elite golfers, are constantly placed in stressful situations due to the performance nature of competition. In order to succeed, they must be able to cope with these stressful situations. A review of the general literature regarding coping with stress follows.

Coping with Stress

Stress control can be approached from two broad perspectives: one focuses on decreasing the inequity between demands and people's ability to deal with the demands,

and the other focuses on decreasing people's physiological, cognitive or behavioral reactions in situations where their capabilities are overtaxed (Hiebert, 2002).

Hiebert (1983) maintains that stress control is best approached by developing a wide range of coping skills, some aimed at dealing with the demands people face (stressor management strategies) and others aimed at helping people calm their stressful reactions (stress management strategies). According to Hiebert (2002), stressor management strategies can be used in a preventative manner. For Hiebert, people with good skills, or other resources for dealing with the demands they face, are less likely to be overtaxed and will experience less stress. Stress management strategies, however, can be used in order to reduce the intensity of a stress response in situations where individuals have exceeded their coping resources. Both stressor management strategies and stress management strategies are necessary for people to cope with the demands placed upon them (Hiebert, 2002).

Successful coping requires a set of skills and knowledge that are adequate for dealing with a variety of situations (Hiebert, 2002). In addition, people need to be able to feel that they are in control of their personal situations, rather than victims of circumstance with no feelings of control over the situation. Hiebert's (1988) Framework for Coping with Stress includes strategies for stressor management and stress management (see Figure 3).

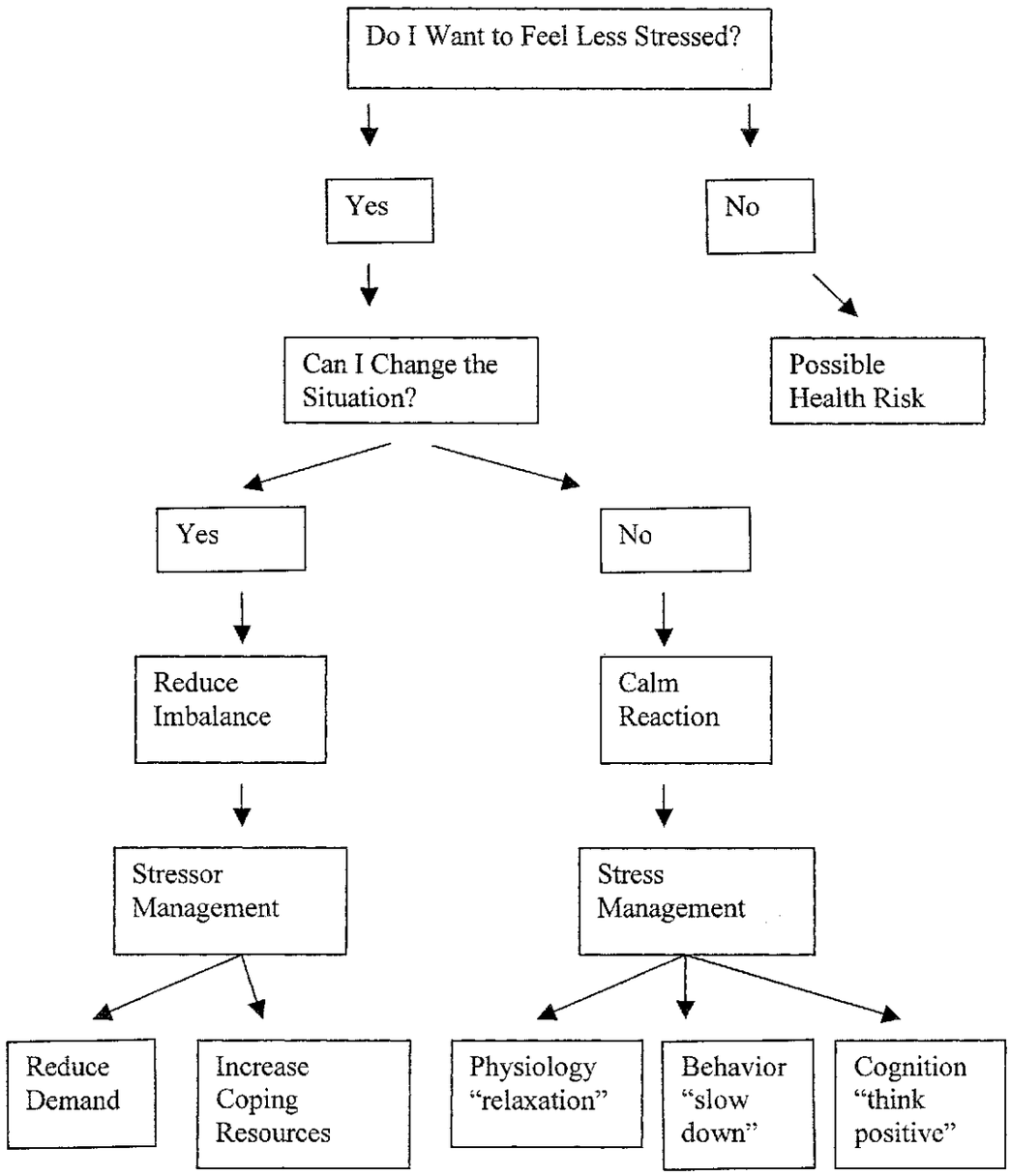

Figure 3. Hiebert's (1988) Framework for Coping with Stress

Over the past ten years, there has been an increase in interest in stress and stress control, particularly in the area of sport. In order to understand stress and stress control in athletics, it is important to review the general literature on stress and coping. Over the years, coping with stress has been defined in a number of ways. The animal-behavior perspective viewed coping as the degree of some stressor that an organism could tolerate (e.g., the animal coped with 10 volts of electric shock). This perspective of coping placed little or no emphasis on the coping process or on cognitions, and it is seldom utilized today (Gould, Finch, & Jackson, 1993).

The psychoanalytic perspective defines coping as an unconscious defense that allows the individual to manage instinct, affect and stress (Folkman & Lazarus, 1998). For example, humor can be seen as a form of coping that allows an individual to deal with stress. The psychoanalytic model also had limitations. The sole focus of this perspective was the individual and the outcome chosen, with little or no attention paid to problem solving or the choices that the individual made in order to produce the outcome (Gould, Finch, & Jackson, 1993).

The trait perspective views coping as a personality trait that allows an individual to deal with stress less or more effectively. In sport, the trait theory of coping involves the inverted-U theory of stress, in which each person has an optimal zone for peak performance (Martens, Vealey & Burton, 1990).

Today the dominant model for defining coping is the transactional perspective of stress. In this perspective, stress results from the interaction of people's physiological, cognitive, and behavioral systems and occurs when people perceive that the demands of a situation exceed their coping resources (Hiebert, 1983; Lazarus & Folkman, 1984). The

stressor or demand itself does not cause stress; rather, individuals' resources for handling the demand satisfactorily will determine the stress that they will experience within that situation. If the demand is intense but people believe they can handle the demand, they will experience little stress. If, however, people think that they cannot handle the demand, no matter how trivial it is, their stress levels may be quite high.

One advantage of the transactional view is its process orientation. The transactional perspective identifies coping as a dynamic sequence of steps involving both cognitive and behavioral efforts to manage stress. This is important because a wide range of possible responses to stress are included in this model, from situational assessments to emotion management efforts. In addition to personal factors, the transactional perspective also places considerable emphasis on understanding the situation or context in which the coping occurs. Finally, coping is not limited to successful efforts but includes all purposeful attempts to manage stress regardless of their effectiveness (Compas, 1987). Given the advantages of this approach to stress and stress management, it is a view that is commonly accepted in sport psychology (Gould, Finch, & Jackson, 1993).

Personal factors, such as one's self-efficacy, have an impact upon the perceived stress within a competitive sport situation. It is, therefore, important to understand the effect of self-efficacy on sport performance.

Stress and Sport Performance

Self-Efficacy and Sport Performance

Ericsson and Charness (1994) showed that expert performance is mediated by complex cognitive structures and skills acquired over extended periods of time. Expertise, according to Ericsson and Charness, reflects the knowledge and skills

developed through adaptation to the demands of naturally occurring situations. They also found that superior performance is often restricted to relevant tasks within the specific domain of expertise. The knowledge and skills acquired by expert performers are therefore domain specific. Clearly those seeking to improve their performance need to develop the specific skills demanded within the sport of golf.

It has been shown that self-efficacy is a strong predictor of sport performance in youth sports (Weiss, Wiese, & Klint, 1989). Weiss et al. found that youth gymnasts who had higher efficacy expectations were more successful than those with lower expectations. They also found that the efficacy of the gymnasts varied with the various competitive events. Those events where the gymnasts felt the most control over their performance (e.g., high bar) were more affected by efficacy expectations than those events where the gymnasts felt less control (e.g., vault).

Miller (1993) found that self-efficacy had a highly significant relationship with competitive performance in all levels of swimmers. When self-efficacy was high, performance was enhanced; when it was low, performance was impaired. Neither skill nor motivation had a significant effect on performance. Miller's results emphasized that self-efficacy needs to accentuated in higher-level swimmers, as its effect could be a major factor in determining performance.

Theodorakis (1996) examined the effects of goal setting, self-efficacy, ability and self-satisfaction on tennis performance. In this study, ability, goal setting, and self-efficacy were predictors of performance. In addition, goal setting was affected by level of ability as well as by perceived self-efficacy. Theodorakis concluded that self-efficacy had a direct influence on sport performance.

Lohasz and Leith (1997) found that it is important that individuals expect to be successful and believe in their ability to perform the task required in order to increase the probability of performance success. They compared the effects of self-efficacy and attentional focusing on the performance of a complex response time task performed by male varsity athletes from a number of sports. The group of athletes who had positive expectations about performing the task performed significantly better than the attentional focus group. A very important component of pre-task mental preparation appears to be a belief in one's ability to successfully perform the tasks required.

Practice has been shown to increase self-efficacy in athletes. Slobounov and Yukelson (1997) assessed self-efficacy and movement variability of Olympic-level springboard divers. They found that self-efficacy declined with an increase in difficulty of dives. As practice progressed, self-efficacy and the accuracy of self-evaluative reactions increased. As dives were practiced, no matter the degree of difficulty, self-efficacy for performing the dives improved over the course of the practice. This finding suggests that athletes' self-efficacy increases with repetitive success at practicing skills.

Gernigon and Delloye (2003) examined the influence of an unexpected outcome in a first sprint trial on athletes' self-efficacy and performance. National level sprinters assessed self-efficacy and then ran a first 60 m sprint trial with manipulated time feedback (success vs. failure). After receiving their manipulated time, they reassessed self-efficacy. It was found that success on the first trial increased the self-efficacy of the sprinters and that failure decreased their self-efficacy.

Haney and Long (1995) examined the effects of perceived control and self-efficacy on coping strategies and sport performance. Female athletes were evaluated prior

to, during, and after completing soccer, hockey or basketball shooting tasks. It was found that the greater the experience level of the athletes, the higher the perceived control and self-efficacy and the less they relied on coping strategies. The athletes who performed well in Round 1 experienced greater control and self-efficacy and performed better in Round 2. This result suggests that past experience or past success can positively impact future performance.

Schunk (1995) described the relationship between self-efficacy and motivation and performance in cognitive and sport domains. According to Schunk, people enter activities with varying levels of self-efficacy derived from prior experience, personal qualities, and social support. As they work on tasks, they acquire information about how well they are doing. This information influences their self-efficacy for continued learning and performance. Regardless of the domain (cognitive or sport), self-efficacy helps to predict motivation and performance.

Self-Efficacy and Golf Performance

Johnson (1994) examined the self-efficacy of male and female golfers at differing ability levels. There was a significant difference between the self-confidence scores of the highest handicap (lowest skill ability) group of golfers and the middle and lowest handicap groups of golfers. There was no significant difference in scores between the middle handicap (middle skill ability) and low handicap (high skill ability) groups.

Koczajowski (1997) investigated the differences between state and trait sport-confidence and physical self-efficacy of professional and amateur female golfers. The golfers completed the State Sport Confidence Inventory (Vealey, 1986), Trait Sport-Confidence Inventory (Vealey, 1986), and the Physical Self-Efficacy Scale (Ryckman,

Robbins, Thornton, & Cantrell, 1982). No significant differences were recognized between the professional and the amateur golfers on these scales.

Bond, Biddle, and Ntoumanis (2001) examined the relationship between self-efficacy and causal attribution in competitive sport. Female golfers competing in club competitions completed pre- and post-competition self-efficacy questionnaires. When golfers perceived that they had been successful, pre- and post-competition efficacy remained stable or increased. Those golfers whose efficacy had increased made more internal and stable attributions for their performance than those whose efficacy decreased.

Stress and Competitive Sport

Researchers have examined the coping processes within the competitive sport environment. In an exploratory descriptive study, Madden, Kirkby, and McDonald (1989) used the 66-item Ways of Coping Checklist (WOCC) (Lazarus & Folkman, 1984) and adapted it to sport. The resulting sport-specific instrument, the Ways of Coping With Sport (WOCS), was given to 21 elite middle-distance runners. The runners predicted how they would cope if they experienced a slump, stating that they would seek social support, increase their effort, and use problem-focused coping such as making a plan of action.

Using another sport-specific version of the WOCC, Madden, Summers, and Brown (1990) examined coping strategies used by competitive basketball players. Athletes who reported low levels of perceived competitive stress reported less frequent use of coping strategies than did athletes reporting high levels of perceived competitive stress. These results were consistent with Lazarus and Folkman's (1984) suggestions that, if perceived stress is low, the need to implement coping strategies will be low.

In these studies, athletes were asked to predict how they would cope in hypothetical situations, as opposed to how they actually did cope in a stressful situation that they had experienced. The athletes predicted that they would employ certain strategies within hypothetical situations; however, they may not in fact have used these strategies in actual stressful situations.

The existing sport psychology research in the area of coping uses the framework of approach and avoidance. (Anshel, 1996; Anshel & Wells, 2000; Anshel, Williams, & Hodge, 1997; Krohne & Hindel, 1998). Krohne (1993) suggested that most approaches to classify coping responses distinguish between those strategies that are active in nature and designed to confront the problem (seeking information, pre-planning a coping strategy) and those strategies that involve an effort to reduce tension by avoiding dealing with the problem (ignoring the stressor, seeking distractions). Using Anshel's (1996) approach and avoidance coping framework, Kronhe and Hindel (1988) found that successful elite table tennis players used avoidance coping strategies and experienced less state anxiety following performance errors than the less successful players.

Roth and Cohen (1986) found that athletes tend to use an approach strategy when (a) the situation is controllable, (b) the source of stress is known, (c) the individual has high self-confidence in the situation, and (d) the effects of the stressor are long-term (e.g., being injured because of physical abuse, or making consistent performance errors). An avoidance strategy may be more appropriate when (a) the situation is less controllable, (b) the source of stress is not known or unclear, (c) the athlete's confidence in the situation is low, and (d) the effects of the stressor are immediate (e.g., losing the ball while the game is in progress). Anshel (1996) and Anshel and Kaissidis (1997) found that

approach strategies were most common when athletes had control over the situation (when they made physical or mental errors). Avoidance coping was more likely in situations where the athletes felt they had little control (a coach's reprimand, poor weather, a "bad" call from the referee). These studies suggest that athletes use coping strategies that best meet the situational demand.

Gould, Horn, and Spreemann (1983) attempted to determine the major sources of stress in elite junior wrestlers. "Performing up to one's ability," "improving on one's last performance," "participating in championship meets," "not wrestling well," and "losing" were found to be the major sources of stress. These sources of stress seemed to be associated with fear of failure, feelings of inadequacy, and social evaluation. In 1985, Gould and Weinberg compared successful and less successful wrestlers as to the amount and the types of worry that they experienced. "Not wrestling well," "improving on my last performance," "what my coach will think or say," "losing," and "performing up to my level of ability" were the most frequently cited sources of worry by all wrestlers. Although no significant differences were found between the winners and losers on the first match of the competition, the losers of Match 2 were found to worry significantly more than the winners. These losers reported "coach evaluation," "losing," and "making mistakes" as sources of worry. The results indicated that there was a relationship between frequency of worry and athletic performance.

Gould and Petlichkoff (1988) reviewed the sources of stress and the consequences of stress on the performance of young wrestlers. Their major findings were that young wrestlers who experience heightened levels of competitive anxiety tend to have lower

self-esteem and find competition to be less fun, and that pre-match expectancies are the most stable predictors of performance.

