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TO CONTINUE PERFORMING WITH PAIN

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COPING STRATEGIES USED BY COLLEGIATE ATHLETES TO CONTINUE PERFORMING WITH PAIN

By

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ABSTRACT

COPING STRATEGIES USED BY COLLEGIATE ATHLETES TO CONTINUE PERFORMING WITH PAIN

By

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The purpose of this study was to determine (a)what coping strategies Division I collegiate athletes use to continue coping with pain while they are competing in an athletic event, (b) if male Division I collegiate athletes use different coping strategies than female Division I collegiate athletes when they are experiencing pain and are continuing to participate in an athletic event, (c) what motivational statements do Division I athletes use to cope with pain and persuade themselves to continue performing. Eleven athletes were interviewed individually using a 12 question semi-structured interview guide. Triangulation was used to sort the data using a bottom-top approach with axial coding following the analysis procedures as recommended by Patton (1990). The 11 highest order dimensions that captured how athletes reported coping with pain were: focus attention away from pain, confrontive coping (e.g. actively fight through the pain), psychological training (e.g. rely on training to continue performing), assessment of situation (e.g. assessment of the injury), cognitive dissonance, sustain confidence through self talk, fear for future, medical support, social support, distancing (e.g. wishful thinking), and miscellaneous. There was no gender difference found in the types of coping strategies used by the athletes or the number of coping strategies used by the athletes. There was no consistent motivational statement reported by the athletes.

DEDICATION

This thesis is dedicated to my loving and supportive parents,
Laurie and Jim, who always saw
my potential when others could not.

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Chapter 1
Introduction

"You are going to run into breaking things, you are going to run into spraining things, you are going to run into all that stuff. It is just something you have to go through to get to the top." (Sylvia)

"...forget the pain. Because that is the only way you can work through the pain. You just kind of ignore it once you decide to continue. I guess there was never an option for me to NOT continue..." (Jenny)

Part of the sport culture is learning to cope with pain while still performing. Athletes will tell you that "racing is pain". However, there is a large difference between general training discomfort and pain that is due to an injury. While training discomfort often occurs during. While watching a football game on television it is not unusual to see players injure themselves while they are competing. As sport becomes more competitive, the athletes continue to play or return to the game after a short period of time with the injury bandaged. When this "injury pain" occurs during competitions, athletes have two choices; they can cope with the pain and continue performing, or they can stop performing. Unfortunately, at the more elite levels of competition, withdrawing from competition is not perceived as an option for an athlete who is truly dedicated and wants to be "on top". Many athletes are being trained to continue performing and to deal with the pain when they are done. Therefore, athletes must find ways to cope with the pain so

that they can continue to perform to the best of their ability. The question raised in this study is, how do athletes cope with pain following an injury so that they are able to continue performing?

Even though previous research investigated how athletes coped with pain experienced during rehabilitation (Gould, Udry, Bridges, & Beck, 1997(a); Udry, Gould, Bridges & Beck, 1997), how athletes cope with the pain they experience performance is still unknown. An understanding of these coping strategies would provide the information needed to teach athletes effective strategies and eliminate the use of ineffective strategies. In addition to adding to the body of literature regarding effective coping strategies, the point at which athletes feel that they are not able to cope with the pain and they need to withdraw from the situation may also be learned. This information can help professionals (e.g. athletic trainers and sport psychologists) communicate to less experienced athletes when it is appropriate to stop this performance. It is important that we understand how athletes are able to cope with pain so that they can continue performing to the best of their ability, assuming it is medically safe for the athlete to compete. It is important to note, however, that the research in no way encourages performing when an injury has occurred. Pain should not be interpreted as a glorious sensation or a sign of honor. In all sporting events athletes will experience pain that is not indicative of a serious injury and does not require the athlete to stop. It is this specific pain experience that is central to this research study.

What is pain? Pain is not something that can be defined easily. For one athlete, excruciating pain may be having a hang nail. For another athlete, a dislocated shoulder may be a simple aggravation. The International Association for the Study of Pain

(IASPP; 1986, p.S217) defines pain as "...an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." This definition includes pain that is associated with obvious tissue damage as well as pain associated with mental disorders or disorders that are still not fully understood such as phantom-limb pain. It is important to recognize that there is a difference between pain and injury. While the two components may coexist, the terms cannot be used interchangeably. It is also important to recognize that there is a difference between training discomfort and pain. Due to the stress put on the body during physical activity, there is often some physical discomfort. However, this discomfort is not the same as pain. Pain has a variety of different levels that falls upon a spectrum and occurs when physical damage has been done to the body (an injury). The level of pain is then interpreted by the individual.

Due to the subjectivity of pain, it is difficult to measure the amount of pain a person is experiencing. "Subjectivity of pain occurs during the processing of pain signals that enter the brain and are mediated by the physical trauma of the injury and a host of psychosocial factors, such as past pain episodes and emotional responses to injury and pain" (Lindberg & Bluestein, 2002, p.30). Likert scales are often used to help the athlete communicate the amount of pain they are experiencing. However, each individual defines the levels on the scale differently. Therefore, the level of pain reported by the athlete does not tell us the severity of the injury, only the severity of the sensation being experienced. It is, however, important to note that it is the perception and interpretation of the pain that affects the athlete's cognitive processes and not the actual injury. For the

purpose of this study, pain will be defined as any sensation that exceeds normal training discomfort and has the potential to impact the athlete's performance.

Through their experiences, many athletes have learned that they must continue playing through pain in order to continue being accepted by the team and to continue competing. Weiss and Troxel (1986) discuss the pressures that coaches intentionally and unintentionally place on athletes in regards to injuries. While most coaches will agree that an athlete's health should always be the first priority with the sport being the second, they do not always demonstrate these beliefs in their actions. Weiss and Troxel reported one coach's response to injured athletes, "ignoring the athlete, not finding the time to console and encourage him or her, and constant questions as to when the injured athlete will return to practice directly and indirectly communicate to the athlete the coach's main concern" (p.106). If an athlete has not experienced this interaction with a coach in the past, he/she has most likely experienced it vicariously through another teammate. For many athletes, the message is clear, namely, if athletes want playing time and respect, they must find a way to compete while in pain.

One aid that athletes are given to help continue performing with pain comes from modern technology. Technological improvements have provided athletes, coaches, and athletic trainers with a much better understanding of the human body and how to improve performance. For example, new braces, medicines, and preventative strengthening techniques are being developed to aid athletes in their quest to continue performing. While the technology helps with the actual injury, there is still the psychological aspect of coping with the pain. Aids are not always able to completely erase the pain, especially when athletes place a great deal of physical demand on the injury while they compete.

Therefore, athletes must rely on their ability to psychologically cope with the pain if they want to continue performing. When athletes (e.g. cross country runners) become injured in the middle of a performance they do not always have the opportunity to stop and gain medical aids. Athletes that choose to continue performing and seek medical attention after their competition can only rely on their coping skills and athletic abilities.

Lazarus and Folkman (Folkman, 1984; Folkman & Lazarus, 1980; Folkman & Lazarus, 1985; Folkman & Lazarus, 1988; Lazarus & Folkman, 1984) are two individuals who have provided conceptual direction as well as lead the research on coping strategies. Through their research, they have identified numerous coping strategies that are used by individuals in a variety of settings. The strategies can be divided into two main categories, problem focused and emotion focused. A problem focused strategy is one employed to change the problem that is causing distress into a better situation. Emotion coping is used in an attempt to regulate distressing emotions (Folkman & Lazarus, 1985). Eight main coping strategies have been identified within emotion-focused and problem-focused coping. The categories include confrontive coping, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving, and positive reappraisal. Planful problem solving and confrontive coping are considered problem-focused techniques. The remaining techniques, distancing, escape-avoidance, accepting responsibility or blame, self-control, seeking social support, and positive reappraisal, are considered emotion-focused coping techniques (Folkman & Lazarus, 1988). While individuals use a variety of different techniques to cope with a situation, Lazarus and Folkman (1986) state that these techniques can all fall under one of the previously listed eight categories.

Lazarus and Folkman's (1986) research has suggested that when an individual is faced with a stressful situation, they will perform two cognitive processes. First, an individual will engage in cognitive appraisal. During the primary cognitive appraisal, the individual will "evaluate whether he or she has anything at stake in this encounter" (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986, p. 993). In other words, individuals will determine if they are in harms way whether it be physical or psychological pain. For example, upon experiencing pain, athletes would attempt to determine the cause of the pain (e.g., bruise, sprain, fracture) and would then determine if the pain was putting them at physical risk (e.g., are they injured seriously enough to stop participating). Once the athletes have determined that the pain they are experiencing is new, different, or more intense than usual, secondary appraisal will occur. During the secondary appraisal, the individual "evaluates what if anything can be done to overcome or prevent harm or to improve the prospects for benefit" (Folkman et al., 1986, p. 993). In other words, individuals attempt to cope with the situation in a manner they feel fits the situation (Folkman et al., 1986). For example, following injury, athletes may withdraw from the competition in order to prevent future injury or they may try to cope with the pain and continue to perform.

Folkman and Lazarus (1985) have also found that while individuals characteristically cope with particular situations in the same manner, coping is a process. The mind is constantly processing a situation and determining how to cope with the situation. Often, an individual will actually change coping strategies as the stressor progresses. An athlete who suddenly experiences pain may catastrophize the intensity of the pain and remain fixated on the pain. As the pain starts to become familiar to the

athlete, he or she may change to a different coping strategy to meet the needs of the situation. Instead of focusing on the pain as he/she did when the pain was initially experienced, the athlete may choose to ignore the pain entirely or focus on something else. Towards the end of the athletic event, the athlete may start to refocus on the pain as a means of motivation to finish the event strong. Folkman and Lazarus (1985) found that during a stressful exam period, "subjects used combinations of most of the available forms of problem-focused coping and emotion-focused coping at every stage of the exam" (p.150). While athletes are not exactly in a test situation, the pressure to perform well and finish the performance can be very similar to that experienced during an exam. Therefore, athletes may also apply a variety of problem-focused and emotion-focused problem solving strategies in order to continue performing with pain.

Lazarus et al. (1986) have also found that what is at stake can greatly affect the coping strategy that the individual used. Specifically, they found that not only was coping strongly related to the coping appraisal, but that the strategies that were chosen by the individuals were based on the options they had available and what was at stake. Similarly, other researchers have found that how individuals cognitively appraise a situation, affects the coping strategy they apply (Anshel, Jamieson, & Raviv, 2000; Folkman & Lazarus, 1985; Gould, Ekulund, & Jackson, 1993). For example, athletes in a championship game may cope with pain very differently than they would if they were at practice. Athletes could identify two factors that would determine how much is at stake. First of all, as previously discussed, the athlete may feel like he or she does not have many options to stop playing due to the social pressure to continue. Athletes may feel that if they stop performing during a competition, they will lose their spot on the team.

This would limit their coping strategies. Athletes would also have to evaluate what was at stake with the particular event. Will it make a difference if they choose to continue to perform or to stop? A championship game has a lot more at stake than a practice. While considering what is at stake with their performance, athletes cognitively appraise the pain. Based on their appraisal of the pain and what they feel is at stake, athletes then choose a coping strategy.

There have been many studies done to understand how athletes deal with stressful situations encountered during their athletic careers (Anshel, 1996; Anshel, Jamieson, & Raviv, 2001; Anshel & Kaissidis, 1997; Anshel, Porter, & Quek, 1998; Anshel & Wells, 2000; Anshel, Williams, & Hodge, 1997; Anshel, Williams, & Williams, 2000; Crocker & Graham, 1995; Goyen & Anshel, 1998). Some of these stressful situations are a bad call from a referee (Anshel & Delany, 2001; Anshel, Jamieson, & Raviv, 2001; Anshel & Kaissidis, 1997), or missing a key shot (Anshel, Jamieson, & Raviv, 2001; Anshel & Kaissidis, 1997; Anshel, Porter, & Quek, 1998; Crocker & Graham, 1995). Gould, Eklund, and Jackson (1993) found that Olympic wrestlers did not use one single approach to deal with a variety of different stressors, but instead used a complicated process where they would often combine a variety of different processes. This information supported Lazarus and Folkman's (1986) findings and suggests that when an athlete experiences pain during a performance, they will not use one coping strategy, but instead will use a variety of different strategies throughout the situation. However, Anshel and Delany (2001) found that when athletes faced a stressful situation such as a bad call from the referee, they tended to use negative coping appraisal. They would then continue by using avoidance coping strategies. It was only during times that they received positive

appraisal that they would use approach coping. They found this to be consistent for both males and females. This would suggest that athletes use few strategies that are dependent on the stressor.

One influential variable that created the difference in Anshel and Delany's (2001) research compared to Gould, Eklund, and Jackson (1993) is that Anshel and Delany were looking at youth sports competitors. The lack of experience may hinder the younger athletes' ability to cope with the situation effectively. If coping is a process as suggested by Folkman and Lazarus (1985), then it would most likely develop and improve with practice. Collegiate athletes that are faced with pain may have experienced similar pain while competing before. Thus older, more experienced athletes have a greater a repertoire of experiences with the pain than novice athletes.

There are a few studies that address pain and high-risk activities. Meyers, Bourgeois, and LeUnes (2001) looked at how rodeo participants who are at a high risk of injury dealt with the thought they might become injured. It was found that top-ranked athletes tended to rank higher in avoidance coping techniques when compared to lower-ranked participants. This supports the findings of Meyers, Bourgeois, Murray, & LeUnes (1993) that suggested that the strategies an athlete uses to address pain may subsequently be reflected in the athletes' level of performance. Athletes that competed in high-risk activities were not as likely to use catastrophizing as a coping technique when compared to individuals who competed in low-risk activities. While this study is similar to the one being proposed, the researchers (Meyers, Bourgeois, & LeUnes, 1992) investigated how the athletes dealt with the thought of injury and not how they dealt with the actual pain at the moment of injury.

Other studies that looked at season ending injuries were focused on the strategies the individual used over a long period of time and how these strategies helped the individual recover (Gould, Udry, Bridges, & Beck, 1997a, 1997b; Udry, Gould, Bridges, & Beck, 1997). Skiers who had suffered from a season-ending injury reported seven higher order categories for coping. The most common coping approaches were driving through, distracted self, managed emotions and thoughts, sought and used social resources, avoidance and isolation, took notes, and drew upon lessons learned (Gould et al.,1997a). While these strategies were addressing pain and stressful situations, they were not looking at the coping strategy used at the exact moment of injury nor were they looking at how the athletes were able to continue performing. Instead, these studies focused on how the individual dealt with the recovery process. Clearly athletes will experience pain during the recovery process. What is not known is whether athletes use the same coping strategies to get through the pain they are experiencing while they are recovering as they do when they initially experience the pain.

When individuals initially become injured or start to experience pain, there is more than just the physical sensation present. The athletes are surrounded by a variety of different stimuli stemming from the athletic situation in which they find themselves. They have to decide quickly if they are going to continue to perform or just stop. In a pilot study (Fraser, 2002) done on collegiate figure skaters, one of the main points the skaters made about coping with pain had to do with their understanding of the situation. If the skaters did not recognize the pain or could not identify the cause of it, they reported that they were much more likely to pay attention to the injury or stop skating. To them, the undefined cause was a large added stressor that changed their coping strategy.

When injured athletes are in pain during the recovery phase, there is an understanding of the pain based on experience. They know what is causing the pain and are able to process the information. Athletes that suddenly start to experience pain while performing do not always have this luxury. Udry (1997) suggested that the coping strategies an individual uses may significantly change at the time the individual seeks medical treatment. Based on her study looking at individuals recovering from knee surgery, Udry found that the most commonly reported strategy was instrumental coping skills. However, she points out that her research, along with most other researchers, has focused on the coping strategies used after one has sought medical attention. She suggested that before individuals seek medical attention they may use fewer instrumental coping skills and instead use negative emotion, distraction, and palliative coping strategies. While Udry suggests that individuals use different coping strategies before seeking treatment, there is no known research to support her statement.

Previous literature has identified a variety of variables that may affect the coping technique the individual chooses to use. One of the most commonly noted variables is gender. Study after study has suggested that males and females tend to cope with stressful situations in different manners (Anshel, Porter, & Quek, 1998; Crocker & Graham, 1995; Keogh & Herdenfeldt, 2002; Meyers, Bourgeois, & LeUnes, 2001; Ptacek, Smith, & Dodge, 1994; Smallman, Sowa, & Young, 1991). In general, females tend to seek social support and use emotional coping as their main coping technique. Males, on the other hand, have been reported to use problem-focused techniques more (Ptacek, Smith, & Dodge, 1994). Some researchers, including Ptacek, Smith, and Dodge (1994) have suggested that athletes are taught through social interactions how to cope

with difficult situations. From a young age, females are taught to rely on others and are told that it is okay to be emotional. However, males are taught that being emotional is not acceptable. It is with this belief that the Ptacek et al. credits the existence of gender differences in coping responses. How gender differences are transferred to the coping strategies applied to performance with pain is not known. Also, it is not clear if the athletes are being taught how to cope with pain at the moment of injury. If Ptacek et al. are correct, it is very possible that the athletes are also being socialized to cope with the pain through experience from the injury. For these reasons, this study has chosen to use both males and females.