Campen and Roberts (2001) described coping strategies used by recreational runners. All used a wide variety of coping strategies; however, female runners tended to use social strategies such as affiliating with other runners or coaches to reduce anxiety prior to the race.

Anshel and Delany (2001) examined the cognitive appraisals and coping strategies following selected sources of acute stress among youth sport participants. Using a structured interview approach, they interviewed 52 youth field hockey players. 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. Also, after experiencing most stressors, the athletes tended to make negative cognitive appraisals followed by an avoidance coping strategy. After making positive cognitive appraisals, however, the athletes tended to use approach coping strategies.

Hanin (1995) developed the Individual Zones of Optimal Fucntioning (IZOF) model to focus on the idiosyncratic emotional experiences of athletes in various performance situations. While trying to understand why and how outstanding performers consistently achieve excellence, Hanin (1999) described the importance of assessing and understanding each individual athlete's subjective experiences and their unique experiences.

Gould et al. (2002) examined the psychological characteristics of U.S. Olympic Champions. They interviewed ten successful U.S. Olympic champions in various sports in order to determine their psychological characteristics. Common psychological

characteristics of the champions included a high level of motivation and commitment, a positive or optimistic outlook, the ability to focus/concentrate, resiliency and sport intelligence (creativity and ingenuity) (Gould et al., 2002).

Stress and Competitive Golf

The impact of stress on the competitive golf game of golfers of all levels has received increased attention in popular literature. Sport psychologists and professional golfers are making contributions to popular golf magazines and writing instructional books on the topic. Examples of recent contributions aimed at helping golfers to cope with stress included articles and books by Andrisani (2002), Cohn (2000, 2002), Rotella (2003, 2001), and Woods (2002).

There have been fewer contributions to the academic literature on the same topic. McKay, Seling, Carlson, and Morris (1997) compared self-reported state anxiety (cognitive anxiety, somatic anxiety and self-confidence) measured by the Competitive State Anxiety Inventory-2 (CSAI-2) (Martens, Vealey, & Burton, 1990) and physiological responses (salivary cortisol concentration and heart rate) in elite golfers prior to, during, and upon completion of a practice round and a competitive round of golf. The golfers completed the CSAI-2 and collected saliva for cortisol analysis on four occasions: prior to tee off, after the 6^{th} hole, after the 12^{th} hole, and after the 18^{th} hole. The results indicated that the golfers' heart rates and anxiety were higher and self-confidence lower during competition than during practice. For both practice and competition, the golfers experienced the greatest anxiety prior to play, while the reported state anxiety did not change much during the rounds of golf.

Larsson, Cook, and Starrin (1988) developed a stress inoculation training program to be used by elite junior golfers. The golfers who participated in the training appraised a competitive situation as less threatening than did those who did not participate. They also reported less use of negative thinking during the competitive situation. Johnston and McCabe (1993) examined coping strategies used by undergraduate university students while they attempted to putt ten golf balls into an easy target while music and noise were played to distract the subjects. Evidence was found to support the conceptualization of stress as an appraised imbalance between perceived demand and perceived ability. These results suggest that practice can help to lower stress and enhance sport performance

Coping Strategies in Sport

Taking a different approach to studying coping strategies in sport, Scanlan, Stein and Ravizza (1991) examined the sources of stress in elite figure skaters. Twenty-six former U.S. National championship competitors were interviewed to identify their stressors during the most competitive phase of their competitive skating careers. The researchers identified five main sources of stress: negative aspects of competition, negative significant-other relationships, demands or costs of skating, personal struggles, and traumatic experiences. The results of this study demonstrated that elite figure skaters experience stress from both competition and non-competition sources.

Gould, Eklund, and Jackson (1993) examined coping strategies used by U.S. Olympic wrestlers. Using an open-ended interview technique, they questioned 20 members of the 1988 U.S. Olympic Wrestling Team regarding their efforts to cope with stress during the Seoul Olympics. Qualitative analyses revealed that the wrestlers employed a variety of coping strategies, often in combination. The coping strategies most

commonly used were these: thought-control strategies, such as positive thinking and blocking distractions; task focus strategies (concentrating on goals, narrowing of focus to task at hand); behavioral strategies (following a routine); and emotion control strategies (arousal control, visualization). Although categorized differently, these results support Hiebert's (1983) Coping with Stress Model and its physiological, behavioral, and cognitive coping strategies. The results also showed that these wrestlers were not limited to particular coping strategies to deal with a single stressor, but employed a dynamic, complex process involving a number of strategies, often in combination. The Gould, Eklund, and Jackson (1993) study had some limitations. First, athletes from only one sport were used as subjects. Given the minimal research on coping strategies in sport, coping strategies used by other groups of athletes need to be identified (Gould, Finch, & Jackson, 1993). Second, no links were drawn between the types of stressors experienced and the particular coping strategies used.

According to Gould, Finch, and Jackson (1993), an important question is whether athletes use the same types of coping strategies in all stressful situations, or whether the coping strategy employed depends on the source of stress. In an attempt to extend the literature on coping strategies used by athletes, they investigated sources of stress along with the various coping strategies used by national champion figure skaters after they won their titles until the time of the interview or until they retired. The results of Gould, Jackson, and Finch's (1993) research demonstrated that elite figure skaters experience stress from both competition and non-competition sources. Seventy-one percent of the skaters experienced more stress after winning their title than before. These skaters identified the following sources of stress: relationship issues, expectations and pressure to

perform, psychological demands, physical demands, environmental demands, and life direction concerns.

Content analysis of the interview data revealed a number of general coping dimensions reported by the skaters. They identified the following coping strategies: (a) rational thinking and self-talk (taking a rational perspective of oneself and skating), (b) positive focus and orientation (positive thinking and self-talk), (c) social support (assistance from sport/clinical psychologist, support from coach, family and friends), (d) pre-competitive mental preparation and anxiety management (mental reflections, narrow focus, physical relaxation strategies, acknowledging and dealing with nervousness), (e) training hard and smartly (taking responsibility for one's training, hard work ethic), (f) isolation and deflection (avoiding and screening the media, not focusing on troublesome things). The findings of this investigation for the first time revealed the links between the sources of stress that athletes face and the coping strategies they used in an attempt to minimize or alleviate these stressors.

The skaters in this study clearly implemented different types of coping strategies depending on the stressors they encountered. When faced with physical or psychological demands or stressors, over half of the skaters used rational thinking and self-talk, changing to healthy eating attitudes and behaviors, and pre-competitive mental preparation and anxiety management. When faced with environmental demands, however, the skaters used time management, prioritization, isolation and deflection as coping strategies. This study illustrated that, while athletes face acute stress during a performance or competition, they do not live in a sport vacuum; they exist in many roles besides "athlete." Careers, marriage, and child rearing as well as larger community

demands place heavy responsibilities and demands on their time and energy away from the sport setting. These various demands require a variety of coping strategies for successful performance.

Past research has attempted to explain the sources of stress and coping strategies used by athletes within various competitive sport situations. This information is useful to athletes, coaches, applied sport psychologists and others in developing and implementing effective stress-management programs. Chapter 3 details the research method used for the current study, the participant demographics, and the protocol followed to access the participants. Interview procedures, the method of data analysis, and ethical considerations are also explained in Chapter 3.

Chapter 3

Method

The purpose of this study is to explore the sources of stress, stress reactions (cognitive, behavioral, physiological, and emotional), and coping strategies used by elite amateur and professional female golfers. Explorative studies have been performed previously in sport (Anshel, 2001; Gould, Eklund, & Jackson, 1993; Gould, Finch & Jackson, 1993; Scanlan, Ravizza, & Stein, 1989). However, little is known about the sources of stress and coping strategies used by elite amateur and professional female golfers. Because of the lack of information about this group and the explorative nature of the study, qualitative assessment procedures have been used to obtain detailed information from the participants.

Qualitative research is inductive in nature, and no a-priori hypotheses are made. Rather, variables and processes gradually emerge as the analysis proceeds. For this reason, qualitative research can be discovery oriented and particularly useful when little is known about a phenomenon (Crocker et al., 1998). As Anshel et al. (2001) stated, "Qualitative research is needed to tap the antecedents underlying psycho-behavioral processes that explain and predict the interactive effects of appraisal and coping with stressful episode in sport" (p. 140). To date, no study has attempted to discover the sources of stress, stress reactions and coping strategies used by elite amateur and professional female golfers.

All good scientific research, quantitative or qualitative, attempts to minimize personal bias. One argument against qualitative research is that qualitative methods lack rigor and are therefore open to personal bias. Patton (1990) recommends the use of

guided interview procedures to help minimize interviewer bias and to ensure that all participants are asked identical questions in the same order. This procedure has been used previously in qualitative studies in sport psychology (Anshel, 2001; Gould, Eklund, & Jackson, 1993; Gould, Finch & Jackson, 1993; Scanlan, Ravizza, & Stein, 1989). This study used a guided interview procedure consisting of both open-ended and structured questions. The interviewer used probes, prompts, and open questions in order to clarify meaning or to allow subjects to explain fully their sources of stress and stress reactions.

This study uses Grounded Theory, which allows the researcher to focus on golfers' individual experiences. Grounded theory begins with a research situation within which it is the researcher's task is to understand what is happening (Dick, 2000). Grounded theory is emergent. It does not test a hypothesis but sets out to "discover the theory implicit in the data" (Dick, 2000, p. 5).

Judgments about the rigor of research are often based on criteria that make sense only for the methodology for which they were developed. Grounded theory has its own sources of rigor (Dick, 2000). Grounded theory is responsive to the situation in which the research is done, involves a continuing search for evidence that might disconfirm the emerging theory, and is driven by the data in such a way that the final shape of the theory is likely to provide a good fit to the situation (Dick, 2000). Glaser (1998) suggests two main criteria for judging the adequacy of the emerging theory: that it fits the situation and that it works. In other words, it is important that grounded theory helps individuals in the situation to make sense of their experience and to manage their situation better.

Grounded theory gathers data from a variety of sources, such as interviews, case studies, or observation. It seeks to develop theory that is grounded in data that are

systematically gathered and analyzed (Glaser & Strauss, 1967). The current study used interviews as the data source (see Appendix A for interview questions). General interview data was initially subjected to constant comparison during the interviews. Following each interview, the researcher identified common themes being mentioned by the golfers regarding their sources of stress, their reactions to those stressors, and their coping strategies.

The interviews were then transcribed, and the transcripts of the interviews were subjected to a constant comparison method of data analysis. While transcribing the first interview, the researcher was asking many questions: "What is going on for this golfer?" "What does she find stressful?" "Why?" and "How does this golfer manage that situation?" The researcher developed categories while listening to the responses given in the first interview. The second interview was coded with the first interview in mind, the third interview was coded with the first two interviews in mind, and so on.

Constant comparison involved initially comparing data set to data set (e.g., one golfer's responses to another's) and later comparing data set to theory (Dick, 2000). Through the constant comparison process, common categories emerge within the data that can be connected to other categories that are simultaneously emerging. When one category is mentioned with high frequency and is well connected to other categories, it is adopted as a core category (Dick, 2000). During review of the interview transcripts, core categories were developed for sources of stress, stress reactions, and coping mechanisms. In effect, each category represented a theme drawn from the information given by the golfers.

The guided interview questions posed in the study attempted to discover the sources of stress, stress reactions, and coping strategies used by elite female golfers. The questions were modeled after those used in earlier sport psychology research (Anshel, 2001; Gould, Eklund, & Jackson, 1993; Gould, Finch & Jackson, 1993; Scanlan, Ravizza, & Stein, 1989). Hiebert's (2000) Framework for Stress was used as the conceptual framework for the questions (see Figure 2). To ensure that the golfers acknowledged each component of stress according to Hiebert's model, they were questioned about each component of stress separately (cognitive, physiological, behavioral, and emotional).

The researcher began each interview by asking some introductory questions in order to gain an understanding of what elite golfers considered "stressful situations." The golfers were asked to think about a competitive round during the current season that they found particularly stressful. They were asked to rank the stressful event(s) on a scale from 1 (least stressful) to 10 (most stressful), and to describe any stressful event(s) that they would rank as 8, 9, or 10. The golfers were asked to describe when in the season this stressful event had occurred. They were also asked to describe their mood and how prepared they had felt going in to this particular event.

The next section of the guided interview was divided into four sub-sections. These sub-sections were included in the guided interview in order to elicit the golfers' reactions to the stressors in relation to Hiebert's (2000) Framework for Stress.

The golfers were first asked to describe the emotions they experienced as a result of the stressful event (affective response). Next, they were asked to describe their immediate thoughts as soon as they experienced the stressor (cognitive response). In

order to assess the golfers' physiological response(s) to the stressor, they were asked to describe how their bodies reacted as soon as they experienced the stressor. Lastly, in order to obtain information about their behavioral response(s) to the stressor, they were asked to explain what they did or what actions they took when they experienced the stressor. The researcher used probes, prompts and open questions throughout each interview in order to obtain more detailed information or, where necessary, to clarify the golfers' responses. The probes, prompts and open questions encouraged the golfers to expand their descriptions of stressful situations and coping strategies, increasing the likelihood that the data would come from the golfers' experience, not from the interview questions.

The researcher interviewed the golfers during their competitive season, scheduling the interviews to take place during a competitive golf tournament. One limitation that has been recognized in the earlier sport stress research (Gould, Eklund, & Jackson, 1993; Gould, Finch & Jackson, 1993; Scanlan, Ravizza, & Stein, 1989) was the time lag between the stressful event and the interview. In an attempt to increase the accuracy of each golfer's memory of a stressful event during a competitive tournament, the researcher scheduled the interviews during a competitive situation. To explain the scheduling of the interviews, following is a brief description of the structure of a typical competitive golf tournament.

Structure of Competitive Golf

Competitive golf tournaments for players at an elite level, such as the professional and the elite amateur golfers participating in this study, consist of four rounds of golf. Each round consists of 18 holes, and one round is played per day. After the first two days

of the competition, approximately half of the competitive field is eliminated from the tournament. The low-70 scores (and ties) of 156 original competitors qualify them for the final two rounds of the tournament; this is known as "making the cut."

Participants

The participants in this investigation consisted of four members of the Canadian Ladies Amateur Golf Association and four members of the Ladies Professional Golf Association. The elite amateur golfers ranged in age from 18 years to 45 years old. Three of the four elite amateurs have been attending either college or university in the United States and practicing and competing within the U.S. college/university athletic system during the school year. The fourth elite amateur has been a member of the Canadian Ladies Amateur Golf Team for 14 years.

Three of the professional golfers who agreed to participate in the study were Canadian citizens. One of the players was British and one American. The professionals ranged in age from 28 to 40. It was imperative to the researcher that the LPGA players had demonstrated longevity and competency in their professional careers, in order to ensure that there were differences between the two groups of subjects in terms of competitive experience and presumed skill level.

The professionals ranged in years of eligibility on the LPGA from four years to fifteen years. All of the professionals who participated in this study had won or placed within the top 3 in at least one tournament during their LPGA careers. One of the participants was ranked in the top 10 of the LPGA standings during the 2003 season. One had been ranked within the top 30 during her career but was ranked in the 150's during

the 2003 competitive season. The other two professionals were ranked within the top 50 LPGA players during the 2003 season.

Gaining Access to Professional Participants

In order to gain access to the professional golfers, the researcher made an initial contact with one member of the LPGA. This golfer agreed to participate in the study and further agreed to provide other names and contact information of LPGA members who might be interested in participating. From the list provided, twenty LPGA golfers were contacted by e-mail and asked to participate in the study during one of the major tournament stops in the 2003/2004 season. Of these, five LPGA members indicated willingness to participate at this particular tournament.

Interview questions and consent forms were e-mailed to the five willing participants. The consent form (see Appendix B) explained the general purpose of the study and informed the potential participants that they could withdraw from the study at any time. After the consent forms were signed and returned to the researcher, each golfer was contacted in order to schedule interview times.

Gaining Access to Elite Amateur Participants

The Canadian Ladies Golf Association (CLGA) maintains a ranking of elite Canadian amateur golfers. Player rankings are determined by performances at selected National golf tournaments and posted on the website of the CLGA. For the purpose of this study, the top ten ranked female Canadian amateur golfers were contacted by phone and e-mail and invited to participate in the study. All ten of the amateurs agreed to participate in the interviews and were e-mailed the interview questions and consent

forms. Upon receipt of the completed consent forms, an interview schedule was agreed upon to occur during an up-coming National event.

Interviews with Professional Golfers

In an attempt to gain accurate and immediate information regarding sources of stress and stress responses, interviews with the professionals were scheduled to take place following the competitive rounds on the Saturday and Sunday of the tournament. Because a smaller number of golfers compete on these days, all tee off in the morning. It was therefore more convenient for the professionals to schedule an interview during their shorter competitive days.

One golfer who had agreed to participate in the study did not "make the cut" after Friday's round and left the tournament site prior to the scheduled interview time. The remaining four LPGA golfers "made the cut" and were available for their interviews throughout the weekend. Two of the golfers were interviewed following Saturday's round and two others following Sunday's final round of competitive golf. The professional golfers were interviewed in a private room of the clubhouse at the tournament site. At the beginning of the interviews, which were conducted privately and individually, the athletes were reminded that all of the interview content would be strictly confidential, and that they would not be identified within the reporting of the findings. In addition, the golfers were reminded that only the researcher and her advisor would have access to the responses given, and that all of the information given would be used for research purposes only.

The interview times had been pre-arranged to occur following the rounds of golf on Saturday and Sunday. A rain/storm delay occurred during Saturday's round of golf,

and all of the golfers completed their rounds later than scheduled. The golfers had conflicting arrangements due to time constraints placed upon them, and therefore their interviews were "rushed" by the researcher and the participants. The interviews that took place after Saturday's competitive round were approximately 45 minutes in length. The interviews that took place on Sunday, with no time constraints, each lasted approximately 60 and 90 minutes.

The researcher interviewed each athlete, using a tape recorder to record each session. The athletes were questioned about their thoughts and actions leading up to, and during, a competitive tournament. They were asked what events they perceived as the most intense or the most stressful during the tournament. The Interview Guide is presented in Appendix A. The questions were modeled on those used by Anshel (1996); Anshel and Delaney, (2001); Gould, Eklund and Jackson (1993); and Gould, Finch and Jackson (1993).

Interviews with Elite Amateur Golfers

Due to inclement weather conditions and the resulting cancellation of air travel to the tournament site, the researcher was unable to attend the tournament for which all of the interviews were scheduled. Following the tournament, each of the elite amateur golfers was contacted by e-mail in an attempt to reorganize interviews by telephone. The researcher began the interviews with the first available golfers out of the top 10 eligible participants. Over a two-day period, four of the top ten elite amateurs were interviewed by telephone. The telephone interviews were tape recorded and varied in length from 60 to 90 minutes. Each of the amateurs was informed that the telephone conversation was being recorded. As with the professionals, all of the amateurs were reminded that the

interview content would be strictly confidential, and that they would not be identified within the reporting of the findings. The golfers were also reminded that only the researcher and her advisor would have access to the responses given, and that all of the information given would be used for research purposes only.

Data Saturation

When a researcher is collecting and interpreting data about a particular topic, in time a point of diminishing returns is reached (Dick, 2000). When additional interviews add nothing new to what has already been learned about a category (the data has been saturated), coding for that category ceases (Dick, 2000).

The four professional golfers were interviewed initially over a two-day period. Cursory constant comparison analysis occurred after each of the interviews with the professionals. A similar process occurred after each interview with the amateurs. No new data was presented after the second amateur was interviewed, and a total of six interviews had taken place. Two more amateurs were interviewed as a reliability check and to provide a balanced number between the professionals and the amateurs. No new data emerged after either the third or the fourth interviews of the amateurs, and the interviews were concluded after the fourth interview.

Data Analysis

As stated earlier, it is imperative that qualitative research is performed with rigor. Consistency in methods of analysis is necessary in order to minimize the personal biases of the researcher. The researcher followed Grounded Theory procedures set out in prior research involving high performance athletes and qualitative data (Scanlan, Ravizza, & Stein, 1989; Gould, Finch, & Jackson, 1993). Grounded Theory demands a constant

comparison method in order to allow themes to develop as they emerge. The interviews of the four professionals took place over a two-day period; the telephone interviews of the amateurs took place over a two-day period approximately three weeks following. After each interview the researcher was able to note common themes being mentioned by the golfers regarding their sources of stress, their reactions to those stressors, and their coping strategies. Once all of the interviews had taken place, they were transcribed verbatim. The transcripts were then e-mailed to each of the participants as a validity check for their verification of the interview content.

When a completed validity check had been received from each participant, the transcripts of the interviews were subjected to a constant comparison method of data analysis. According to Crocker et al. (1998), qualitative data may be affected by the perceptions and biases of the investigator. In an attempt to minimize these biases, the investigator read and reread the interview data in an attempt to understand the data and to allow the themes to develop as they became evident.

While transcribing the first interview, the researcher began developing categories of answers to each of the questions asked of the golfers. The transcript was divided into six sections, which paralleled the sequence of the interview questions:

1. Sources of stress for elite golfers
2. Emotional reaction(s) to the stressor(s)
3. Physiological reaction(s) to the stressor(s)
4. Behavioral reaction(s) to the stressor (s)
5. Cognitive reaction(s) to the stressor(s)
6. Coping strategies used

Categories were developed as the researcher listened to the responses given in the first interview. The second interview was coded with the first interview in mind, the third interview was coded with the first two interviews in mind, and so on. Constant comparison involved initial comparison of responses within each section and then between the responses given by the professionals and amateurs. Emerging concepts were noted. Core categories were developed for sources of stress, stress reactions, and coping mechanisms for both the professional golfers and the amateur golfers. Each category represented a theme drawn from the information provided. Upon review of the raw data themes within each coping subsection, the investigator reviewed the original transcripts and verified that all themes were represented. The themes and core categories that emerged were diagrammed into the following theoretical models:

1. Model of Sources of Stress for Elite Amateur Golfers (see Figure 4)
2. Model of Sources of Stress for Professional Golfers (see Figure 5)
3. Model of Stress Reactions of Elite Amateur Golfers (see Figure 6)
4. Model of Stress Reactions of Professional Golfers (see Figure 7)
5. Stressor Management Strategies of Elite Amateur Golfers (see Figure 8)
6. Stressor Management Strategies of Professional Golfers (see Figure 9)

Researcher Integrity

To ensure the validity and reliability of the research, it was important that the researcher be aware of personal interviewer biases before data analysis. Bracketing or describing any biases prior to analysis of the data accomplished this. The personal biases of the researcher included the following:

1. Personal experiences within the competitive sport environment that the researcher found stressful. The researcher is a former competitive athlete who found certain stressors particularly difficult to cope with. Past personal experiences that affected the researcher were noted in an attempt to minimize the researcher's reactions to comments made by the interview subjects.
2. The researcher's personal ideas or hypotheses surrounding the outcome of the study. The researcher's personal opinions resulting from past research were monitored.

During the data analysis, the researcher questioned her biases following the development of each new theme or category. For example, the researcher's personal hypothesis was that the professional golfers would find fewer competitive situations stressful than the elite amateurs. When coding the data, the researcher had to be aware that new and different categories were emerging for the professionals that hadn't been mentioned by the elite amateurs. Grounded theory demands a constant comparison method of analysis that was used to compare the themes as they emerged.

Maintenance of Confidentiality

The interviews with the professional golfers took place in a private room in the clubhouse at the tournament site. The interviews with the amateur golfers took place by telephone while the golfers were in their own homes. The researcher has protected each participant by ensuring that the tournament sites have not been mentioned and that any other information, such as names, telephone numbers and e-mail addresses, has been removed from the interview transcripts. The interview transcripts and the identifying information are being kept in separate locations. The key listing the identities of the

participants will be kept separate from the data in a file accessible only by the researcher. The data will be kept no longer than five years upon completion of the thesis defense, and the original tape recordings of the interviews will be burned upon completion of the thesis defense. The results of the study will be made available to any of the participants upon request.

The results of the data analysis are reported in Chapter 4, including descriptions of the core themes for sources of stress, stress responses, and coping strategies used by the professional and elite amateur golfers. The core themes that emerged during analysis are explained for each component, along with descriptions of the sub-themes that emerged and their components.

Chapter 4

Results

This study investigated the sources of stress, responses to stress, and coping strategies used by elite amateur and professional female golfers. Specifically, the research explored the following primary questions:

1. What are the sources of stress for elite amateur and professional female golfers during a competitive round of golf?
2. What are their affective, cognitive, behavioral, and physiological reactions to the stressors encountered?
3. What coping strategies are used by elite amateur and professional female golfers?
4. What, if any, are the differences between the responses given by professional female golfers and those given by elite amateur female golfers?

After analysis of the interview transcripts, core themes emerged for each of these questions. Sub-themes (first-order and second-order themes) were developed where necessary within each core theme in order to clarify or explain the core themes that had emerged. The golfers' responses will be explained globally as to the sources of stress, stress reactions, and coping strategies used by the elite amateur and professional golfers. Finally, differences will be noted in the themes that emerged from the professional golfers' and the elite amateurs' responses. Although the two groups of golfers are similar in terms of skill level and ability, their perceptions of what they found stressful during a competitive round of golf varied, as did the timing of the stress.

Timing of Stress

The golfers varied in their descriptions of the time during their competitive season when they had competitive rounds that they described as very stressful. There was no common pattern or theme for the golfers as to the particular point during the season when they described feeling stressed. The golfers also varied in the types of situations that they described as stressful. One professional golfer mentioned that playing well had caused her stress. She had been playing well for a few weeks and was in contention for the first time going into the final round. Never having been in position to win a professional tournament, she felt overwhelmed. Other professionals mentioned feeling stress after playing poorly for a few weeks and "missing the cut" a few tournaments in a row.

Performance at the Canadian Amateur Championship is used for National Team selection. Two amateur golfers pinpointed the Canadian Amateur Championship as the tournament at which they had felt the most stress. Clearly the importance placed on the outcome at an event can affect the severity of stress felt by athletes. Some of the golfers felt pressure or stress at the beginning of the season, others at the end of the season, and others in mid season. These results confirm that stress is an individual reaction to situations. The golfers are stressed by common situations, but they are not all stressed about the same things or at the same times.

Feelings Entering a Tournament

The golfers gave idiosyncratic responses about how they felt entering a tournament. Some mentioned that they felt as if they were not prepared and therefore they did not feel confident. One noted feeling nervous because she hadn't played many competitive tournaments due to an injury:

> I had been injured and the doctors would not allow me to hit balls, so I only played in a few tournaments throughout the season in order to rest my shoulder. I felt very nervous because I couldn't hit balls during the week prior to the tournament in order to save my shoulder for the tournament. It was nerve-wracking because I thought I would have no control over my drives. I was sure that I would be hitting them all over the place.

Some of the golfers stated that they did not feel prepared or confident going into the tournament because of their performance in previous tournaments and their demanding schedules. One stated:

> I think that if I had played well the week prior, my confidence would have been better. I know that I have the skills, but I hadn't been played well the week before and I didn't trust myself to hit the shots I know I can hit. I wasn't confident going in, and it showed.

Other comments included the following:

> I felt prepared but stressed because I hadn't been placing well.
>
> I was tired physically and emotionally.
>
> I was unhappy with my golf and was questioning whether or not I wanted to do this anymore.

Some of the golfers stated that they felt very positive going into the tournament. As they entered it, they expected to play well or to win. One explained:

> I had worked so hard at the beginning of the year, and I came to the first tournament and missed the cut, but I played well. At the next tournament I did not play quite as well and I missed the cut again, but I did not play well and so I

thought, "Oh well, whatever." And then I had a really good week in practice, I came to this tournament, and things went really well all week. I was ready. Then I had what was probably the worst round of golf I have ever played and it, like, freaked me out. I had a major anxiety attack on the first day of the tournament.

The professional and amateur golfers also made these comments:

I went in thinking that I was going to try to win it.

I was prepared.

I had a great week of practice. I felt fine.

I was confident. I did not have anything to worry about."

These mixed responses demonstrate the individual nature of stress. They also demonstrate the complexity of the stress reaction due to the variety of contributing factors that affected the golfers' perceptions of feeling stressed.

Sources of Stress

The golfers were asked to describe a competitive situation during the current season that had been particularly stressful for them. After analysis of the transcripts, two core themes emerged as to the sources of stress for both elite amateur and professional female golfers: "tournament-related sources of stress" and "external sources of stress."

The second-order theme of "performance stress," with attendant first-order themes of "being in contention," "trying to make a cut or qualify" and "thinking about outcome/results," related to the core theme of "tournament-related sources of stress." The second-order theme of "social expectations," with first-order themes of "living up to expectations" and "lack of social support," were related to the core theme of "external

sources of stress." Table 1 indicates the sources of stress mentioned by both the elite amateur golfers and the professional female golfers.

Table 1. Sources of Stress for Elite Amateur and Professional Female Golfers: Core Themes and Sub-Themes

Core Themes	Second-Order Themes	First-Order Themes
Tournament-related sources of stress	• performance stress	• being in contention • trying to make cut/qualify • thinking about outcome/results
External sources of stress	• social expectations	• living up to expectations • lack of social support

Figure 4 models the first-order and second-order sources of stress for the elite amateur golfers.

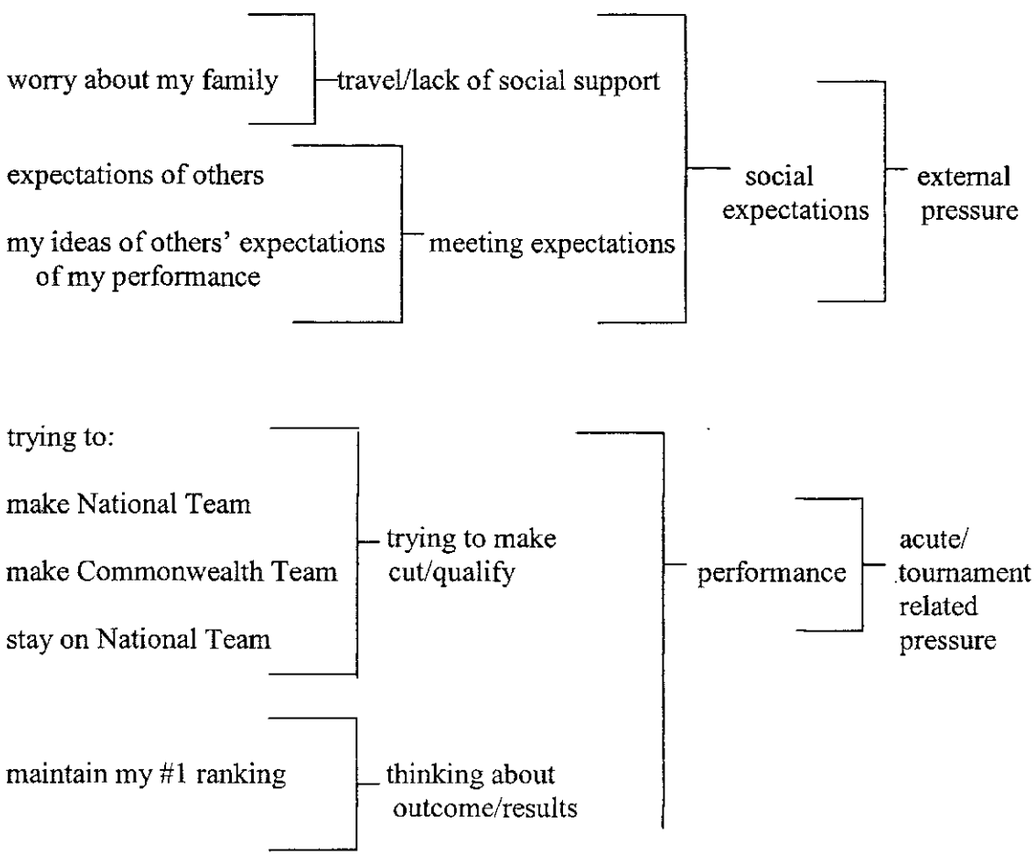

Figure 4. Model of Sources of Stress for Elite Amateur Golfers

Figure 5 models the first-order and second-order sources of stress reported by the professional female golfers.