A second variable that has been found to affect the manner in which individuals cope with pain is the actual onset of the pain. Because of the numerous added stressors such as physical discomfort and uncertainty, individuals may cope with pain at its onset in a different manner than they would after they had been diagnosed with an injury. The fact that we do not know how athletes cope with pain at the moment they first experience it, limits us in our abilities to help teach the athlete ways to assess effectively and cope with pain.

Self-talk is one strategy an athlete can use to cope with a stressful situation. Self-talk is simply the thought processes that occur inside one's head. While self-talk can be categorized in many different ways, it is commonly referred to as positive or negative self-talk. Positive self-talk is when the athlete says a word or a phrase that is either motivational or instructional. These statemens can serve the athlete in a variety of ways including motivating the athlete, enhancing self esteem, creating mood and focusing attention (Weinberg & Gould, 1995). Because self-talk serves all of these functions, it

may also serve as a coping strategy to deal with pain. Athletes may use positive self talk in order to motivate themselves to continue performing. For the particular population being interviewed, the researcher chose to use the words "motivational statement" in order to gain a better understanding of what positive self-talk the athlete used.

A variety of measuring devices have been constructed to analyze coping strategies. For example, the Multidimensional Assessment of Coping assesses three different coping styles: task-oriented, emotion-oriented, and avoidance oriented (Endler & Parker, 1990). While there are a variety of different coping scales to measure constructs unique to each theory, there is not a theory or assessment instrument that addresses the coping strategies used when an injury first occurs. While the COPE survey (Carver, Scheier & Weintraub, 1989), Ways of Coping, Revised (Folkman & Lazarus, 1985), Athletic Coping Skills Inventory (Smith, Schultz, Smoll & Ptacek, 1995), the Multidimensional Assessment of Coping (Endler & Parker, 1990), and Sports Inventory for Pain (Meyers, Bourgeois, Stewart, & LeUnes, 1992) exist as measurement tools, they are not capable of measuring the manner in which athletes cope at the moment of the pain's onset. All of the previously mentioned surveys suggest coping strategies are applied over a long period of time or are used after the individual has had time to think about the situation. Athletes that suddenly experience pain while performing do not have a great deal of time to process the situation if he or she chooses to continue performing. In order to fill this void in the literature as well as facilitate the development of additional measurement tools, a qualitative study is necessary. It is not possible to create a survey based on the little information we have about the coping strategies used by athletes at the moment they experience pain. Through the use of interviews, the athletes will be able to

provide a better understanding of what coping strategies they apply and what coping strategies they have found to be unsuccessful.

Therefore, the purpose of this study is to gain a better understanding of the different coping strategies that college-aged athletes use to cope with pain at the moment of onset so that they can continue to participate. The study also looks to see if male athletes use different coping strategies than female athletes when they experience pain during a performance.

The study addressesthree research questions. The first research question is, what coping strategies do Division I collegiate athletes use to continue coping with pain while they are competing in an athletic event? The second question is, do male Division I collegiate athletes use different coping strategies than female Division I collegiate athletes when they are experiencing pain and are continuing to participate in an athletic event? The final research question is, what motivational statements do Division I collegiate athletes use to cope with pain and persuade themselves to continue to perform?

Chapter 2
Literature Review

Today, athletes are taught both directly and indirectly, that they are to continue practicing and performing through pain. Not only are the athletes expected to continue performing, they are expected to perform well, while not altering their typical motions. How do athletes cope with pain so that they can continue to perform at expected levels? Early investigations of coping have relied heavily on the work of Lazarus and Folkman who have spent a lifetime researching the coping process. One premise of Lazarus and Folkman (1984) is that life does not stop when individuals experience a traumatic event. Instead, life continues and individuals must provide themselves with a strategy to help them to continue. In fact, the word coping implies that individuals must find ways to manage their response to the event while continuing with their daily lives. Within the sport world, the investigation of coping with pain has evolved into several sport-specific models that provide insight into why athletes respond differently when they experience pain or become injured. Most of the research to date has focused on either personal factors that predispose athletes to being injured or personal factors that influence how the athletes respond to being injured and/or their rehabilitation. There is, however, a lack of literature regarding how athletes cope with pain so that they may continue to perform in their athletic event. This review will address the work of Lazarus and Folkman along with other research regarding coping in order to set the stage for investigating the coping strategies used by athletes in order to continue to perform while in pain.

Transactional-Process Perspective

In 1984, Lazarus and Folkman proposed their transactional-process coping perspective. Folkman and Lazarus (1988) defined coping as "cognitive and behavioral

efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 310). The definition has three key features. Firstly, the definition is not based on a trait approach. Therefore, it does not focus on how the individual usually responds to the stressor. Instead, the definition is process-oriented meaning that "it focuses on what the person actually thinks and does in a stressful encounter, and how this changes as the encounter unfolds" (Folkman, Lazarus, Dunkel-Schetter, Delongis, & Greun, 1986, p. 993). Emphasis is placed on people being able to change strategies depending on the situation. The second key factor is that coping is seen as revolving around the context of the situation. How individuals appraise the demands of the situation and what coping strategies they have available to them will determine what coping strategy they choose to apply. Therefore, it is the individuals' personal variables along with situational variables that combine to create the coping effort. The last important aspect of the definition is that Folkman and Lazarus do not define a good or bad coping strategy. It does not matter if individuals are successful in their attempts to cope with the situation. The definition refers only to what individuals attempt to do to manage the stressful situation (Folkman, Lazarus, Dunkel-Schetter, Delongis, & Greun, 1986).

Lazarus and Folkman's (1984) research has suggested that when one is faced with a stressful situation, he or she will perform two cognitive processes. First, an individual will engage in cognitive appraisal. During the primary cognitive appraisal, the individual will "evaluate whether he or she has anything at stake in this encounter" (Folkman et al., 1986, p. 993). In other words, individuals will determine if they are in harms way, whether it be physical or psychological. For athletes, upon experiencing pain they would

attempt to determine the cause of the pain (e.g., bruise, sprain, fracture) and would then determine if the pain was putting them at physical risk (e.g., are the injuries serious enough to stop participating). Once the athletes have determined the pain they are experiencing is new, different, or more intense than usual, secondary appraisal will occur. During the secondary appraisal, the individual "evaluates what if anything can be done to overcome or prevent harm or to improve the prospects for benefit" (Folkman et al., 1986, p. 993). In other words, individuals attempt to cope with the situation in a manner they feel fits the situation (Folkman et al., 1986). Athletes in pain have many options to choose from including stopping, changing their race strategy, or manipulating their skill mechanics to decrease the pain.

Individuals must also ask themselves, "how will the environment respond to my actions?" (Folkman & Lazarus, 1988, p. 310). For example, following a painful sensation, athletes may withdraw from the competition in order to prevent further injury or they may try to cope with the pain and continue to perform. The manner in which athletes interpret the situation will result in the coping strategies they see available (Folkman & Lazarus, 1988).

Encounters are interpreted by people in different manners. One athlete can interpret pain as a very threatening and detrimental experience while other athletes can interpret that it means they are working hard and are getting stronger. The way individuals appraise their relationship with the environment can be influenced by a variety of different variables. The main variables that are suggested by Folkman and Lazarus (1988) are "antecedent characteristics such as pattern of motivation (e.g., values, commitments, and goals), beliefs about one's self and the world, and recognition of

personal resources for coping such as financial means, social and problem-solving skills, and health and energy" (p. 310). The appraisal situation can also be influenced by variables pertaining to the environment, for example "...nature of the danger, its imminence, ambiguity, duration, and the existence and quality of social support resources to facilitate coping" (Folkman & Lazarus, 1988, p. 310).

Through their research, Folkman and Lazarus (1985) have identified numerous coping strategies that are used by individuals in a variety of settings. The strategies can be divided into two main categories, problem-focused and emotion-focused. A problem-focused strategy is one employed to change the problem that is causing distress into a better situation. Emotion-focussed coping is used in an attempt to regulate distressing emotions (Folkman & Lazarus, 1985). If the individual believes that the situation can be changed, a problem-focused strategy is more likely to be applied. However, if the individual does not believe the situation can be changed or controlled, an emotion-focused coping technique will more likely be applied (Folkman & Lazarus, 1988).

Studies have shown that individuals use a variety of different coping strategies and will include both emotion-focused and problem-focused coping strategies. Folkman and Lazarus' (1980) research involved one hundred middle aged men and women who were asked to report stressful events for a year's time. The participants used both functions of coping for 98% of the 1, 300 stressful events that were reported. Similar findings were found when college students were asked to report on their coping strategies before, during, and after a midterm exam. Ninety-six percent of the students reported using both forms of coping techniques (Folkman & Lazarus, 1985).