Figure 5. Model of Sources of Stress for Professional Golfers

The elite golfers recognized performance-related stress on the golf course along with non-performance stress stemming from social situations in their lives away from the golf course. Their responses are categorized according to subject: comments relating to events that happened as a result of their play in the tournament (tournament-related stress) and comments related to events occurring in their lives outside or away from their play (external sources of stress). The term "acute/tournament-related stress" was used to categorize all comments made that related to the golfers' performance, or outcome due to their performance, during a tournament. The term "external stress" was used to categorize comments made by the golfers describing stressors from their outside lives that affected their golf performance.

Both the "external stress" category of responses and the "acute/tournament-related stress" categories of responses were further categorized into second-order themes.

Acute/Tournament-Related Stress

The open nature of competitive golf makes it a very unpredictable game. Golfers can prepare for a tournament and practice all of their necessary shots beforehand, yet unforeseen circumstances are inevitable with each tournament. Weather conditions, course conditions, pin and tee placements, playing partners, and luck are just some of the factors that change with each round of golf and over which the player has no control. All of the golfers commented on sources of stress that are a direct result of playing in the tournament. Tournament-related stress was sub-categorized into three first-order themes: "being in contention," "thinking about the outcome/results," and "trying to make the cut or qualify."

Being in contention. Being in contention was a source of stress for only one of the golfers in this investigation. She described the stress she felt while being in the lead:

> I'd had a lot of good finishes the year before, but I had not been in the lead before after the third round. It was stressful. I didn't play well on the fourth day, and I think a lot of that was related to the nerves of trying to hold on to the top spot. Later in the season I was in the same situation and played a lot better.

Thinking about outcome/results. Thinking about the outcome or results (final score or final placement) was a common source of stress for many of the golfers. The investigator classified as outcome/result-oriented stress all the golfers' comments that related to how their play would affect either their overall score or placement in the tournament, or their placement/ranking by the end of the season. One professional golfer made this comment:

> I've been playing poorly this year and so my stress level is quite high. I went into that tournament with a goal of placing very high. Instead of thinking about what I was doing (my swing), I was thinking about what was happening (where I was on the scoreboard). I got thinking way ahead of myself, into the future about how to play holes on the back 9 to make up shots, instead of focusing on the shot at hand. I was thinking futuristic as opposed to one shot at a time.

This category included other comments:

> I was thinking about my final placement.
>
> I was thinking way ahead of myself, how my poor play was affecting my pay cheque.

Trying to make the cut or qualify. Trying to make the qualifying cut after the first two days of a tournament was a source of stress for many of the golfers. Two of the professional golfers who mentioned trying to make the cut or qualify as a source of stress had not been playing well prior to the stressful event that they were describing. One mentioned that she hadn't been playing well for the entire season, and the other that she had not performed as well in the past few years as she had earlier in her career. Because of their poor performance prior to the tournament, these golfers felt the pressure to play well enough to maintain their status on the LPGA. One commented:

> I really wanted to make it, and I was trying to grind it in. I was very stressed out coming in, and then after the second round I just broke down crying. I was feeling stressed because I was one shot out of qualifying, and out of 50 girls, being 3rd doesn't work. You have to be in the top two. It's kind of like, you could be 3rd or you could be 50th, it doesn't matter. You're still not in.

The other two professionals, who had not been struggling with their performance and were not concerned about their placement on the order of merit, did not mention making the cut or qualifying as a source of tournament-related stress.

All of the amateur golfers described trying to make the cut or qualify for a tournament as a source of stress. The elite amateurs mentioned "trying to make the National team," "trying to make the Commonwealth team," and "maintaining my position on the National team."

External Stress

Elite athletes experience demands to balance their time between family, work, sport, and social commitments. Professional golfers, who travel for many months of the

year, have particular family pressures due to the amount of time they spend away from home. Elite amateur and professional golfers are also publicly scrutinized on a weekly basis as to their score or placement in a tournament. Their status amongst their peers, the fans, and the sponsors is often dependent upon their performance in recent weeks. These social expectations were divided into two categories: "lack of social support" and "meeting expectations."

Lack of social support. Most of the golfers mentioned the stresses related to being away from family/social networks. These included traveling for extended periods of time and missing their families. One of the elite amateurs discussed worrying about her children while she was away from them, as a source of stress. A few of the professionals mentioned being away from their families and husbands for extended periods of time. One gave this example of the lack of social support felt by professional golfers:

> When you're on the road, you are the only person that you have. Golf is a very individual game, and on tour we are competing against our friends, week in and week out. I would count 30 to 40 friends on tour that I would call my friends, but I have one or two that I would trust with the deepest thoughts in my head. Because we compete against one another. She may be your best friend, but you want to beat her. And she wants to beat you.

Social expectations. Many of the golfers described meeting their own expectations and trying to meet the expectations of others as sources of great stress. One of the elite amateurs mentioned her projected ideas about others' expectations of her performance:

> My own ideas about what I believe others are thinking of me cause me distress. I have been ranked No. 1 at different times throughout my career. When I play poorly, I think everyone is assuming I'm washed up now. I also think that everyone wants to try to beat me, and so I feel pressure to play well in every match, in important tournaments and in league games in my home club.

One of the professionals described stress she feels regarding social expectations:

> I know that this is just a game. But this game is how I have made a very good living. I often feel very selfish for leaving home in order to play my game. When I leave, I want to do my very best in order to help justify my long absences from home. When I play well and make a good cheque at the end, I feel as if I can justify my long absences. Then my sponsors are happy too. When I don't play well and yet am gone for extended periods of time, I feel more guilt and I worry about my sponsorships. So I feel that I have pressure to prove to myself that I should still be doing this.

Stress Reactions

After the golfers described their sources of stress, they were asked to describe how they reacted to those particular stressors. They were asked to describe their reactions to each stressful situation behaviorally (what did they do?), physiologically (how did their bodies react?), cognitively (what were they thinking?) and affectively (what they were feeling). Sub-categories emerged during analysis of their responses about how they reacted.

The core themes for both groups were described according to the four components of stress. The core theme of "behavioral reactions" was related to a second-order theme

of "loss of physical control," with related first-order themes of "loss of muscular control," "loss of swing control," and "increased tempo/rhythm." The second-order theme of "increased arousal," with attending first-order themes of "increased arousal" and "increased muscle tension" were related to the core theme of "physiological reactions."

The core theme of "cognitive reactions" was related to the second-order themes of "worry" and "negative thinking." "Worry" was related to the first-order themes of "worry about performance" and "worry about outcome." "Negative thinking" was related to the first-order theme of "negative thinking." The second-order theme of "increased emotional arousal," accompanied by the first-order themes of "down/depressed," "irritable/angry" and "anxious" were related to the core theme of "emotional reactions."

These second-order themes will be further clarified through the discussion of the first-order themes and the raw data that was provided in the interviews. The core themes and sub-themes of stress reactions experienced by both the elite amateur and the professional golfers are presented in Table 2.

Table 2. Stress Reactions for Elite Amateur and Professional Female Golfers: Core Themes and Sub-Themes

Core Themes	Second-Order Themes	First-Order Themes
Behavioral	• loss of control	• loss of feeling/muscular control
		• loss of swing control
		• increased tempo/rhythm
Physiological	• increased arousal	• increased muscle tension
Cognitive	• worry	• worry about outcome
		• worry about performance
	• negative thinking	• negative thinking
Affective	• increased affect	• down/depressed
		• irritable/angry
		• anxious
		• ashamed

The core themes and sub-themes of stress reactions for the elite amateur golfers are represented in Figure 6, and those for the professional golfers in Figure 7.

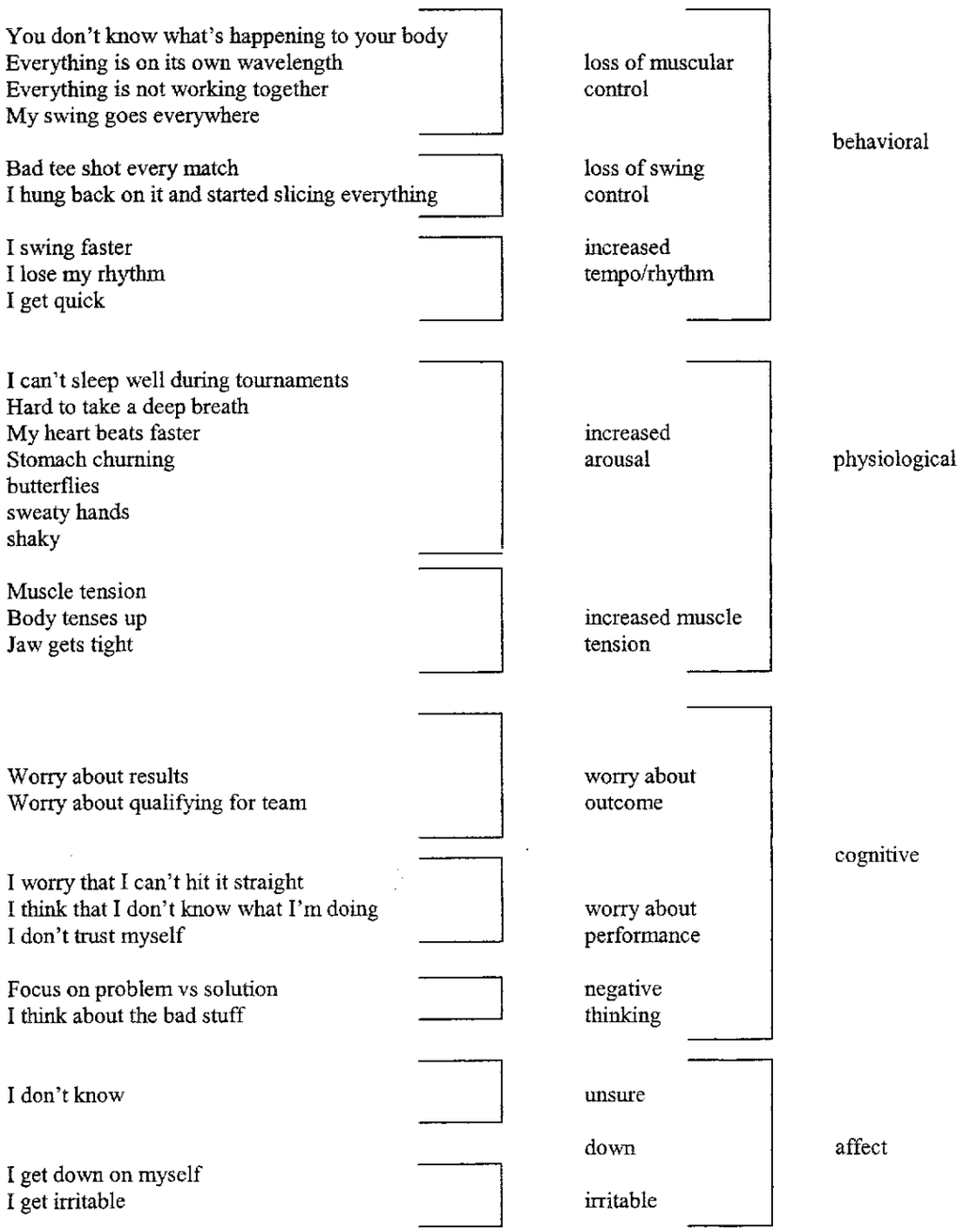

Figure 6. Model of Stress Reactions of Elite Amateur Golfers

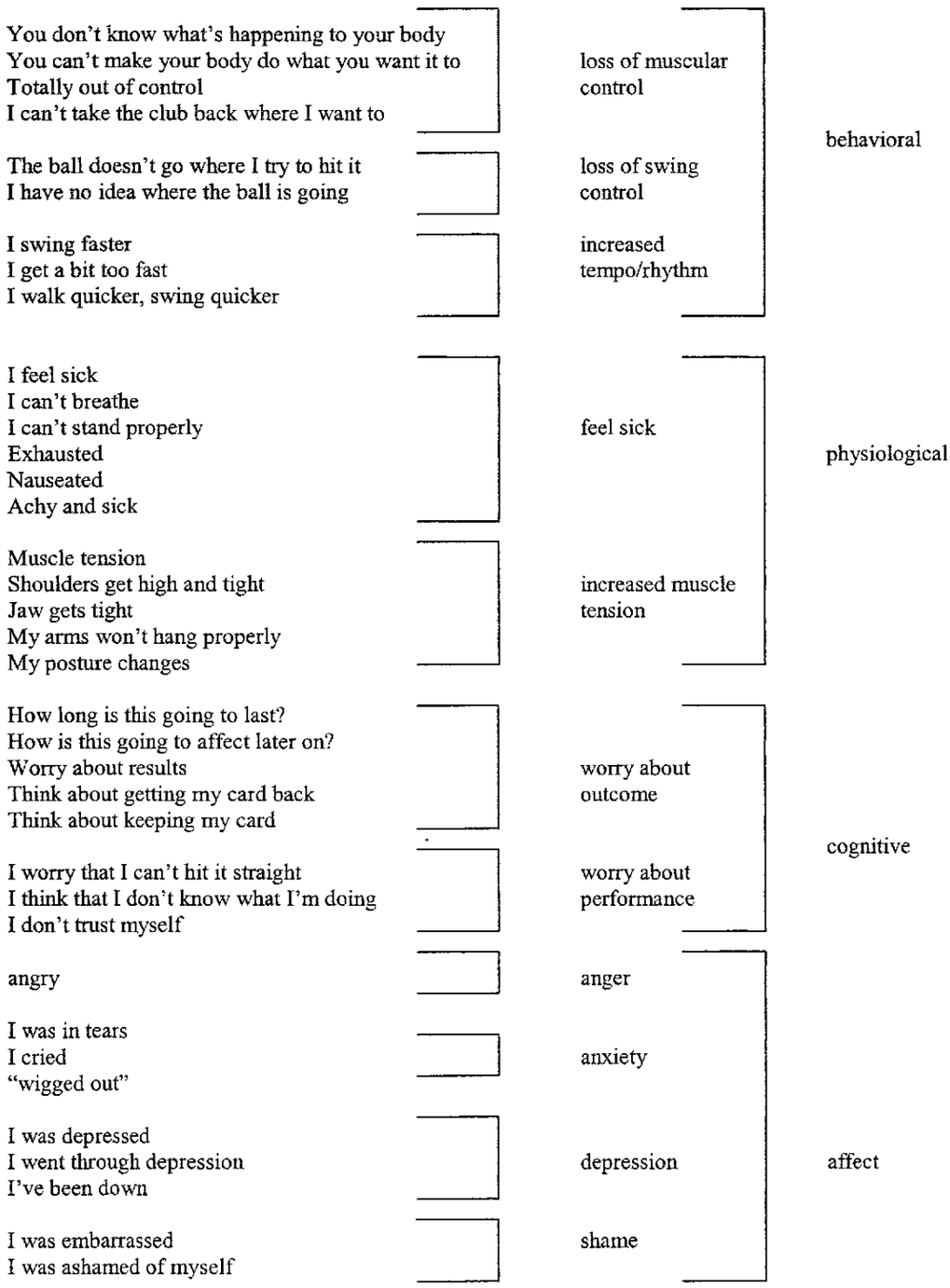

Figure 7. Model of Stress Reactions of Professional Golfers

Behavioral Reactions

The golfers were asked to describe their behavioral reactions to the stressors. Their responses described one of the following: 1) how their bodies reacted to the stress (loss of feeling/muscular control), 2) how the flight path of the golf ball was affected by the stress (loss of swing control), or 3) how their game tempo was affected by the stress (increased tempo).

Loss of feeling/muscular control. A golf swing is a technical skill that requires gross and fine motor control. Most of the golfers described a loss of feeling or loss of muscular control as a reaction to stress. One described her loss of muscular control:

> I didn't have a clue what my body was doing. I don't know how I walked down the fairway. It felt as if each body part was working on its own wavelength. My body wasn't working as a unit.

Another stated:

> I couldn't take my club back at first. Once I got control enough to take my club back, then it was like I had no idea where the club was. Quite literally, I had no idea what was happening to my body. I had absolutely no control.

Other statements included "I didn't know what was happening to my body," "I couldn't make my body do what I wanted it to," and "I was totally out of control."

Loss of swing control. This category includes comments regarding the golf swing itself and the flight path of the golf ball. One golfer described her loss of swing control: "I had no idea where the ball was going to go. I did not know if I was going to hit straight, straight to the right, or straight to the left. It was a guessing game to me." Another knew where she was hitting the ball, but her swing was affected as a result of her

stress: "My swing was going everywhere. I hung back on it and started slicing everything. I had a bad tee shot every match." Other comments in this category included "The ball didn't go where I tried to hit it," and "I had no idea where the ball was going."

Increased tempo/ rhythm. A consistent golf swing is required for consistent golf shots. Inconsistent golf swings lead to tentative or inconsistent play, due partly to the players' lack of trust that they can make theshot required of them. Most of the golfers described an increase in their pace of play or of their swing when describing their behavioral responses to stress. One commented about her pace of play:

> I tend to get too fast. That's one of my biggest problems, but I don't realize that I'm getting faster and faster. I tend to do everything too quickly. I walk quicker, I talk quicker, and I definitely swing quicker.

Comments made by most of the other golfers described the same reaction to stress, and the same result: the change in tempo of their swing leads to inconsistent performance.

Physiological Reactions

The golfers were asked to describe how their bodies reacted to the stressful situations that they faced during a competitive round of golf. Two second-order themes emerged as physiological responses: increased physiological arousal and increased muscle tension.

Increased physiological arousal. This sub-category includes the golfers' comments describing their bodies' reactions to stress. These reactions ranged from "experiencing butterflies" to "feeling nauseated, like I was going to throw up." One golfer commented, "My stomach was churning. My hands were sweaty, and I was shaky. I didn't feel as if I could stand properly." Another stated, "I was exhausted by the end of

the round, almost like a sick, nauseated feeling. I could not breathe. I turned to my caddy and told him that I could not get any air in at all."

One golfer described her inability to sleep during the week prior to a tournament and throughout the tournament:

> About one week before a major tournament, I find it difficult to go to sleep. My heart is racing a bit faster, and I think I breathe faster too. I find it difficult to relax. I don't sleep well in hotels anyway, and so I continue sleep poorly until the tournament is all over.

Increased muscle tension. Increased muscle tension was mentioned by all of the amateur golfers and all but one of the professional golfers. Increased muscle tension can affect the tempo/rhythm of the golf swing, which in turn may result in poor shot making. This category was developed to include all comments describing either a feeling of tightness or an increase in muscle tension. One of the golfers stated:

> I tend to get quick because I get tight in the shoulders, tight in the legs, which tends to make me stand a little straighter and sort of inhibits the swing. This in turn makes me quick because I don't feel the back swing. Instead of staying loose and a nice full turn, I tend to get tighter, which causes a short, quick swing.

Another described the effects of tension on her posture and stance, as follows:

> I can tell. My shoulders get up a little bit and my arms will not hang. I am different. My posture is different because of just that little bit of tension. When my posture is different, my arms won't hang properly, and I probably change my stance because of that.

Related comments made by the other golfers included "My heart beats faster," "It's hard to breathe," "I had butterflies," and "My body tenses up."

Cognitive Reactions

Course strategy is an important component of a competitive game of golf. With each shot, the golfer must make decisions as to the type of shot to hit, which club to use, where to aim the ball, how and how far the ball needs to travel. In order to make these decisions, the golfer must be able to think clearly while focusing on the task at hand. Cognitive reactions to stress, therefore, are of utmost importance, since golfers need to stay focused on the appropriate cues and thoughts while making important course management decisions. The cognitive reactions to stress described by these golfers included worry (worry about outcome and about performance) and negative thinking.

Worry. Many of the golfers described "worrying" about something as a cognitive response to stress. Their descriptions included either worrying about the overall score or placement (worry about outcome) or worrying about their actual swing/performance during the round (worry about performance).

Worry about outcome. Many of the elite golfers stated that, when under pressure, they felt concerned about the future (e.g. their placement in the tournament, how this placement will affect their overall ranking, etc.). The golfers described worries about placement, ranking, making money, qualifying for teams, keeping their cards, and making cuts. One described her worries in detail:

> It was like a flood of [thoughts about] how long is this going to last? How is this going to affect later on? Just kind of thinking about how this is going to affect my whole year, like how many more cuts can I miss before I lose my card? I *have* to

> play well in order to ensure that I'll be OK for next year and I won't have to Monday qualify next year.

Another commented:

> I was worried that I had blown my chances to make the National team, and I was still on the front nine of the tournament. I had a lot of golf left to play, but at that moment I was already worried that I had lost any chance to play for Canada.

Other comments regarding outcome included "I worried about my results," and "I kept thinking about how well I needed to do to get my card back."

Worry about performance. While some of the golfers described concerns about the outcome of the tournament, others described worrying about their ability to play the way that they wanted or needed to, or about the process of the game. Such comments were categorized as "worry about performance." One of the golfers described her performance worry as follows:

> I didn't think that I could trust myself to hit the shots that I was supposed to hit. I was so worried that I couldn't hit it straight. I didn't even trust myself to pick the proper club or aim to the proper spot on the course, because I wasn't sure how the ball was going to come off of the club.

Other comments that were categorized as worry about performance included these: "I worried that I couldn't hit it straight," "I thought that I didn't know what I was doing," and "I didn't think that I could hit the shot that I needed to, even though I really could have hit that shot."

Negative thinking. Negative thinking can affect the effort a person puts into an activity or sport performance. A few of the amateur golfers described negative thinking

as a cognitive reaction to stressful situations; however, none of the professional golfers described negative thinking as a response to stress or to a stressful situation. This category included comments by the elite amateurs that described focusing on the negative possibilities or negative aspects of their situation. The negative thinking described by the elite amateurs was related to both performance and outcome. One stated:

> I just kept thinking about all of the bad stuff that could possibly have happened to me in this situation. I was not thinking about all of the good stuff or the opportunities to use certain shots from that lie; I only focused on the fact that my ball was lying in a terrible spot on the course.

Another golfer stated, "I was just focused on all of the negative things, that I wasn't good enough to be there, and I ended up proving myself right."

Affective Reactions

Many athletes are taught from a young age to maintain their composure while performing or competing. They are expected to remain calm when performing poorly and to be "good sports" when they have lost or when things haven't gone their way. On the other hand, they are also expected to win graciously and remain composed when they have won or performed really well.

The golfers gave a variety of responses as to their emotional responses to stress. Although some of the elite golfers mentioned affect in detail, often intensely, others were not sure how they reacted emotionally to the stressors they faced. The professional golfers described their affective responses to stressors with great intensity, describing "extremes" in their emotional responses to stressors during competitive rounds of golf. The affective responses given by the elite golfers ranged from "depressed" to "getting

down," and from "angry" to "irritable." Other affective responses given by the elite golfers included shame and anxiety.

Depression/Getting down. Sport is an arena where athletes are publicly judged and evaluated. It can be a very difficult for athletes to not play up to their potential or to play poorly while being scrutinized by other golfers, media, sponsors, and the public. One described her emotional reaction to the stress as "becoming depressed." Another described her reaction in less intense terms, as "getting down."

The golfer who mentioned depression in her response stated that she was describing a very intense emotional experience that, although not acute, was ongoing. This particular golfer had a previous season of playing poorly and not living up to her own expectations. She went through a depression for which she sought psychological help following the season. She stated:

> I went through a depression last year. I had a bad year and I was down, so that was the way I dealt with things. Each time I played poorly or something bad happened to me on the course, I got a little deeper into the depression. I sought help once last season was over.

Another golfer gave a less intense response: "When I made those errors, I thought that my place on the National team was in jeopardy. I got down on myself."

Anger/Irritability. A few of the golfers mentioned anger as an emotional response to the stressors faced. The intensity of the anger described by the golfers ranged from "angry" to feeling "irritable." One player mentioned her family's noticing this reaction:

> I don't really notice it, but my family notices that I get a bit "short" and a bit "irritable" starting at about the beginning of the week prior to a tournament. When

> I did that and I felt stressed, I was irritable with myself because I made some poor choices that I shouldn't have made.

Another player stated:

> I became very angry when I made poor course management decisions that cost me strokes. I hate to admit it, but most of the time I react to situations with anger. I made a bogie and I shouldn't have. That made me angry.

Anxiety. This category included all of the golfers' comments that expressed distress or nervousness. There was a continuum in the intensity of comments included in this category; the comments ranged from "crying" to "wigging out." The following comments exemplified this category: "I was in tears," "I broke down crying," and "I wigged out.... I actually withdrew and I did not play the next day."

Shame. One golfer described shame and embarrassment as her reaction to a stressful situation. She described the shame of being expected to play far better than she did on that day. She felt personal shame in front of her peers because of her poor performance:

> It was embarrassing. I felt shame. How does my playing partner put up with me playing like that? It was very uncomfortable when you know that you have played at a high level, and then you don't. It was embarrassing. I felt very ashamed of myself because of my play.

Coping Strategies

The professional and the elite amateur golfers used an integrated series of cognitive and behavioral strategies to deal with the stress faced during a competitive

round of golf. The golfers discussed in great detail the stress management techniques they used; they also provided information about the stressor management techniques they use.

Stressor Management Strategies

Hiebert (1983) described stressor management strategies as those that involve learning or practicing specific skills in order to handle the stressful situation more effectively. The stressor management strategies described by the golfers involved learning a particular skill or practicing skills in order to prepare themselves for the stressors related to the tournament itself.

The golfers' management of stressors included behavioral and cognitive strategies. The core theme of "behavioral stressor management" was accompanied by the first-order theme of "practice." "Visualization" and "getting to know the course" were attending first-order themes to the core theme of "cognitive stressor management." The core themes and sub-themes of stressor management strategies described by the elite amateur and professional female golfers are presented in Table 3.

Table 3. Stressor Management Strategies of Elite Amateur and Professional Female Golfers: Core Themes and Sub-Themes

Core Themes	First-Order Themes
Behavioral	• Practice
Cognitive	• Visualization
	• Getting to know course

The stressor management strategies reportedly used by the elite amateur golfers are presented in Figure 8, and those used used by the professional golfers in Figure 9.

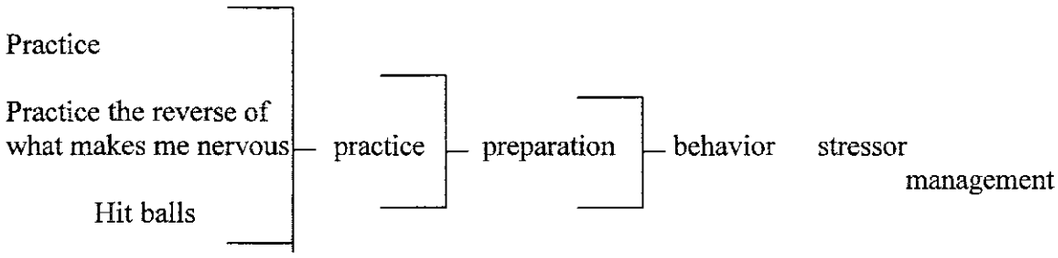

Figure 8. Stressor Management Strategies of Elite Amateur Golfers

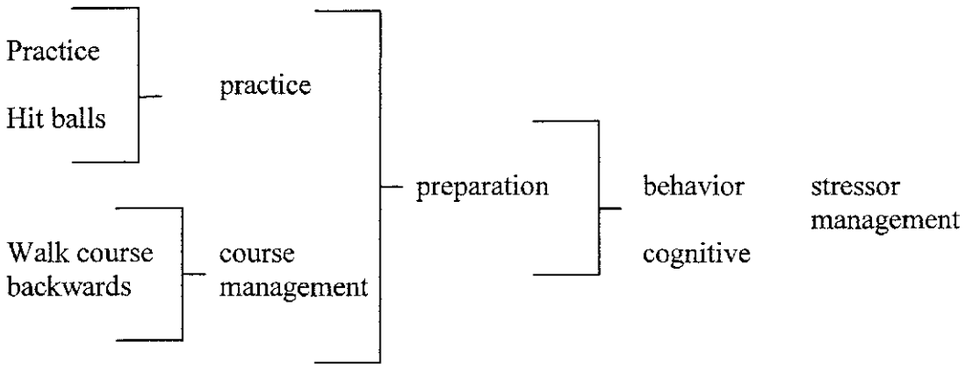

Figure 9. Stressor Management Strategies of Professional Golfers

Behavioral Coping Strategies

Practice. The one behavioral strategy utilized by all of the golfers was practice. One stated, "I practiced my weaknesses from last week to ensure that I felt confident going in. I hit balls to make sure I feel prepared." Another player provided a detailed description of her approach to practice:

> I practice the reverse of what caused me to be anxious. For example, I was having a difficult time with a certain shot. I go to the range and find a spot on the range to put myself into that similar situation, and then I hit a dozen balls or whatever I need, until I feel comfortable. I had that situation a while ago where I was just not driving the ball very well. I made an 8 on one of the qualifying rounds. I just went to the far right side of the range to get the same feeling after the round, making sure that I could start it left and still have it turn left, and have confidence that it would be okay. I put myself in that situation in practice so that, when it comes up in the next round, I can think not of what I did but the success I had on the range. This is very important for me.

Cognitive Coping Strategies

Walking the course backwards. One of the professionals described a cognitive stressor management strategy, walking the golf course backwards in order to improve her course management strategies:

> Walking the course backwards gives me a different view of the golf course and helps me see strategic points. This makes me feel more confident going in to each tournament. I feel more prepared.

Visualization. Visualization, or mental rehearsal, is a strategy that is particularly useful for athletes preparing for an event. Many of the golfers described using visualization prior to the tournament. Off the course, athletes pictured the golf course in their heads, planning their competition strategy prior to play. One stated:

I visualize the course and plan my course management strategies each night before I go to bed. I feel much more confident going into the round with a plan. I might have to change it according to the weather, etc., but I always have a plan.

Stress Management Strategies

The golfers utilized a greater variety of stress management strategies than of stressor management strategies. Their stress management approaches included behavioral and cognitive strategies used on the course, helping them to manage their emotions and cope more effectively during a stressful round of competitive golf.

The "behavioral stress management" core theme included the second-order themes of "relaxation," "releasing," "distracting," and "focusing." These second-order themes were related to the first-order themes of "deep breathing," "slowing down," "stretching," "swearing," "getting angry," "talking" and "pre-shot routines." "Positive self-talk," "rationalization," "thought stopping," "refocusing strategies," and "visualization" were first-order themes accompanying the second-order themes of "positive thinking" and "task focus" within the core theme of "cognitive stress management." The core themes and sub-themes of stress management strategies described by the elite amateur and professional female golfers are presented in Table 4.

Table 4. Stress Management Strategies of Elite Amateur and Professional Female Golfers: Core Themes and Sub-Themes

Core Themes	Second-Order Themes	First-Order Themes
Behavioral	• Relaxation	• Deep breathing
		• Slowing down
		• Stretching
	• Releasing	• Swearing
		• Getting angry
	• Distracting	• Talking
	• Focusing	• Pre-shot routines
Cognitive	• Positive thinking	• Positive self-talk
		• Rationalization
	• Task focus	• Thought stopping
		• Refocus strategies
		• Visualization

Figure 10 models the stress management strategies reportedly used by the elite amateur golfers. Figure 11 models the stress management strategies of the professional golfers.