Eight main coping strategies have been identified within emotion-focused and problem-focused coping. The eight main categories that Folkman and Lazarus have identified are confrontive coping, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving, and positive reappraisal (Folkman & Lazarus, 1988). Planful problem solving and confrontive coping are considered problem-focused techniques. The remaining techniques, distancing, escape-avoidance, accepting responsibility or blame, self-control, seeking social support, and positive reappraisal, are all considered emotion-focused coping techniques.

The two coping strategies that are identified as problem-focused, planful problem solving and confrontive, attempt to actively change the situation for the better. Planful problem solving is when an individual tries to create an approach to not just avoid the problem, but to develop a plan of action that might solve the problem (Folkman et al., 1986). An example of planful problem solving for a swimmer who has injured her shoulder and is experiencing pain would be to change the mechanics of the stroke she is performing to alleviate the pain as much as possible. Confrontive coping is when the individual directly addresses the problem. It often relates to speaking to a person, or expressing frustrations about the problem that is causing distress. It can also include taking a risk or trying something that probably will not be successful, but is worth trying (Folkman et al., 1986). An example of confrontive coping for an athlete in pain would be venting frustrations about the pain to his athletic trainer and discussing alternatives to managing the pain.

The emotion-based coping strategies do not focus on fixing the actual problem as much as they do on making the individual feel better. Distancing is when the individual

tries to pretend the problem is nonexistent or tries to ignore it. Some of the approaches athletes might try are pretending the event never happened, not letting it get to them, making light of the situation, or looking for a silver lining (Folkman et al., 1986). An example of distancing for gymnasts is to continue doing the designated floor routine as if there was absolutely no pain in their body and they felt like they were completely in rhythm with their performance. Escape-avoidance coping can involve many different approaches. A few of the techniques used in escape-avoidance coping are to avoid people, take it out on other people, sleep more, hope for a miracle, and refuse to believe the event even happened. A common approach used by athletes before and after competing is to try to make one's self feel better through food, alcohol, and drugs (Folkman et al., 1986). A long distance runner who is experiencing pain may use escape-avoidance coping by praying that the injury will suddenly disappear. Accepting responsibility is when people blame themselves whether it was their fault or not. People may apologize, promise to themselves that it will never happen again, lecture themselves, or simply acknowledge that they brought the problem on themselves (Folkman et al., 1986). A wrestler who experiences pain may blame himself for not being strong enough and not physically training enough to go up against his opponent. Self-control coping is an attempt to control one's emotions. People using a self-control approach might keep emotions to themselves, try to keep all options open, try not to let their emotions interfere with other things, plan what they will say and think about how an individual they admire might handle the situation (Folkman et al., 1986). A gymnast who is experiencing pain may focus on keeping a smile on her face so that the audience does not see she is in pain. She may also think about how her role model would handle the situation.

Social support coping is when the individual talks to someone in order to help alleviate the problem. One can ask someone they respect for advice, talk to someone who could help alleviate the problem, accept sympathy from someone or even seek professional help (Folkman et al., 1986). A long distance runner who is experiencing pain may talk with another runner about the pain he/she is experiencing. He/she may even ask for advice on how to decrease the pain. The last approach is positive reappraisal. Positive reappraisal is when an individual looks back at the stressful situation and finds the positive aspect of it. People may say that it made them a better person, they found a new faith, rediscovered what was important in life, or changed something about themselves (Folkman et al., 1986). A swimmer who is experiencing pain may tell herself that if she continues to perform she is making herself a stronger, better, more competitive athlete. She may go as far as to use a common motivational statement, e.g., "pain is weakness leaving the body", as a means of reappraisal.

The coping process is ever changing depending on the continuous appraisals and reappraisals of the situation. Folkman and Lazarus (1985) have also found that while individuals characteristically cope with particular situations in the same manner, coping is a process. The mind is constantly processing a situation and determining how to cope with the situation. Often an individual will actually change coping strategies as the stressor progresses. The person-environmental relationship is constantly being appraised by the individual as it continues to change. The relationship change could occur for two different reasons. First, the environment may continue to change independent from the individual's actions. This would leave the individual with no control over the situation. At the same time, an individual may see a change in the person-environment relationship

due to his or her own actions. The coping process that the individual chose in order to alter the situation that is causing the distress may help the individual regulate his or her distress or even alleviate the stress (Folkman & Lazarus, 1988). Athletes who suddenly experience pain may catastrophize the intensity of the pain and remain fixated on the pain. As the pain starts to become familiar to athletes, they may change to a different coping strategy to meet the needs of the situation. Instead of focussing on the pain as they did when they first experienced the pain, athletes may choose to ignore the pain entirely or focus on something else. Towards the end of the athletic event, athletes may start to refocus on the pain as a means of motivating themselves to finish the event strong. Folkman and Lazarus (1985) found that during a stressful exam period, "subjects used combinations of most of the available forms of problem-focused coping and emotion-focused coping at every stage of the exam" (p.150). While athletes are not exactly in a test situation, the pressure to perform well and finish the performance can be very similar to that experienced during an exam. Therefore, athletes may also apply a variety of problem-focused and emotion-focused problem solving strategies in order to continue performing with pain.

Lazarus et al. (1986) have also found that what is at stake can greatly affect the coping strategy that the individual uses. Specifically, they found that not only was coping strongly related to environmental appraisal, but that the strategies that were chosen by the individuals were based on the options they had available and what was at stake. Similarly, other researchers have found that how individuals cognitively appraise a situation affects the coping strategy they apply (Anshel, Jamieson, & Raviv, 2000; Gould, Eklund, & Jackson, 1993; Folkman & Lazarus, 1985). For example, athletes in a

championship game may cope with pain very differently than they would if they were at practice. Athletes could identify two factors that would determine how much is at stake. First of all, as previously discussed, the athlete may feel like he or she does not have many options to stop playing during a competition due to the social pressure to continue. Athletes may feel that if they stop performing during a competition they will lose their spot on the team. This would limit the perceived available coping strategies. Athletes would also have to evaluate what was at stake with the particular event. Will it make a difference if they choose to continue to perform or to stop? A championship game has a lot more at stake than a practice. While considering what is at stake with their performance, athletes cognitively appraise the pain. Based on their appraisal of the pain and what they feel is at stake, athletes then choose a coping strategy.

The individual will analyze the success of their coping strategy in two different formats, the immediate outcome and the overall judgement. When analyzing the immediate outcome, the focus is placed on how successfully the encounter was resolved. If the coping strategy was effective in reducing the stress or pain, then the encounter was resolved completely. The second analysis looks more at the long term aspect. It is based on the individual's values and goals as well as his or her expectations in regards to the stressful encounter. For example, if athletes know that they could not make the pain go away but thought the technique they chose helped to cope with the pain as much as possible, then they may consider it a positive outcome. At the same time, athletes may use a technique that makes it so they do not feel the pain but they may not look back on the event as positive. If the event was "inconsistent with other values and goals, less than what the person thought could be achieved or creates additional conflict in the person's

social context" (Folkman et al., 1986, p. 993), he/she may view the situation as negative. So, the athletes that are able to tune out the pain may look back at the situation negatively if it caused them a serious injury that made it so they could not continue competing for the rest of the season. Their inability to compete for the rest of the season would be counter to their values.

Athletes Coping with Stressors

Many studies have examined the different coping strategies athletes' use when faced with a variety of different stressful situations. Two hundred and thirty-five competitive, male and female athletes who competed in football, volleyball, hockey, basketball, soccer, track and field, and wrestling were asked to complete a series of scales primarily based from the COPE instrument. Participants were recruited from regional, provincial, university, junior national, and national teams and ranged from 15 to 30 years of age. Athletes were asked to recall a situation they had experienced recently in practice or a game where they felt they were experiencing difficulties in their performance or were under pressure to perform. The athletes were then asked to answer the questionnaire based on this experience. The coping strategies that the athletes reported using the most were increasing effort, suppressing competing activities, active coping, and self-blame (Crocker & Graham, 1995). In a qualitative study, Gould, Finch, and Jackson (1993) asked seventeen U.S. National Champion figure skaters what coping techniques they used to handle stressful situations. The skaters ranged from 18 to 33 years of age and included both males and females. At least 40% of the skaters reported using rational thinking and self-talk, positive focus and orientation, social support, time management and prioritization, precompetitive mental preparation and anxiety

management, training hard and smart, isolation and deflection, and ignoring the stressor. Of all the techniques, the most commonly reported coping technique was rational thinking and self-talk. Seventy-six percent of the skaters reported using it. In a similar study (Gould, Eklund, & Jackson, 1993), Olympic wrestlers were asked how they coped with stress throughout the Olympic Games. All 20 members of the 1988 United States Wrestling team participated in the research study. During their in-depth interviews, the wrestlers reported using thought control, task-focused strategies, behavioral-based strategies, and emotional control strategies. Similar to the study of figure skaters (Gould, Finch, & Jackson, 1993), thought control was the strategy that was sited as being used most often by the wrestlers. The wrestlers reported using the other three categories, task-focused, behavioral-based, and emotion-based, much less (Gould, Eklund, & Jackson, 1993).