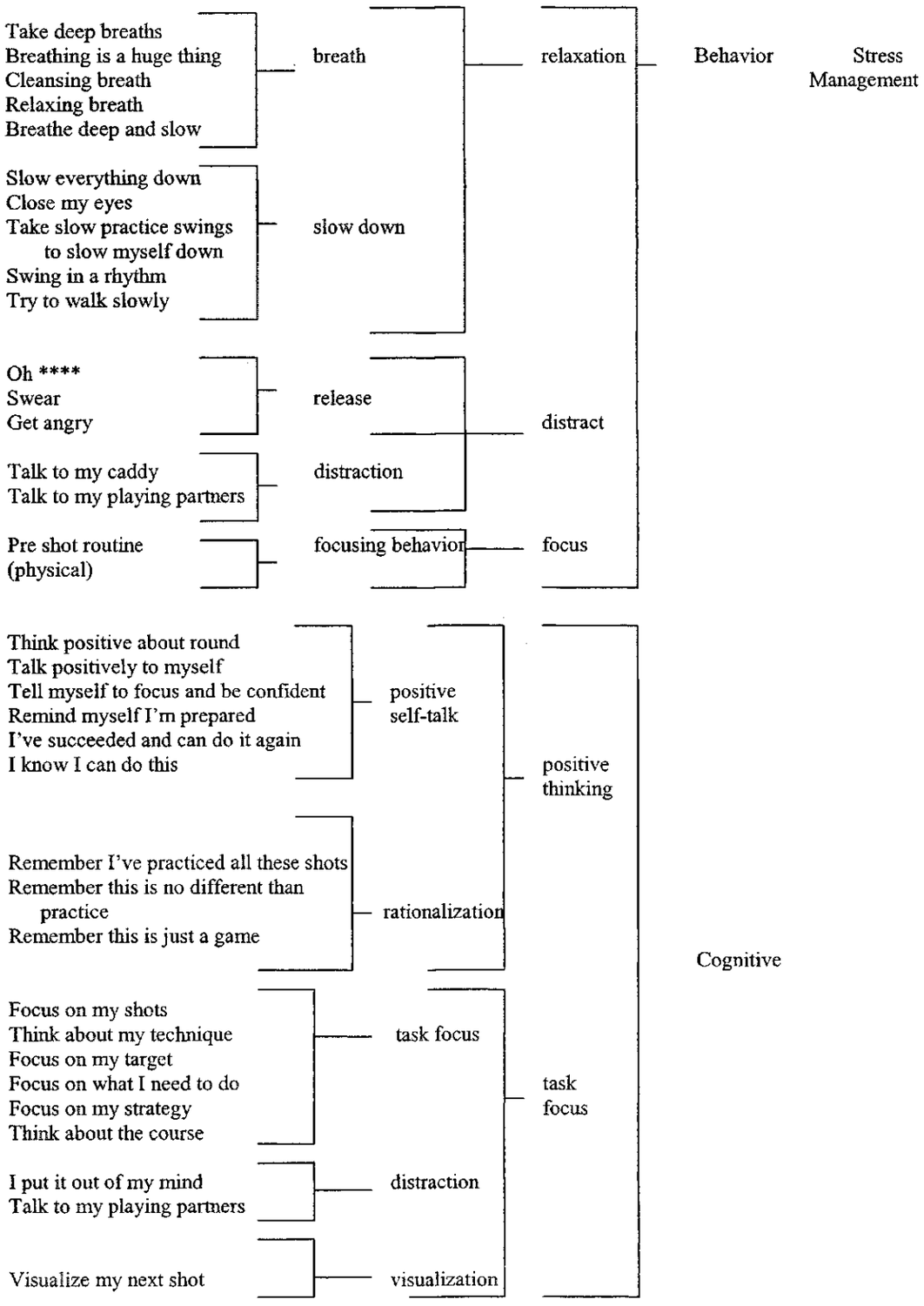

Figure 10. Stress Management Strategies of Elite Amateur Golfers

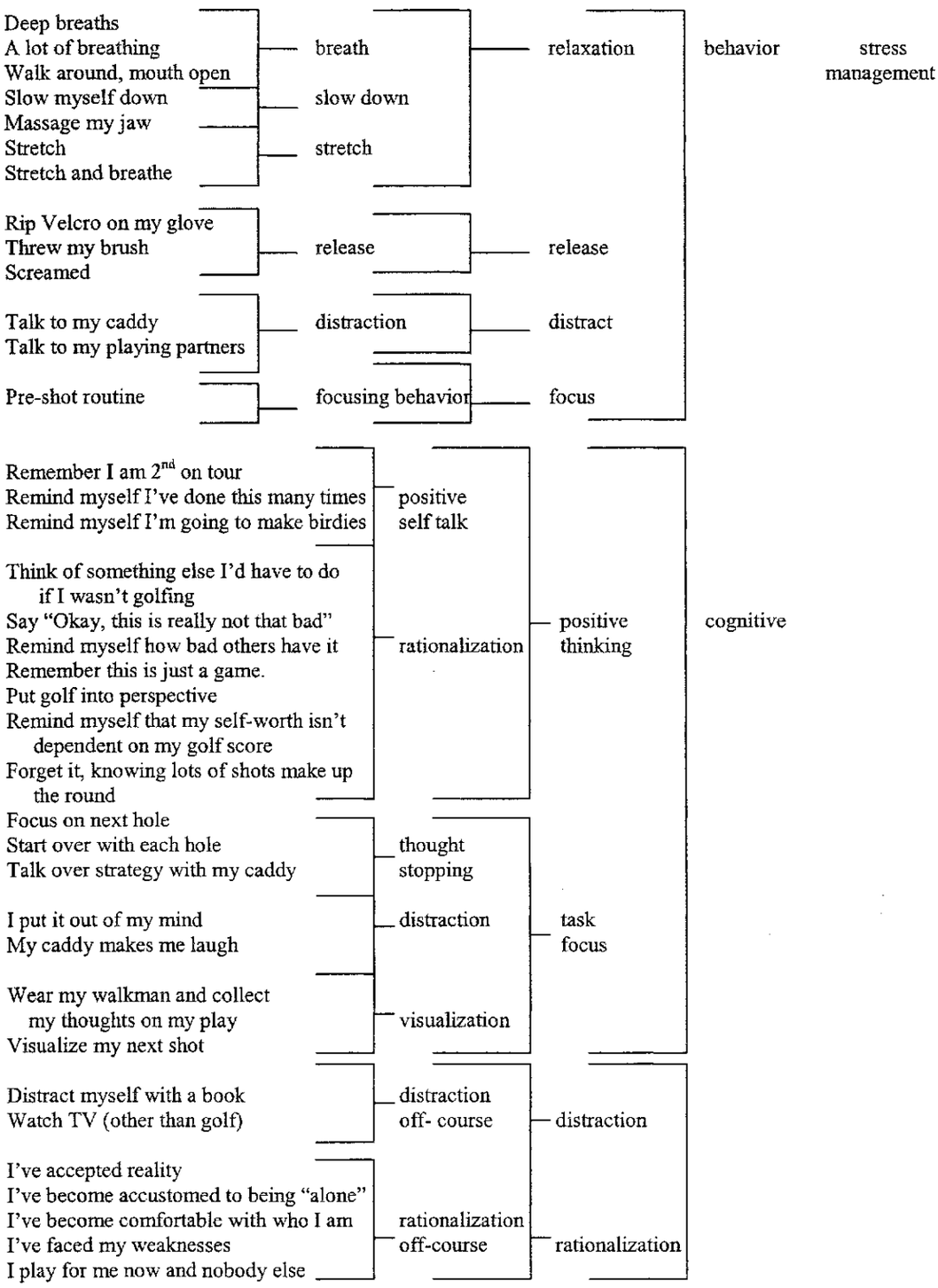

Figure 11. Stress Management Strategies of Professional Golfers

Behavioral Stress Management Strategies

The golfers described a number of behaviors that they used to cope with the stress during a competitive round of golf. The behavioral stress management strategies they mentioned included strategies for relaxation, release, distraction, and behavior focusing.

Relaxation Strategies

Progressive relaxation (Jacobson, 1974) is based on the notion that the body responds to stress with muscle tension. This physiological tension then increases the individual's subjective experience of anxiety. Relaxation reduces physiological tension and is not compatible with anxiety.

Many of the golfers mentioned that they noticed an increase in their pace of play when under stress. These same golfers described using relaxation strategies as a means of slowing down. Others mentioned using relaxation in order to decrease or minimize the amount of muscular tension they were experiencing.

Relaxation strategies used by the professional golfers included deep breathing, slowing down, massaging, and stretching. Deep breathing was mentioned as a strategy in itself, and deep breathing was also included in the comments that mentioned slowing down and stretching. These second-order themes are described in detail below.

Deep breathing. Deep breathing is an important part of the relaxation process. With increased physiological stress, the breathing rate tends to increase, in turn increasing the individual's subjective perception of stress. In order to relax, athletes must be able to breathe deeply to counteract the natural stress reaction and to allow oxygen to be transported to the working muscles. Many of the golfers described using deep

breathing as a coping strategy. One golfer stated, "When I was stressed, I just kept taking a lot of deep breaths. I needed to breathe and relax." Another stated, "I left my mouth open and walked around. I always try to pay a lot of attention to breathing because I get way up in my chest." Other comments included, "I massage my jaw to help me relax and breathe," "I take a cleansing breath," "I breathe deep and slow," and "I take deep breaths. Breathing is a huge thing for me."

Slowing down. Many of the golfers described an increase in the tempo of their swing or of their play during competitive rounds of golf. In order to cope with this increased pace, they golfers described making a conscious attempt to slow themselves down. One stated, "When I felt it happen, I tried to slow down. I made a conscious effort to slow down the pace of my walk, my talk, and my play." Another explained, "I tried to slow everything down. I closed my eyes and took slow practice swings to slow myself down. I waited until I could feel a nice smooth and slow rhythm."

Stretching. To counteract her increased muscle tension, one of the golfers mentioned that she stretches while on the tee box waiting for her turn to drive the ball. She was the only golfer who mentioned combining stretching with deep breathing in order to try to relax: "I stretch a little bit while on the tee box. I get the club behind my back and stretch and breathe."

Release Strategies

A second behavioral strategy mentioned by the professional golfers involved attempts to release themselves from the stress. They mentioned using release strategies while playing on the course, and also away from the golf course after a stressful round.

One golfer mentioned that her release strategy while on the course was ripping off the Velcro on her golf glove: "I rip my glove. I rip the Velcro and then I am done. It's released. Kind of like swearing, but I do not swear." Another mentioned getting angry and swearing as a means of release: "I got really angry at myself and I swore. I tried to swear quietly, but I swore."

Some of the golfers described their need to release their frustrations after the round was over, away from everyone else. One stated, "I went back to the hotel and I screamed." Another described her release strategy after a stressful round:

> I bogied the last three holes and I was really angry. We got in the car and went back to the hotel. The telecast was on and it kept projecting the cut. First I was in, then I was out, then I was in, and then it got down and I missed by a shot. I was steaming. I walked by the TV, and sitting on top of the TV was a golf shoebox. It had new shoes and a whole bunch of spikes inside. I hit the box, the spikes went everywhere, and I just kept walking. I walked into the bathroom and grabbed my brush. I walked with my brush into the completely tiled room and threw that brush, picked it up and threw it again. Then I came out and said I was fine now.

Distracting Behaviors

A few of the golfers described trying to distract themselves from the stressful situation by focusing on something other than the stressful event or situation. All of the players who discussed trying to distract themselves attempted to do so by talking with their playing partners or with their caddy. One explained:

> My caddy is right on me. He knows me, and he knows what I need. He knows that I can't think too much and get myself all worked up about things. During this

> tournament, he just started talking about something else to get me away from thinking.

Another golfer stated:

> I know most of the girls that I play with, and so I have something to talk about with most of them. I know which ones like to talk and which ones don't, and I talk to the ones that I know are OK with it. This keeps me thinking about other stuff rather than the tournament. I can't think so seriously for that long.

One golfer discussed using distracting behaviors after the tournament, away from the golf course. Another described her attempts to distract herself from the competitive round of golf following a stressful day but prior to the next day's round. She described her attempts to keep herself "sane" by thinking of things other than her game of golf between rounds:

> I needed a distraction that night, too. I can't think about the tournament 24 hours every day, or I'd go nuts. I read a lot of books, and I enjoy watching TV in my hotel room, just to zone out. I don't watch golf, though!

One golfer mentioned another distracting strategy: "I put it out of my mind by trying to think of nice things."

Focusing Behaviors

Pre-shot routine. The final behavioral stress management strategies described by the golfers were attempts to focus specifically on the task at hand. They described their attempts to focus on their next shot or the next hole. All of the golfers' explanations involved attempts to adhere to their pre-shot routine. One of the golfers stated:

> I simply go back to my practiced pre-shot routine. I go through the motions I have done over and over again. The routine helps me get from the thinking mode to the doing mode.

Another mentioned:

> I just stuck to my pre-shot routine. I was scared, and then I just thought that this was ridiculous and I have to relax and go back into the routine. I took a deep breath and told myself to get into my routine. Then I just hit my next shot and focused on it.

Cognitive Stress Management Strategies

The elite amateur and professional female golfers also engaged in cognitive stress management strategies. A critical factor in peak performance is belief in one's ability to perform. Self-confidence or self-efficacy is often affected by recent performance. Athletes are prone to feel good about themselves following high-level performance and to feel badly about themselves following low-level performance. The elite amateur and professional female golfers discussed self-efficacy in explaining their cognitive stress management strategies. The core cognitive strategies mentioned by the golfers were broken down into the first-order themes of "positive thinking," "task focus," and "rational thinking."

Positive Thinking

A competitive round of golf lasts a minimum of four hours. For peak performance a competitive golfer must believe that she can perform well throughout the entire four hours, because each hole is important in the overall score. The elite golfers described using positive self-talk and positive rationalization as cognitive stress management

strategies on the golf course. They also mentioned using positive rationalization as a form of stress management away from the golf course, after a stressful round.

Positive Self-Talk

Positive self-talk on course. The elite golfers' comments about positive self-talk described their attempts to think positively and focus on the positives. One described her use of positive self-talk under pressure:

> I just had to remind myself that I am 2nd on tour in birdies and that I would have a few great chances to make some birdies before the end of the round. I reminded myself that I had done this many times before and that I could do it.

Another golfer said:

> I told myself to focus and be confident. I reminded myself that I have succeeded before and I can succeed again. I also reminded myself that I was prepared and that I could hit any shot that I needed to.

Rational thinking on-course. The golfers reported using rationalization strategies to help keep their golf game in perspective, both on and away from the course. Their on-course rationalization strategies helped them keep the competition in perspective. One of the golfers stated:

> I thought of something else I'd have to do if I wasn't golfing. I told myself that this wasn't really all that bad. I reminded myself how bad other people have it and remembered that this is just a game. I also told myself that I could be golfing or I could be sitting in an office.

Another golfer stated, "I reminded myself that I had hit that type of shot many times before in practice and that golf is golf, practice or competition."

Rational thinking off-course. All of the professional golfers discussed how they had to put the game of golf into perspective in their lives. One stated, "I remind myself that my self worth isn't dependent on my golf score. I'm a nice person whether I shoot a par or whether I play terribly."

Accepting the reality of their abilities helped some of the golfers to keep the game of golf in perspective after a round. One discussed her ability now to look at her life as a golfer, and to distinguish the important from the unimportant:

> I have accepted my reality. I now know where I stand on the LPGA tour and I am proud of that. I have faced my weaknesses, and now I play for me and nobody else. Through this process, I have gotten comfortable with who I am as a person, and I am OK if I go in by myself.

Another explained:

> Oh, you would not believe it. There are a lot of people out here on "happy pills." It is way too much for a lot of people to deal with. At some point we all have to look at ourselves and ask what we are really capable of. Accepting what you are really capable of and what your reality truly is can be very depressing. It's taken me a while, but I've had to accept my realities, and they're not always as pretty as I once thought they would be. I'm now okay with who I am and what I can do.

Task Focus

Concentration demands the ability to focus attention and energy intentionally where it is needed. Focusing on the task at hand (instead of the other players, the weather, etc.) is an important skill for competitive golfers. In a four-to-six-hour round of competitive golf, it would be extremely difficult for players to focus the entire time. It is

important, however, that golfers focus as they approach their shot and throughout the swing. The golfers mentioned the ability to focus their attention on the next shot or to plan course management strategies as a way of managing stress. The golfers described three strategies related to task focus: thought stopping, refocusing and visualization. The elite amateurs described attempts to maintain mental focus on the task at hand: "I focus on my next shots," "I think about my technique," "I focus on my target," "I focus on what I need to do," and "I think about the golf course."

Thought stopping. A few of the golfers mentioned using thought stopping in order to focus on the task at hand. They described using thought stopping techniques in order to change negative thoughts about poor performance to positive thoughts about the next shots that they needed to make. One stated:

> I was anxious, and I kept thinking about how my score was climbing higher and higher. I had to "STOP" myself and think about what it was that I had to do. I had to focus on my game in order to change my score. Thinking about my score wasn't going to do it for me.

Refocusing. Many of the golfers mentioned refocusing as a strategy for concentrating on the important cues and information in the golf tournament. They described their attempts to focus or refocus on their next task or next shot. One described her use of refocusing after a stressful event:

> I had just played a terrible few holes. I had gone bogey, bogey, and I was frustrated. I was beating myself up about my last poor putt as I was walking over to the next tee box. I recognized what I was doing, and I knew that wasn't a

positive thing for me. I then started to work through my strategy for the next few holes. I reviewed what I needed to do next and could focus on the shots.