Anshel and Wells (2000) concluded that athletes tend to use approach strategies over avoidance strategies when they did a study that looked at competitive basketball players between the ages of 17 and 48. Using an inventory created for the study, the authors tested how consistent the 147 male athletes were in appraising and coping with 4 types of stressful situations that they experienced during a previous game. When faced with physical abuse, missing an easy basket or losing the ball, the players reported using approach coping strategies. However, when the players received a bad call from the referee, the players reported using avoidance coping strategies.

Similar to the findings of the general population, Anshel, Williams, and Williams (2000) suggested that athletes use a variety of different coping strategies at one time, depending on the type of stressor presented. Anshel, Williams, and Williams (2000)

assessed 649 male and female athletes from the United States and Australia. All of the athletes were currently involved in organized competitive sports and were between 18 and 23 years of age. Using a 134-item survey they created, called the Coping Style in Sport Survey (CSSS), Anshel et al. attempted to identify similarities within how athletes coped with acute stress during a sporting event. The questions on the survey "reflected the possible use of coping strategies in response to seven acute stressors commonly experienced in sport" (p. 760). The coping style that the athletes reported using differed depending on the actual stressor that was presented. For example, when faced with the stress of a cheating opponent, the athletes reported using emotion-focused coping. However, when faced with the stress from being reprimanded by the coach, the athletes tended to use approach-emotion factored coping. This study supported the findings of the Gould, Eklund, and Jackson (1993) study of Olympic wrestlers where the wrestlers reported using coping strategies from different categories. The wrestlers also reported that they often used a variety of different coping strategies in conjunction with each other.

Anshel and Kaissidis' (1997) study also reported that athletes use a variety of coping strategies. The study consisted of 190 male and female Australian basketball players between the ages of 18 and 24. The Miller Behavioral Style Scale and the Coping Style Inventory for Athletes (CSIA) were both used to determine the coping strategies used by the athletes during stressful situations. The CSIA was created specifically for this research study with the belief that coping is influenced simultaneously by situational and environmental aspects. Using the two instruments, the researchers determined that both personal and situational factors led to significant

variation in players' choice of a coping response. When faced with a situation that was the least controllable on their part, such as getting a bad call from the referee, the athletes found the situation to be the least stressful. However, when athletes were faced with a situation where they were in complete control of the situation, such as missing a jump shot, they felt that it was the most stressful situation. The participants in the study tended to apply specific coping strategies to different situations. During the actual game, players were cited as using more approach coping than avoidance coping strategies. However, when faced with situations where athletes did not see themselves in control or they did not identify any short-term effects, the players tended to use strategies that were more avoidance coping. The more stressful a situation became, the less the athletes used avoidance coping strategies. Instead, the athletes tended to use more approach coping strategies. Overall, the authors concluded that situational appraisal appears to be a much better predictor of a coping style than personal disposition. The results of this study were later supported by Anshel and Wells (2000), who investigated competitive basketball players, and, again, by Anshel and Delany (2001) after they interviewed 52 male and female youth field hockey players from Australia.

The general consensus is that athletes use a variety of different coping strategies depending on the particular nature of the stressor. While we recognize that different coping strategies are applied depending on the stressor, we do not know what coping techniques may be used when the stressor is physical pain and the sport situation demands that the athlete continues performing.

Gould, Eklund, and Jackson (1993) suggested that coping strategies may be learned from experiences. The Olympic wrestlers in their study may have used thought

control in the past and found it to work successfully so they now employ the coping strategy automatically. This would explain why this technique was used predominately over the other techniques. If athletic trainers, coaches, and sport psychologists are able to learn what coping strategies are effective to cope with physical pain, they will be able to teach athletes effective strategies to aid their performance and facilitate pain coping efforts.

Gender Differences and Coping Strategies

A variety of studies have been done to identify any differences between males' and females' coping strategies. Ptacek, Smith, and Zanas (1992) reported that males and females tend to use different coping strategies. Using retrospective self-report, Ptacek et al. had 186 male and female college students report the most stressful events of their day and how they coped with the situation. The students, ranging from 18 to 46 years of age, were asked to record this information for a period of 21 days. The researchers identified that males tended to rely on problem-focused coping strategies while the females tended to look for social support and relied more on emotional-based coping strategies. These results were supported by a study that placed college students in a stressful situation while in the laboratory setting. The 114 male and female college students from the same university as the previously mentioned article were told that the following day they would give a 5 minute speech about the pros and cons of the use of animals in research. Before and after the speech the participants were asked to answer questions regarding anxiety levels and coping techniques. In this setting, both genders cognitively appraised the situation the same, however, they found that the two genders reported using different preparatory coping strategies. Similar to the findings in Ptacek et al.'s study (1992), men

used problem-focused coping strategies while women sought out social support and used emotion-focused coping. The authors suggested this evidence does not support the theory that coping differences are purely from sex differences. However, it does support the socialization hypothesis that states that men are taught from a young age that they should approach and deal with stress while women are socialized to be more emotional and to seek support from others (Ptacek, Smith, & Dodge, 1994)

Jensen, Turner, Romano, and Lawler (1994) suggested that it is very logical that women and men have different coping strategies to deal with pain. They reported that past literature strongly suggests that males and females experience pain in different manners. Researchers have also discovered that individuals will develop their own coping strategies to deal with the situation, including painful stimuli. Therefore, if people are experiencing the sensation differently and they are coming up with their own techniques to cope with the situation, then it would be expected that they would develop different coping strategies. This would then lead to the question, are there differences within gender as well as between genders? Keogh and Herdenfeldt (2002) conducted a study that supports Jensen et al.'s proposal about gender differences.

Keogh and Herdenfeldt (2002) induced physical pain onto their participants through the use of cold pressure. The 24 male and 26 female adults who all reported to be currently free of pain, were asked to place their arm in an ice water bath that was maintained at 1-2 degrees Celcius. After a period of submersion, the participants were asked to complete the McGill Pain Questionnaire-Short Form (MPQ-SF; Melzack, 1987, a shortened version of the Depression Anxiety Stress Scale (DASS; Lovibond and Lovibond, 1995), and the Balanced Inventory of Desirable Responding (BIDR; Paulhus,

1991). One of the goals of the researchers was to see if they could influence the coping strategies and the information that the participants focused on. In order to do this, the researchers instructed the participants what to think about while the test was administered. They were either instructed to focus on emotional-focused coping strategies or problem-focused coping strategies. The study found that males and females did select different coping strategies and responded differently to the different directions given to them by the researchers. The males tended to exhibit less of a negative pain response when they were asked to focus on the sensory components of the pain. This focus on the sensory component of the pain seemed to dramatically decrease the pain experience for the males and helped them cope with the situation. Females did not benefit from focusing on the sensory components of the pain. It was predicted by the authors that while the female participants did not benefit from the focus placed on the sensory component of pain, they would benefit from focusing on the emotional component of pain. To the authors' surprise, they found that females actually decreased their tolerance for pain when asked to focus on the emotional component of the pain being induced to them. Therefore, the females decreased their pain tolerance when asked to apply either thought process. In the case of the emotion-focused instruction, the reported pain affect scores actually increased. The authors suggested that not only are the two thought processes not beneficial to the females, but emotion-focused instruction may actually be detrimental to females.

Otto and Dougher (1985) looked at gender differences and pain from a different perspective. The authors were focussing on the differences between the males' and females' pain threshold and pain tolerance levels. However in their research, they chose

to have the participants fill out surveys to determine the participant's levels of masculinity and femininity. The Bem Sex-role Inventory (Bem, 1974) and Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) were given to 40 male and 40 female undergraduate students who were enrolled in the introductory psychology class at the University of New Mexico. The student's ages ranged from 18 to 55 years. Upon completion of the surveys, the participants were asked to place their finger on a modified Forgione and Barber focal pain stimulator. This device would apply pressure to the finger and would steadily increase in intensity. The participants were asked to report their levels of pain using a 7 point likert scale. The amount of time that it took for them to report that they were at a five was considered the pain threshold. When they reported they were at pain level 7, the experiment was concluded. The time it took them to reach pain level 7 was considered the pain tolerance of the individual. The researchers reported that there was a significant interaction between masculinity-femininity and sex for the pain threshold. This finding was found to only be significant for men and not women. Therefore, when a man demonstrated more masculine characteristics, the pain tolerance of the individual tended to increase. When the researchers looked only at the sex differences, they were not able to find a significant difference. This is important information to note because it has been suggested that these masculine characteristics are socially attained. While the authors did not state this conclusion, one may go so far as to say that the individuals who portrayed themselves with the masculine characteristics may be applying more masculine coping strategies to cope with the pain. One may wonder, as women become more involved in sports, and are treated in the same fashion as their male counterparts, does pain tolerance of the female athlete increase? Likewise, at the onset of

injury in an event where female competitors are expected to continue performing, would females utilize the same coping strategies as male athletes? In other words, does the situation (i.e., continued performance) require specific coping strategies in order to complete the performance or is the strategy affected more by the individual's gender?

Gender Differences and Coping Strategies Among Athletes

The research on gender differences and coping strategies used by athletes is still conflicting. One hundred and seventy four male and 77 female Israeli athletes were asked to complete an instrument created by Anshel (1996). The survey was a sixteen item questionnaire that measured eight sources of stress using a 5-point likert scale. The eight sources of stress were (a) making a physical or mental error, (b) being criticized or reprimanded by the coach, (c) observing an opponent cheat, (d) sustaining pain or injury, (e) receiving a wrong call from an official, (f) observing an opponent perform well, (g) performing poorly due to bad weather or substandard playing conditions, and (h) being distracted by the crowd. The male and female athletes both reported using avoidance coping techniques instead of approach coping techniques. The only significant gender difference found was the type of stressor where the athlete would apply their coping strategy. During stressful situations, male athletes used more avoidance strategies than approach coping strategies, especially if the individual made an error or if an opponent was cheating. However, when females faced a stressful situation caused by their own error, they were significantly more likely to use an approach coping technique instead of an avoidance technique (Anshel, Jamieson, & Raviv, 2000).

Some literature has suggested that males use more approach coping strategies while females tend to use more avoidance coping techniques. Researchers gave a survey

to 288 male and 189 female competitive athletes from the Republic of Singapore. The athletes were from 15.8 to 20.3 years of age and competed in a wide variety of sports. In order to assess the athlete's coping strategies for seven acute stressors, the athletes were asked to complete a 134-item survey developed specifically for this study. The results led researchers to suggest that the use of specific coping strategies was a function of gender. The researchers further suggested that not only did male athletes tend to use approach coping techniques more than females, but approach coping techniques could also be associated with some types of stressful situations (Anshel, Porter, & Quek, 1998). This study is in contrast to Crocker and Graham (1995) who used a population similar to those represented in the Anshel, Porter, and Quek (1998) study though the participants were from the United States. A survey was administered that consisted of 12 coping scales. The survey was created from the COPE Instrument and also using performance goal incongruence and positive and negative affect. One hundred and sixty nine females and 208 males completed the survey. Upon data analysis, Crocker and Graham reported that the primary strategies athletes reported using were increasing effort, planning, suppressing competing activities, active coping, and self-blame. While females reported using "higher levels of social support for emotional reasons and increasing effort" (p. 332), there was no evidence that men used more problem-focused coping than females. Instead, both males and females reported using high levels of increasing effort.

Meyers, Bourgeois, and LeUnes (2001) also reported that there was no significant difference found between the coping strategies used by 130 male and 55 female nationally ranked rodeo participants. In order to measure the coping strategies used by the athletes, they were asked to complete the Sports Inventory for Pain (SIP). The only

significant gender difference that was noted was that the females scored lower on their body awareness than the males. The coping responses and strategies used by males and females were not found to be significantly different. When analyzing the coping strategies used by 10 to 12 year old field hockey players from New South Wales, Anshel and Delany (2001) state, "the gender differences in the use of coping strategies were more discrepant than similar" (p. 343). After completing structured interviews with 36 males and 16 females, Anshel and Delany reported that when responding to negative appraisals, males were more likely than females to use an avoidance strategy while females were more likely to apply an avoidance coping strategy when faced with a positive appraisal. Females also reported using approach strategies more often than males when coping with both a positive and negative appraisal. The different findings in this study may be attributed to the athletes being younger and far less experienced than the athletes mentioned previously.

Contrary to previous research, Anshel, Willaims, and Hodge (1997) reported that 359 college-aged, female athletes from a variety of sports tended to prefer to use an approach-coping technique when faced with a stressful situation. However, when faced with a painful situation, females tended to use an avoidance-coping strategy whereby they actually tried to ignore the injury and continue playing. This finding supports gender differences found in earlier research with nonathletes. The 290 male athletes that were surveyed did not try to apply an avoidance-coping strategy when faced with pain. Instead, the males used an approach-coping strategy where they tried to psych themselves up using the pain as a mental cue. The data from this study did support the previous findings that females tended to use emotion-focused coping strategies while males tended

to use more problem-focused coping strategies. Does this mean that when faced with pain in the middle of a competition males will try to address the pain while females try to ignore it, or will the athletes all apply similar coping strategies?

Hall and Davies (1991) chose to look directly at athletes and non-athletes when approaching the gender controversy. While the main focus of the study was to determine if male and female athletes differ between each other or from non-athletes in regards to pain tolerance, pain threshold, and pain affect, the study also gathered information regarding the coping strategies used by the athletes. Like other experiments performed in the past, this one chose to apply a cold pressure test to both athletes and non-athletes. The participants were 14 male and female varsity track athletes and 14 male and female non-athletes all of whom were undergraduate students enrolled in a physical activity class. The researcher reported that male and female athletes had a significantly higher threshold for pain. After debriefing the participants and analyzing the qualitative data, the researchers also discovered that the athletic group chose to apply coping strategies such as positive self-talk, imagery, and relaxation through deep breathing. The non-athletic population did not report using these coping techniques. While the authors admit that more research needs to be done to explore this difference, the finding suggested that athletes, male and female alike, have different coping techniques than their non-athletic counterparts. The authors did not determine if there was a difference between the coping strategies of the male athletes and female athletes.

Coping With Injuries

Very few studies have chosen to focus on how athletes cope with injuries. Weiss and Troxel (1986) have suggested that when faced with an injury, the first response

athletes must do is regain emotional control of themselves. They have suggested that injury is a stressor to the athlete psychologically. In their discussion with 10 elite and collegiate athletes, Weiss and Troxel found that many of the athletes reported an inability to cope with their injury. They also had great difficulties coping with the long rehabilitation process that followed the injury and the feeling that the injury had an external control over them. Weiss and Troxel suggested that once athletes have regained mental control, they must employ task-focused, active coping strategies. They suggested that this is often a difficult process for the athlete to do but is necessary to help them in the recovery process.

Similarly, Gould, Udry, Bridges, and Beck (1997a) conducted a study that looked at the coping strategies used by competitive skiers when faced with a season-ending injury. The study included 21 U.S. alpine and freestyle skiers. Using qualitative interviews, the researchers were able to identify retrospectively seven higher order dimensions that were used as general coping strategies. These eight themes were (a) driving through, (b) distracting self, (c) managed emotions and thoughts, (d) sought and used social resources, (e) avoidance and isolation, (f) took note and drew upon lessons learned, and (g) other. The study also identified six different higher-order facilitating factors; (a) interpersonal resources, (b) accessibility of quality medical resources, (c) fortunate circumstances, (d) environmental resources, (e) past experience with injury, and (f) financial backing. This research was the first to identify the coping strategies used by athletes when they are injured and rehabilitating. Not only were the general categories defined, but the study also found that 90% of the skiers applied the "driving through" dimension. This made it the most commonly used strategy by the skiers. Gould et al.

suggest that this approach is similar to a problem-focused coping technique. Gould, Udry, Bridges, and Beck (1997b) also reported that only 33% of the respondents reported the injury as being stressful. This left 67% of the interviewees not seeing the injury as a stressful situation. While the authors did point out that there may have been confusion on the exact definition of the word stressful, this does not support the claims made by Weiss and Troxel.

Udry (1997) identified what type of coping strategies athletes used when recovering from a knee surgery and also when they used the coping strategies the most. She interviewed 25 athletes who were having ACL surgery primarily so that they could participate in their sporting event again. In order to determine what coping strategies that athletes used, she asked them to complete the Coping with Health and Injury Problems (CHIP) scale (Endler & Parker, 1990). The athletes completed the survery 3, 6, 9, and 12 weeks after surgery. Udry reported that athletes used instrumental coping strategies most frequently. The coping techniques were used more often three weeks after surgery than they were before the surgery or 6, 9, and 12 weeks after surgery. She also states in her study that "additional research is needed to explore what types of coping are used immediately following an injury or amongst athletes who have ACL injuries but who are not able or choose not to have surgeries" (p.85).

While the research has started to look at the recovery process that occurs after one has obtained an injury, there were no articles found that addressed how athletes cope with their injury at the moment of onset of an injury. If Weiss and Troxel are correct in their belief that the athlete must try to regain mental control in order to effectively cope, one may question if the stress of having to regain control in a very short period of time would

change the coping techniques the athlete chooses. Unlike a rehabilitation situation where the athlete can seek social support and has time to accept and decide how to cope with the injury, athletes that are continuing to perform must cope with the pain instantly and can not rely on social support in the same manner.