Another player described her process of refocusing:

> While I am walking over to the next tee, I say to myself, "New hole. Start again." And so I play like each hole is the most important. I start again with each new hole.

Visualization. Many of the golfers described picturing themselves playing their shots in their minds prior to actually taking the shot. One stated:

> I don't trust myself to play any shot until I can see myself doing it in my head. Once I can see it in my head, I can commit to making it happen. If I don't see myself hitting that shot, or if I see myself hitting it poorly, I rethink my strategy.

Another golfer stated:

> I wear my Walkman prior to the round and get my thoughts collected. I go over the course in my head and plan my strategy. I see myself play a terrific round of golf prior to warming up.

Differences Between the Elite Amateurs and the Professionals

There were very few differences overall between the responses given by the professional golfers and those given by the elite amateur golfers. The variety of responses given by the individuals within each of those groups illustrates the idiosyncratic nature of stress.

One major difference in the sources of stress between the elite amateur and professional golfers was the impact of a positive social support system on the golfers' perceptions of stress and ability to cope with stressful situations. Another major

difference between the elite amateur golfers and the professional golfers was the intensity of their descriptions of their emotional reactions to stress. Finally, the need to keep the game of golf in perspective varied between the elite amateur and professional golfers. These differences are discussed below.

Lack of Social Support

Absence from family. Playing professional golf on the LPGA tour requires a tremendous amount of travel. All of the professionals described being away from family as a source of stress. Elite amateur golfers are required to play a lot of competitive golf and travel extensively, yet they are not yet required to travel to the extent that the professionals do. Only one of the elite amateurs described being away from family as a source of stress. She described worrying about her family while she was away:

> My daughter was going off by herself to her own sporting competition, and I was worrying about her too. She was driving by herself on the highway, and I was actually letting that happen. That was an issue for me.

The professional golfers' descriptions of being away from their families were more global. Rather than describing one event when they missed their family, they spoke of being away from their families for long periods of time and described the effects of these absences. For example, one described feeling selfish for leaving her family:

> I often feel very selfish for leaving home in order to play my game. When I leave, I want to do my very best in order to help justify my long absences from home.

Another described the lack of social support in her daily life:

> I've had to get used to eating breakfast by myself, usually in my hotel room or at the golf course. When I am on the road, I tend to lead a very solitary life.

> Remember, everyone that I am with each day is vying for my position. It seems like it may be a glamorous life on TV, and sometimes the money is great, but it is also a very solitary and competitive life.

The only evident difference between the elite amateurs and the professional golfers as to the sources of stress appeared in their responses about social support. Both the amateur and the professional golfers mentioned all the other sources of stress.

Reactions to Stress

The elite amateurs and professionals responded differently when describing their emotional reactions to stressful situations. The professional golfers described their responses to the researcher more intensely and in greater detail than did the elite amateurs. The elite amateurs' responses were less intense; in fact, one of the elite amateurs reported that she didn't know or wasn't aware of how she responded emotionally to the stress.

The other elite amateurs stated they responded emotionally to stress in various ways. One mentioned becoming emotional: "I tended to get a bit more emotional when I was stressed." Another reported feeling unhappy: "I was really down after that." A third reacted with anger: "I was angry at myself."

When describing their emotional reactions to stressful situations, the professionals responded with more intensity. One mentioned depression:

> I went through a depression last year. I had a bad year and I was down and stuff, so that was the way I dealt with things. Each time I played poorly or something bad happened to me on the course, I got a little deeper into the depression. I sought help once last season was over."

Another reported that she had lost her self-control and "wigged out":

> It was probably the worst round of golf I have every played, and it freaked me out. I had a major anxiety attack on the first day I was there. I couldn't get a hold of myself. Quite literally it was like an out-of-body experience that just freaked me right out. I withdrew from the tournament and went home.

Coping Strategies

Rationalization. The elite amateur and the professional golfers clearly have different perspectives on the game of golf and the impact that their golf performance has had on their lives. Both the elite amateurs and the professionals mentioned having a micro-perspective on their game of golf. Both groups reported rationalizing during a tournament as a method of coping. Both made statements such as, "I remember that I've practiced all of these shots," "I remember that this is no different than practice," and "I remember that this is just a game."

The elite amateurs did not discuss a macro-perspective of golf at all; however, all of the professionals discussed how they have had to rationalize the game of golf in order to keep perspective in their lives. The professionals discussed the coping strategies that they use not only on the golf course (a micro-perspective) but also the coping strategies that they use day in and day out (a macro-perspective). As one commented:

> Remember that this is just a game. It is just a game. No matter who is putting pressure on you from the outside, it is just a game. You see a lot of that out here, a lot of pressure from the outside. A game is not life and death, so I can't take it that way. My family is going to love me whether I play good or bad. My self-worth is not based on the outcome of this game. I've had people come up and tell me that I

> have really played bad this year. They're right, but it is just a game and I cannot let that determine how I am going to feel about myself. It does not help, certainly...but I am not going to let the rest of my life be miserable because of my score on the golf course.

Another professional wrapped up her interview by saying:

> I've had to figure out who I was and why I was playing. It was important for me to make sure that I was playing for all of the right reasons, that I was playing for me and not for anyone else. You will be much more successful both inside and out if you can do that, because you cannot play for somebody else. That has been the key for my existence out here,

Chapter 5

Discussion and Conclusion

The purpose of this research was to explore the effects of stress on elite female golfers. Specifically, this research explored the sources of stress, stress reactions (emotional, cognitive, behavioral, and physiological), and coping strategies used by elite amateur and professional female golfers.

The golfers who participated in this study had the opportunity to talk about a very stressful situation that occurred during a competitive round of golf during the season in which the research took place. They were able to describe the tournament and how they felt going in to it. The golfers also described the stressful situation they had faced, and the reactions that they had to the stressful event (emotional, cognitive, behavioral, and physiological). Finally, the golfers described the strategies they used to cope with the stressful situations. The responses given by the elite amateur golfers and the professional golfers as to the sources of stress, stress reactions and coping strategies were analyzed, and common themes were developed. Finally, the responses given by the elite amateur golfers and the professional golfers were compared. This chapter discusses the implications of the results, the implications for counselling elite athletes/golfers, the limitations of this study, and the implications for further research.

Professionalism of Elite Amateurs

The results of this research show that both groups of golfers participating in this study were homogeneous with respect to sources of stress, stress reactions, and coping strategies used. The elite amateur golfers and the professional golfers revealed very few differences as to what they found stressful while playing a competitive round of golf,

how they reacted to the stress, or the coping strategies they used. Most of the elite amateurs in this study have been competing at a high level at universities in the United States throughout the winter months and at amateur competitions throughout Canada during the summer months. The elite amateurs have the opportunity to play in a number of tournaments throughout the year, leading up to the Canadian and U.S. amateur championships (which are the most prestigious events for amateurs) near the end of the competitive season. The amateurs, in some ways, train fulltime as if they were professionals. A few of the amateurs have played in professional tournaments as amateur players and have made the cut, placing in the top half of the field amongst the professionals. The aspirations of some of the amateur golfers participating in this study are to turn professional once they have completed their education.

In some ways, the amateurs may be more "trained" than the professionals for competitive situations. Members of the Canadian Ladies Amateur Golf Team work with a golf coach, a sport psychologist, a nutritionist, and an exercise physiologist during the national training camps. They are then expected to remain in contact with these professionals and consult with them on an on-going basis throughout the year as part of their training program. The elite amateur golfers are given all of the opportunities they need to learn how to deal with stress from trained professionals, right from the time they have made the National Amateur team. They may learn coping skills, therefore, without having to go through the trial-and-error periods that some of the older golfers had to experience. It was not surprising, therefore, that the amateurs responded quite consistently as to their coping strategies under stress. For example, all of the amateurs discussed the use of their pre-shot routines in a very detailed manner. They have been

taught the skill to prepare for each shot and to follow the same pre-shot routine consistently. This training of the elite amateurs to prepare for stressful situations is consistent with Hiebert's (2000) belief that stressor management strategies can be used in a preventative manner. The more resources the golfers have when facing the demands of competition, the less likely they are to be overtaxed by them, and therefore the less stress they will experience.

The professional golfers, on the other hand, may or may not decide to use the services of professionals, such as exercise physiologists and sport psychologists, to enhance their performance. The older professionals, who have been on the LPGA for a number of years, may or may not have been exposed to such professionals by their respective sport governing bodies while they were amateurs. Consequently, the older professional golfers most likely did not have the same support as the elite amateurs in learning to practice effective stressor management skills. Many of the LPGA players had to learn through trial and error how to prepare for stressful situations or what techniques seemed to work the best for them when stressed.

An obvious difference between these two groups is that the elite amateur golfers are exposed to a sport psychologist, who is able to help them learn coping skills in a pro-active manner as part of their training regime. The professionals may or may not choose to utilize the services of such professionals. Practice of these skills is important if they are to be used effectively when needed (Slobounov & Yukelsa, 1997). An increased commitment to the preparation of elite female golfers by the Canadian Ladies Golf Association has allowed our young elite golfers to develop into tournament-ready players rather than players who have had to learn through trial and error over the course of time.

Stress, an Idiosyncratic Reaction

The results of this study illustrate that stress is a very idiosyncratic reaction to an individual's perception of the demands of a situation. The results strengthen the existing literature on stress (Hiebert, 1983; Lazurus & Folkman, 1984) and stress in athletics (Gould, Finch & Jackson, 1993; Gould, Horn, & Spreeman, 1983; Gould & Petlichkoff, 1988; Gould & Weinberg, 1985). There were no common themes or patterns regarding the time when stressful situations occurred throughout the competitive season, or regarding the events or conditions leading up to the stressful situation. This is important to consider, because it implies that not all elite golfers will become "stressed" at the same time or in the same situations.

Although one cannot predict that all elite golfers will feel stress in identical situations, common predictors or themes were evident in this study that might allow prediction of situations in which golfers may feel stress (e.g., when score or performance is important). The development of common themes is imperative for an understanding of stress in competitive golf. Each elite golfer is an individual, however, and it is vital for professionals working with these individuals to take time to develop a rapport and an understanding of each golfer's unique situation.

Sources of Stress

Performing well enough to make a cut or qualify for a team was a common source of stress for most of the golfers. Golf is a sport that has an objective outcome measure, the final score at the end of each round of golf. Due to the measurable nature of the sport, golfers are assessed according to their overall score at the end of each tournament, or according to their score after two rounds of golf to determine the "cut." Because the focus

is on the score, all of the golfers described placement or score as a source of stress. If golfers do not play well in a tournament, they will not make the cut or will not place well. Professional golfers are paid, and amateur golfers are chosen to be on the National team, according to their placement in each tournament. It would be important, therefore, for golfers to be aware that "important" events such as qualifying tournaments or "making the cut" are potentially very stressful situations.

Living up to their own and others' expectations of themselves was also a common source of stress for the golfers. Professional golf is viewed on TV each week, and therefore each tournament can become a public performance for the golfers. The amateur golfers are ranked and the statistics are publicly listed on the Canadian Ladies Golf Association's website. These points illustrate the public interest in the game of golf. Parents, friends, and fellow golfers can observe each individual's performance on a weekly basis. Many of the elite amateur and professional golfers stated that they felt "judged" by others at each tournament. These findings are similar to the results of Gould, Horn, and Spreemann's (1983) study, which found that "performing up to one's ability," "not doing well," "losing," and "participating in championship meets" were sources of stress for elite junior wrestlers. The study determined that these sources of stress were associated with fear of failure, feelings of inadequacy, and social evaluation. Similarly, the elite amateur and professional golfers reported that social evaluation was a major source of stress.

The effects of social evaluation could be minimized by helping amateur golfers become aware of their own abilities and assisting them in developing realistic goals for their game of golf. Theodorakis (1996) found that goal setting and perceived self-efficacy

were directly related. Setting performance goals instead outcome goals for practice and competition could be very helpful for amateur golfers to take the pressure away from "winning" to "playing the course well." Focusing on performance rather than score, therefore, seems to be an important factor in decreasing the effects of performance expectations on the stress felt by the golfers. Setting realistic performance goals allows the golfers to observe improvements in performance. Experience and success have been shown to have a positive impact on self-efficacy (Haney & Long, 1995; Johnson, 1994; Schunk, 1995). This increased self-efficacy in turn influences athletes' motivation and performance, which helps them to persist under difficult conditions. This study also emphasizes the need for all levels of golfers to set challenging yet attainable goals on a regular basis.

Most of the professional golfers in this study mentioned the need for a strong social support network. Professional golf entails a tremendous amount of travel. A major concern for all of the professionals was the amount of time that they spent apart from their families. Being alone and seldom feeling as if a strong social support system is in place for them while traveling were sources of stress for the professionals. The amateurs in this study compete against each other but also compete as a team. For example, they will go to an international tournament where each individual is competing for herself and also for Canada. Although each individual score is important, the overall team score is just as important. Therefore, these golfers are still working together against all of the other countries as they compete against one another individually. In addition, the National coach and other supports are available for them while they are competing as a team internationally and while they are competing individually at the Canadian Amateur

Championships. Because of these dynamics, a stronger sense of social support is in place for the elite amateur golfers than is in place for the professional golfers. These findings support earlier research that demonstrates the importance of a positive social support network on perceived stress and athletic performance (Campen & Roberts, 2001; Kelley & Gill, 1993; Lane et al., 2003).

The results of this study are consistent with those found by Gould, Jackson and Finch (1993), that athletes experience stress from both competition and non-competition sources. The results also suggest that, due to the many roles that individual athletes have and the many demands placed upon them, they require a variety of coping strategies for successful performance.

Stress Reactions and Coping Strategies

The golfers all described behavioral, physiological, cognitive and affective responses to the stressors that they faced. In support of Hiebert's (1983) suggestion that stress control is best approached by utilizing a wide range of coping skills, the golfers described dealing with the stressors using a variety of techniques, often in combination. These results are consistent with past research into coping strategies in sport (Gould, Eklund & Jackson, 1993; Gould, Finch & Jackson, 1993). The golfers described the use of stressor management strategies and stress management strategies. Stressor management, which Hiebert (2000) describes as the "first line" of a stress control program, involves examining the situation to see if there are things that can be done to reduce the imbalance between the situational demands and the coping resources.

The golfers described the stressor management techniques they used. These included practice, preparation for the upcoming tournament by walking the course

backwards, and planning course strategy prior to the tournament. These descriptions fit well with Hiebert's (1983) suggested stressor management techniques related to increasing one's repertoire of coping skills and problem solving. The results support Slobounov and Yukelson's (1997) findings that practicing skills increases athletes' self-efficacy, which in turn positively affects performance. They also support Haney and Long's (1995) findings that past experience or past success can positively impact future performance.

The stress management techniques described by the golfers were either behavioral or cognitive strategies. They used these strategies in an attempt to manage the behavioral, cognitive, physiological and affective responses they had to the stressful situation. The stress reactions will be discussed in relation to the stress management techniques that the golfers described. All of the golfers described using an integrated approach of cognitive and behavioral techniques in an attempt to manage their stress.

The most common behavioral reaction described by the golfers was an increase in their pace of play. Some described the increase in pace in terms of swinging the club faster and altering the pace or timing of their swing. Others described the increased pace as recognizing that they were walking faster and talking faster as they played. These descriptions were similar to Hiebert's (1983) association of behavioral stress reactions to hyperactive behaviors, and the description by Malec et al. (2000) of walking, talking, and eating faster under stress. The golfers also described a loss of muscular control or feeling while they were swinging, which often led to a loss of swing control for the golfers. One of the golfers described this loss of feeling as if she was having an "out of body

experience," as if she knew that her body was swinging but had no control over how she was swinging.

The descriptions given by the golfers as to how they attempted to control this increased pace included relaxation strategies and anxiety management strategies, such as deep breathing, stretching, and trying to walk, talk and move slower. These strategies are similar to those described by Hiebert (1983) as productive behavioral stress management interventions. They are also similar to the responses given by elite figure skaters in their descriptions of coping with physical or psychological demands or stressors (Gould, Jackson & Finch, 1993).