Athletes and Pain

Very few studies have focused directly on how athletes cope with pain. Meyers, Bourgeois, and LeUnes (2001) looked at how male and female athletes involved in rodeo competitions coped with pain. Meyers et al. acknowledged that this population is placed at an extremely high risk for injury, which may result in unusual coping strategies when compared to the general population. Many factors including rank and skill level, injury-potential, and gender were compared. When divided by rank, injury-potential, and gender, there were significantly different coping strategies applied by the athletes. It was also noted that when compared to other studies that do not focus on high contact sports, the results were significantly different. The researchers concluded that elite athletes are better able to continue playing through pain. They also concluded that athletes that are in high injury-potential sports are able to cope with pain more effectively than those athletes that are not exposed to high injury-potential activities. Encarnacion, Meyers, Ryan, and Pease (2000) reported that ballet dancers may also cope with pain differently than the general population as well as other athletes. The Sports Inventory for Pain was administered to 114 female and 21 male academy, pre-professional and professional level ballet dancers. The mean age of the dancers was 19.2. The professional level dancers exhibited lower coping and cognitive scores when compared to dancers from an academy. This information agreed with the findings in Meyers et al.'s rodeo study that

reported the same responses from the athletes. Encarnacion et al. suggested that coping strategies may become psychologically ingrained natural responses due to the athletes' experiences with an extremely competitive environment.

Coping Surveys

Lazarus and Folkman developed a survey to measure their proposed coping strategies. Since the original survey was written, a revised version has been published entitled Folkman and Lazarus's Ways of Coping Survey (Revised) (1985). The survey consists of sixty-seven questions measured on a likert scale of 0-3. On the survey, the zeros are used to indicate that the individual does not use the suggested coping strategy, one represents that the individual uses the strategy "somewhat", two represents the participant uses it "quite a bit", and three represents the participant uses it "a great deal".

Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen (1986) reported the Cronbach alphas for reliability for each of the eight scales as follows: confrontive coping (I let my feelings out on somebody), .70; distancing (I tried to forget the whole thing), .61; self-controlling (I tried to keep my feelings to myself), .70; seeking social support (I got professional help), .76; accepting responsibility (criticized or lectured myself), .66; escape-avoidance (hoped a miracle would happen), .72; planful problem-solving (came up with a couple of different solutions to the problem), .68; and positive reappraisal (rediscovered what is important in life), .79.

While this survey has been found to be reliable, it does not fit the specific needs of this research project. A variety of the specific coping strategies that are listed on the survey are not realistic given the athlete is still performing. For example, one coping strategy that is suggested is that athletes speak with their priests. While this coping

strategy may be used by athletes, it can not be done while the athlete is continuing to perform. Because this study is focusing only on the coping strategies that the athlete is using to continue performing, this survey does not seem appropriate.

The Sports Inventory for Pain (Meyers, Bourgeois, Stewart, & LeUnes, 1992) has also been used in the past to look at psychological distress and physiological responses. However, this survey does not look directly at the coping responses the athlete uses.

One such survey that does address coping responses is COPE (Carver, Scheier, & (Weintraub, 1989) has been created in order to look at athletes' coping responses. COPE refers to **C**ontrolling emotions, **O**rganizing input, **P**lanning the subsequent response, and **E**xecuting the appropriate reactions. The actual survey consists of 13 scales. Five scales measure different aspects of problem-focused coping, five scales measure different aspects of avoidance-coping, and three scales measure different aspects of coping that the authors refer to as "responses that arguably are less useful" (p. 267). These last strategies include venting the emotion, mentally disengaging, and physically disengaging. While this survey has also been found to be reliable, it does not fit the scope of this study due to its inapplicability towards injury and pain. The survey is directed to other stressors that athletes may experience (e.g., a bad call from the referee). Based on the past literature and the research questions posted in this study, the survey is therefore not appropriate.

With little literature provided on how athletes cope with pain at the moment of injury, a qualitative approach seems appropriate for this particular study. Through the interviews, we will be able to determine if athletes do indeed cope with the pain at the moment of injury the same way they would cope with a general stressor like a missed shot. Without this information we are unable to determine if any of the previously

created survey items would be appropriate to accurately measure the coping strategies. For this reason, the study will be conducted using a semi-structured interview. The questions are based on the information and the questions that have been previously tested on the previous instruments. However, they allow for open elaboration on the specific coping techniques used by the athletes. This approach has been chosen so as not to limit athletes in their responses regarding the coping techniques.

Conclusion

While the last two decades have brought a great deal of research and knowledge to the field of sport psychology with regards to the coping strategies used by athletes, there is still a large gap of information that has not been tapped. We have primarily looked to see how the athletes cope with the stress in a variety of situations. We have also looked at gender differences regarding coping with stressful situations. More recently, we have started to look at how athletes cope with injury over a period of time and even gender differences regarding how athletes cope with pain. However, we have still not determined how athletes cope with the pain and stress at the moment of injury. A concern arises as we observe more and more athletes in all sports continuing to play through their pain. Understanding what coping strategies the athletes are using can be helpful not only to the coaches but also to the athletic trainers and doctors who are working with the athletes. As the athletes continue to play when their body is injured, they often make the injury worse. This often frustrates and baffles the medical professionals. By getting insight into the athletes' thinking about pain, we can better understand what is happening and how they are able to keep going. We can use this information to teach the athletes effective coping strategies and discourage coping strategies that may be effective but lead to further injury. We may also help those

individuals who are not able to continue performing when experiencing even mild discomfort due to their inability to use successful coping strategies. We may be able to suggest strategies that are more effective and will allow the athlete to continue performing through the basic discomfort that is often reported with sport participation. Weiss and Troxel (1982) stated, "Obviously, an injury is an unpleasant stressor and carries the potential for a great deal of distress. Therein lies the critical need for athletes to learn how to control their stress levels when injured" (p.105). It is the goal of this study to help fill the gaps in the literature and develop a strong understanding of the coping strategies athletes use when they become injured so that professionals can help teach the athletes the most effective strategies, including withdrawal from competition.

Chapter 3
Method

Participants

The study initially consisted of six female and six male varsity athletes from a NCAA Division I school. There were 2 male long distance swimmers (200 m or more), 2 female long distance swimmers (200 m or more), 2 female gymnasts, 2 male wrestlers, 2 male cross-country/track runners, and 2 female cross country runners. After conducting all of the interviews, one male long distance runner was excluded for not meeting all of the criteria. Therefore, the data reported are based on responses from 11 athletes, 5 males and 6 females. The athletes were between 19 and 23 years of age. The mean age for females was 20.2 (SD=1.2) and the mean age for the males was 20.6 (SD=1.8). The athletes represented all academic class levels from freshman to fifth year senior. All of the athletes had competed with at least one injury in the past and they rated the pain as a 3 or higher on a 5 point likert scale.

The athletes reported a variety of different injuries. Due to the fact that medical records were not obtained for this study, the description and name of the injury were based purely on what athletes communicated to the researcher. The injuries reported by the female athletes were stress fractures, sprained ankles, a cracked rib, an IT band injury, and a fractured tibia. The injuries reported by the male athletes were a torn meniscus, a partially torn ACL, a badly cut foot, a badly pulled hamstring and a bone infection.

Instrumentation

Demographic Survey. Participants were asked to complete a short demographic profile (see Appendix A) in order to determine who qualified for the interview. The

information obtained from this survey included the individual's gender, age, sport, years of participation in the sport, and injury history. The survey also asked if the athletes would be willing to participate in the interview. A space was provided for athletes to record their contact information if they were willing to be interviewed.

Interview. The athletes were asked a series of questions (see Appendix B) using a semi-structured protocol. A total of 12 questions were asked about the athletes' experiences with injuries and how they coped with the injuries as they continued to perform or compete. There was also a question that inquired about motivational statements the athletes might use and another question asking where the athletes thought they had learned their coping strategies. After a handful of athletes mentioned the process of deciding if an injury is too serious to continue, the researcher also started asking athletes to elaborate on this concept if it was mentioned by the interviewee.

Procedure

The coaches of the chosen teams were contacted by phone. The researcher explained the purpose of the research project, what the researcher hoped to gain from the project and how future athletes could benefit from the project. The coach was then asked if a five to ten minute presentation could be given to his or her team. Upon the coach agreeing to participate, the researcher and coach arranged for a time to meet that was convenient for the team. Due to different training schedules, the meeting locations and times varied for each team. However, all the teams met in a facility that was private to the team and had a spot for the athletes to sit and complete the survey quietly. All of the coaches were able to incorporate the researcher's presentation into a time that was arranged for a team meeting or practice so it was not inconvenient for athletes.