Physiologically, the golfers described increased muscle tension and signs of stress such as having "butterflies" in their stomachs or their stomachs churning, shortness of breath, increased heart rate, sweaty palms, and feeling "shaky." The golfers discussed how the physiological reactions, in particular the muscle tension, affected their swing stance and their golf swings. Stress management strategies used by the elite amateur and professional golfers to cope with the increased physiological arousal included relaxation, slowing down, and stretching. These are considered beneficial physiological stress management interventions by Hiebert (1983) and are consistent with Gould, Jackson & Finch's (1993) findings.

The cognitive responses to stress described by all of the golfers included a description of being worried. While some of the golfers worried about their performance, others worried about their final score or how their play was affecting their overall ranking. Some of the amateurs worried about making the National team, while some of the professionals worried about making a cut or "keeping their card," which allows them

to play on the LPGA tour the following year without having to qualify for each tournament. The amateurs also discussed thinking negatively about all of the bad things that might happen or had happened, versus focusing on the positives that had happened and could happen in the future. The responses about worry and negative thinking illustrated that the golfers, when under stress, weren't focusing on the task at hand but were focusing on the possible negative outcomes.

Hiebert (1983) suggested that pro/con monitoring, positive self-talk, and thought stopping are effective cognitive techniques for controlling stress. The golfers mentioned using all three cognitive techniques. Hiebert (1983) described pro/con monitoring as looking at the "pros" within a situation and comparing them with the "cons" or negative of that same situation. The researcher termed this type of thinking "rational thinking," referring to taking a rational perspective of oneself and golf. For example, one golfer mentioned "I could be working in an office right now." "Rational thinking" was included with "positive self-talk" in the second order theme of "positive thinking." Thought stopping and visualization strategies were combined into the second order theme of "cognitively focusing on the task at hand." Again, these findings were consistent with Gould, Jackson and Finch's (1993) finding that elite figure skaters used rational thinking and positive self-talk to cope with psychological demands. The need to focus on the task at hand was mentioned by all of the elite amateur golfers and the professional golfers. A well-practiced, consistent pre-shot routine that includes focusing strategies is important for competitive golfers to use in order to be "in the moment" while swinging at the ball.

There was a distinction between the amateur golfers and the professionals when they discussed their affective or emotional responses to stress. The need for the

professionals to use the stress management techniques on an on-going, global basis was a major distinction between the elite amateur golfers and the professionals. All of the professionals discussed having to put the game of golf into perspective within their lives and having to get used to living away from their social support systems. All of the professionals also discussed facing the realities of their own personal shortcomings and having to play golf for themselves, in order to deal with all of the external pressures placed on them. The professionals also described more intense emotional reactions when they did become stressed than did the amateurs. The feeling of isolation and the constant pressure to perform well that the professionals described may result in their more intense emotional reactions to the stressors that they face. These results are similar to those of Gould, Jackson, and Finch (1993), who found that 71 percent of elite figure skaters experienced more stress after winning their title than before. These comments made by the professionals illustrate the need for a strong social support network to be in place for these elite golfers.

According to Hiebert (2000), people who have a strong social support network are far less likely to be overtaxed by the demands they face. The golfers who feel that they have a strong social support network, therefore, would be better equipped to focus solely on their game of golf and hitting the golf ball than the golfers who do not feel that they have a strong social support network. This is a key finding that must be taken into consideration by professional golfers and elite amateur golfers attempting to make the transition to professional golf. Professional golfers may have a supportive network of people in their home or family life. However, most families do not travel together to tournaments, and dealing with the separation from family was a major source of stress for

the professionals. Therefore, it seems important that professional golfers develop a strong social support network or "team" while traveling and competing. Having a regular caddie who travels to each tournament with the golfer would provide on-course stability and support. A playing "buddy" who can support the golfer off course while still competing on-course would also be helpful. This might be a player at a much higher or much lower level than the golfer, to minimize the competitiveness between the two golfers. A coach and/or a sport psychologist who travels to offer support would also increase the size and strength of the social support network.

Implications for Counselling Elite Athletes

Athletic performance enhancement has moved from an initial personality-based approach to a more cognitive-behavioral paradigm (Whelan et al., 1991). Consistent with this learning-based cognitive-behavioral perspective, investigators and practitioners have emphasized the assessment and development of sport-related psychological skills rather than invariant personality traits.

Elite athletes must cope with the physical and emotional requirements of their competitive sport. As illustrated in this research, athletes live in a complex world that makes many demands on their time and energy apart from the demands for sport performance. In order to integrate these various environments, a variety of behavioral and cognitive skills are required for successful performance.

There is evidence that cognitive-behavioral interventions can positively impact athletic performance (Feltz & Ewing, 1987; Mahoney & Avener, 1977; Orlick & Partington, 1988). These interventions have focused on goal setting, arousal management, and pre-competition planning. This study illustrates that, although the golfers used the

above techniques, other factors affected their performance, and thus the golfers used a larger variety of stress management techniques.

Because each individual athlete has his or her own perception of stress, psychologists who work with athletes should be aware of the athlete's appraisal of the competition. Several performance intervention studies have examined athletes' use of positive self-statements or positive imagery, and have shown their effectiveness in reducing negative thoughts and feelings (Crocker, Alderman & Smith, 1988, Larsson, Cook, & Starrin, 1988, Smith & Ascough, 1985). Haney and Long (1995) suggest that interventions focusing on self-efficacy enhancement are particularly important in sport psychology, because mastery of an event will lead to enhanced self-efficacy.

When an elite athlete is feeling stressed solely because of performance factors while training and/or competing, interventional strategies may be appropriate, such as practice, arousal management, and pre-competition planning. These strategies are directly related to improving skill level and enhancing sport performance during practice and competition. In situations where the treatment is limited to sport performance, a cognitive-behavioral skill-building approach should be beneficial. This study illustrates, however, that sport performance is not dependent solely on an athlete's abilities to deal with acute performance stress. Performance is also affected by the complexity of the events occurring in the athlete's world. A systemic approach to working with individual athletes seems to be required. Athletes who present with performance issues may have other issues that are at the core of some of their performance difficulties. An approach based purely on performance would likely provide an overly narrow and restricted view

of these athletes, resulting in interventions that, while useful, do not address the broader issues and may not result in progress.

Rather than prescribing a pre-set, packaged routine for all athletes to follow, it is important for sport psychologists to explore how each individual athlete is affected by various environmental factors. Only then can they understand each athlete in his or her own context. A systemic approach to stress management takes into consideration all areas of an athlete's world, prior to implementing any interventions, and can help sport psychologists to develop a much more appropriate strategy for each individual athlete.

Implications for Counselling Elite Golfers

The elite female golfers who participated in this study perceived various situations, at various times throughout their season, as stressful. For example, some of the golfers felt stressed when they were not performing well, while others felt stressed because they had been playing well. Rather than having all golfers prepare globally for all anticipated stressful situations, the systemic approach to working with elite golfers would encourage each individual golfer to understand her unique stress reactions and have appropriate interventions in place in order to cope.

In this study, many of the golfers described stressors that were external to the actual round of competitive golf that they were playing. For example, all of the professionals spoke of dealing with the pressures of being away from home and their support systems for extended periods of time. It seems important that a sport psychologist working with an elite golfer should focus on the development of a strong social support network. Although a lack of social support was not evident as a source of stress for the elite amateurs, who felt they had support from their teammates and coach, the lack of

social support was an obvious source of stress for the professionals. Any elite golfer wishing to make the transition from playing as an amateur to playing as a professional would find developing a strong social support network important to future success.

Pre-packaged stress management approaches that deal with golf performance enhancement, although helpful, provide only information. A sport psychologist needs to spend time developing a trusting and open relationship with a golfer, in order to understand all of the systems affecting her. Rapport development is necessary for the sport psychologist to understand each golfer's unique perception of herself and her coping resources. The case conceptualization of understanding the nature of the client, the nature of the client's context, and the nature of the client's individual issues is important to the success of any counseling situation. These factors relate to the counseling processes of relationship building, problem exploration, skill building, social support, and self-management.

Golfers need to recognize stressful situations, along with their own individual responses to stress. If they are aware of potentially stressful situations in advance, they can be prepared (stressor management) to deal with the stressors as they arise. When elite golfers are faced with a stressful situation, or if stress responses occur throughout the tournament, they will be able to recognize the response and respond by using a well-practiced coping technique (stress management). It should, therefore, also be helpful to younger or amateur competitive golfers to follow a logical process while developing a stress management protocol.

This study underlines the importance of goal setting in the development of self-efficacy and performance success. Helping developing golfers to understand their current

skill levels and then set realistic and attainable goals would be an important first step. As amateur golfers begin to compete, they discover the situations in which they individually feel stress. Each individual golfer needs to become aware of her personal reactions (behavioral, emotional, physiological) to these stressors. Then practicing various coping techniques in response to the stressful situations would increase each golfer's ability to predict stressful situations and to respond to them in a positive manner.

The importance of having a social support network is one of the key findings in this research. Development of a social support network should begin early. As golfers develop and grow, they should focus on maintaining and continuing to develop broader social support networks in order to help them cope with the stressors and pressures of living complicated, complex lives while maintaining a positive focus on their sport.

Limitations of the Research

This qualitative study was designed to explore the sources of stress, stress responses, and coping strategies used by elite female golfers. The interview protocol was developed in order to gain information about their sources of stress, reactions (behavioral, physiological, cognitive, and emotional) to the stress, and coping strategies. The data from the interviews reflect the perceptions of the golfers about these topics at the time of the interview. It is unknown if these particular golfers would provide the same responses when asked the same questions on a different occasion. Therefore, the generalizability of the data is limited.

The interviews were planned to take place at a competitive tournament in order to decrease a possible time lag between a stressful event occurring and the interview itself. It was hoped that the golfers' memories of stressful events would be fresh if the

interviews were scheduled during the season and at a tournament site. It was also more practical and convenient to interview all of the golfers in one place over a pre-determined time period. Although access to the professional golfers during a tournament was easier, it also caused some difficulties. Poor weather during the tournament caused weather delays; the golfers came off of the course much later than anticipated, affecting the interviewer's schedule. Given the time and energy demands on these golfers, the amount of discussion time had to be limited to fit their schedules.

Interviews with the amateur golfers were scheduled over a two-day period at a major competition. Inclement weather prevented the researcher from attending, and instead these golfers were interviewed by phone when they returned home. Although the interviews with these golfers were not rushed, as they might have been at the tournament site, it was impossible to observe the amateurs' facial expressions or body language as they responded.

The participants in this study were limited to elite female golfers. The exclusion of males in this study does not imply that the sources of stress, stress reactions and coping strategies are not important for males. Due to the exploratory nature of this study, however, female golfers were used in order to prevent any possible confounding variables in understanding the nature of stress faced by elite golfers.

The sample size of this research does not allow for generalization across all elite golfers or to all elite athletes in other sports. This research was not intended to provide a generalization to other populations, but was merely an exploration of a topic that has not been previously researched.

Implications for Future Research

The results of this study have implications for future research into the sources of stress, stress responses, and coping strategies used by golfers. This qualitative study represents an introductory exploration into stress and elite female golfers and helped to reveal the stressors associated with the game of golf at this level.

Future research should focus on determining the sources of stress, stress responses, and coping strategies used by developing competitive female golfers. These golfers will not have had the same exposure to psychological training as the elite amateurs. Research could perhaps determine the more common or natural reactions to stress for the majority of golfers.

Future research should also address the sources of stress, stress reactions, and coping strategies of elite amateur and professional male golfers. Are there differences between elite male and female golfers as to their sources of stress and coping strategies? For example, lack of social support was a source of stress for female golfers. How important is the social support system to male golfers? At present, all golfers, male and female, are given the same types of interventions for dealing with competitive stress. Understanding common sources of stress, stress reactions and coping strategies for both male and female golfers would help to ensure the delivery of appropriate interventions for both populations.

Quantitative studies could be performed to explore the prevalence of certain types of stressors and the coping strategies most commonly used. Understanding the common sources of stress and the common coping strategies would help developing golfers to plan and prepare for those situations. Further insight is also required into the

development of alternative means or strategies for professional golfers to develop their social support network, and into the effect of a positive social support system on performance.

Conclusion

This study has explored the sources of stress, stress reactions, and coping strategies used by elite amateur and professional golfers. The results support Hiebert's (2000) view that stress is an individual response to a person's perception of his or her ability to cope with a situation. The golfers, although recognizing stress at different times and in different ways, used some common cognitive and behavioral strategies to deal with the stressful situations.

It is important for counsellors and sport psychologists working with elite golfers to understand that golfers are individuals who have complex lives away from the golf course. Based on a systemic approach to understanding each individual golfer and the external factors affecting that person's golf game, appropriate interventions can be tailored to the individual.

Athletes are taught from a young age that showing emotion may make them seem weak. The elite golfers who participated in this study were open, honest, and trusting enough to share some very difficult moments in their golfing careers with the researcher. Without their honesty and willingness to share, the depth and accuracy of the information gathered would have been compromised. The willingness of the elite golfers to share their stories has provided a base from which effective and appropriate stress management interventions may be developed. All of the golfers who participated in this study spoke openly and honestly about very stressful experiences during a competitive round of golf.

They described in detail their sources of stress, stress reactions, and coping methods. The elite amateurs and the professionals were very similar in most of their responses. A few differences were recognized between the two groups: the lack of social support in the lives of the professionals, the intensity of the emotional response described by the professionals, and the need for the professionals to keep the game of golf in perspective in their lives.

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Appendix A

Interview Questions

To identify competitive stressors:

1. "In reflecting on previous competitive games this season in which you played, think about situations or events that were particularly stressful. Now think of those stressful events on a scale, with 1 being the least stressful and 10 being the most stressful. Which stressful event(s) from your competitive rounds would you rate an 8, 9, or 10?
2. At what time during the season did this stressful event take place?
3. How did you feel when entering the particular competition in which this event took place? For example, what was your mood?
4. How prepared were you?
5. Describe the stressor and how you reacted to it.

To assess the affective response(s) to the stressor(s):

6. What emotions did you experience as a result of the event?

To assess cognitive response(s) to the stressor(s):

7. What were your immediate thoughts as soon as you experienced the stressor?

To assess physiological response(s) to the stressor(s):

8. How did your body react as soon as you experienced that event?
9. How did you know that you were stressed?

To assess behavioral response(s) to the stressor(s):

10. What did you do, or what action(s) did you take, when you experienced that event?

To assess the effectiveness of the coping response:

11. Was your reaction to the stressful event – your coping technique – effective? Ineffective? Why or why not?

Note: Probing questions will be used where necessary.

Appendix C

Consent For Research Participation

I hereby consent to participate as a subject in the research project entitled "An Exploration of Sources of Stress and Coping Strategies Used by Elite Female Golfers," conducted by Jennifer Spriddle under the supervision of Dr. Kris Magnusson of the Faculty of Education at the University of Lethbridge. This project is a partial requirement for Jennifer Spriddle to complete a Master's degree. I understand that the study will involve an interview to discuss my perspective on the sources of stress I face during a round of competitive golf, along with how I cope with those stressors. The research project is expected to help clarify the links between the coping strategies that elite athletes use to manage stress, and the sources of stress they experience. The results of the research project will help enable sport psychologists to understand the coping strategies that are employed when different stressors arise. This information may assist applied sport psychology specialists in developing and implementing stress management programs.

I understand that my participation is completely voluntary and that I am free to withdraw from the study at any time, until I have verified the accuracy of my responses. Once I have verified the accuracy of my responses, the researcher will confirm my participation. If I confirm that the researcher may continue to use my data, the researcher may use it until the completion of the thesis.

The general plan of this study has been outlined to me, including any possible known risks. I understand that this project is not expected to involve any risk or harm. I also understand that it is not possible to identify all possible risks in any procedure but that all reasonable safeguards have been taken to minimize the potential risks.

I understand that my responses to the interview will be tape recorded and then transcribed. I also understand that all tape recordings and transcribed notes will be destroyed.

I understand that the results of this project will be coded in such a way that my identity will not be physically attached to the data. The key listing my identity will be kept separate from data in a file accessible only to Dr. Kris Magnusson and Jennifer Spriddle. The data will NOT be kept longer that five years upon completion of the thesis defense.

I understand that the results of this research may be published or reported to scientific groups, but my name will not be associated in any way with any published results. I also understand that I will be asked to participate in a validity check in order to have an opportunity to review the data and to alert the researcher to any inaccuracies prior to publication. I understand that I will be given an opportunity to receive individual feedback to my responses, and I have the right to inquire about the results of my interview at any time.