During this informal presentation, the athletes were told the purpose and significance of the study. The researcher then explained the athletes' rights, emphasizing that participation in the research study was not mandatory. Every athlete was given a consent form (see Appendix C), a pencil, and a clipboard. The athletes were asked to please read over the consent form and ask any questions they may have. The athletes were then given the option to sign the consent form or leave it blank. It was explained that by signing the consent form, they were agreeing to complete the survey. At this time, each athlete was given a large manila envelope along with the demographic profile. The athletes were told to place their consent form, signed or not, into the envelope. The researcher explained how to complete the demographic profile and asked those willing to participate to complete it at that time. Upon completion of the survey, the athletes were asked to place their survey in the envelope with their consent form and then place the envelope in a designated box. If athletes chose not to complete the survey, they were asked to place the blank survey in the envelope with their blank consent form and place the envelope in the same box as the other athletes. After collecting the pencils and clipboards, the researcher thanked the athletes and coach for their time. The athletes took approximately 15 minutes to complete the entire process.

The demographic profiles were initially sorted based on the athlete's willingness to participate in the interview. All participants that said they were willing to participate in the interview were then sorted based on their injury history. Athletes that were selected must have reported that they had had an injury while performing and chose to continue performing in that event. The athletes also had to report that the pain they experienced at the moment of the injury was a 3 or greater on a 5 point likert scale.

Responses of athletes that met this criteria and agreed to participate were placed in a separate pool that was sorted by sport. From each pool, four athletes were randomly chosen. If an athlete only reported one injury that was rated as a three, he or she was considered the fourth person to be contacted. Otherwise, the athletes were contacted based on the order they were chosen from the pile. The first two athletes that were chosen from each category were contacted by phone. If the athlete was still willing to participate, a time and location to meet and conduct the interview was arranged. If the athlete was not able to meet due to schedule conflicts or the athlete decided not to participate, then the third athlete that was chosen was contacted. The fourth athlete was contacted if there was another issue with the first, second, or third chosen athlete. Two days prior to the interview, the athletes received an email reminding them of the interview and providing them with the specific room number in which the interview would be conducted.

All interviews were conducted in one of two facilities that had a private and quiet conference room. Athletes chose which facility was more convenient for them. Before the athlete arrived, the recording equipment was set up on the table. There were two recording devices used during the interview. One of the recorders was a digital recorder with a table microphone plugged into it. The second recorder on the table was a tape recorder that also had a table microphone plugged into it. Two recorders were used in case there was a technical complication with one of the recorders. Both recorders were tested before the athlete arrived.

When the athlete arrived, he/she was asked to sit in a chair where he/she felt comfortable. Before turning on the tape recorders, the researcher reminded the athlete

that the interview would be taped. It was explained that two recorders were used in case one of the recorders malfunctioned. The researcher then confirmed that the athlete was comfortable with the interview being recorded. Once the recorder was on, the athlete was given a little background information about the researcher and reminded of the purpose of the research project. The athlete was also reminded that all of the answers were confidential and that his/her real name would not be recorded on any publications or on the transcribed interview. Each athlete was told that questions could be skipped if he/she did not feel comfortable answering. If at any time the athlete felt uncomfortable with the entire interview, he/she was allowed to stop participating immediately.

The researcher then asked the 12 designated questions to the athlete, having the athlete elaborate as needed. The interview was semi-structured but it followed a standardized approach. Upon completion of the interview, the athlete was asked if there was anything else that he/she wanted to add. If there was no more information to be added, the researcher thanked the athlete for participating. Each athlete was also offered a copy of the general findings from the study including common coping strategies that are successful and strategies that have been found to be unsuccessful.

Treatment of Data

Once the interviews were completed, they were digitally saved to a private computer file. The interviews were then transcribed verbatim. A pseudonym was used to replace the athlete's real name in order to create anonymity. Pseudonyms were assigned to athletes so that the name was appropriate for the athlete's gender. The pseudonyms also started with the same sound as the first letter in the athlete's sport. For example, a female swimmer could be called Susan.

The transcripts and recordings of the interviews were all stored in a locked file cabinet. In order to protect anonymity, the sheet matching the athlete's real name to the pseudonym was stored in a separate locked filing cabinet and was shredded when the study was completed.

After the twelve interviews had been transcribed, the responses were grouped into very general categories simply to determine consistency. Athletes consistently reported using similar coping strategies so it was determined that the sample size was sufficient. At this time, it was also determined that one of the male swimmers was not appropriate for the research study. After interviewing the athlete, it was discovered that he did not meet all of the general criteria to participate. Initially, he reported that he had experienced an injury while competing that he rated as a 3 or higher on the pain likert scale. After talking with the athlete, it was discovered that he had not experienced an injury that he considered a 3 or higher on the pain likert scale. The swimmer was therefore dropped from the sample.

The analysis procedure was performed as recommended by Patton (1990). Three individuals analyzed the transcripts of the interviews in order to create a triad. The three individuals were all qualified and familiar with coping techniques, sport participation, and qualitative methods. Data were sorted by the twelve questions that were asked to the participants. Questions that did not directly refer to the research questions (e.g., Question 1, an elaboration of the injury) were not analyzed. The responses to questions that did relate to the research questions were analyzed separately. Each researcher independently read through the transcripts and did a primary analysis before meeting as a group. The researchers then sat down together and came to a consensus regarding the lowest order

themes. Two researchers then grouped the lowest order dimensions into middle orders. The three researchers discussed these middle orders until there was a consensus between all three researchers. This same process was done for the highest order. Therefore, the data were sorted using a bottom-top approach using axial coding. Upon completion of the three orders, the researchers independently looked at the data as a whole and confirmed that they agreed upon the assigned orders.

Chapter 4
Results

During the interviews, athletes were asked a series of questions in order to gain an understanding of how athletes cope with pain when they become injured and have to continue performing. Athletes were first asked to describe a situation from the past when they became injured while they were competing. They were asked to talk a little bit about the event, what the injury was and what happened immediately after they became injured. If the athletes were discussing an injury that was not reported on the demographic survey they completed, they were also asked to rate the amount of pain they experienced on a five point likert-scale. During many of the interviews, athletes reported and discussed more than one injury. To help the interviewer and the athlete focus on one particular incident, the athlete was asked to choose the incident they remembered most vividly.

After elaborating on the injury, athletes were asked a series of questions. The goal of the questions presented to the athletes was to answer the three research questions of this study, (a) what coping strategies do Division I collegiate athletes use to cope with pain while they are competing in an athletic event, (b) what motivational statements do Division I collegiate athletes use to cope with pain and persuade themselves to continue to perform, and (c) where did athletes learn their coping strategies? Lastly, the athletes were asked what they would tell a fellow teammate to help them cope with pain and continue performing. This question was added to look at how athletes cope with pain from a different perspective.

The following chapter provides the responses that the athletes gave to each question. The chapter starts by discussing the initial thoughts and actions of the athletes when they first experienced pain. A summary of the coping strategies that athletes

reported as unsuccessful will follow. Thirdly, where the athletes learned their coping strategies will be discussed. The advice athletes would give to fellow teammates to continue performing will then be presented. Lastly, the mottos or motivating statements that the athletes provided will be discussed.

Throughout the chapter, percentages are listed to identify how commonly a theme was presented by the athletes. The percentages are based on the entire population that was sampled. Therefore, percentages are calculated based on 11 athletes. If an athlete was represented more than once in one particular dimension, they were only counted once.

Thoughts and actions of athletes immediately after they feltl the pain

Athletes were asked to discuss their thoughts and actions immediately after they experienced the painful sensation. They were asked to focus on things that they thought and did while they were competing. They were also asked to elaborate on what thoughts kept them going. There was a total of 71 lowest order dimensions identified (See Table 1). These dimensions were grouped into 18 middle order dimensions which were in turn combined to create 12 highest order dimensions. The highest order dimensions were: focus attention away from pain, confrontive coping, distancing, psychological training, social support, sustaining confidence, cognitive dissonance, fear for future, planful problem solving, assessment of situation, and miscellaneous. All eleven of the participants (100%) reported a lower order theme that was categorized under the "focus attention away from pain" dimension. Eighty two percent of the athletes reported using "confrontive coping" and 73% of the athletes' responses were categorized as "using psychological skills training". The next highest reported order was "assessment of the

situation" (54%), "use medical aid" (36%) "cognitive dissonance" (27%), "sustaining confidence through self talk" (27%) ,"fear for the future" (18%), "social support" (9%), and "distancing"(9%). Lastly, sixty four percent of the athletes reported a coping strategy that was placed into a dimension entitled "miscellaneous".

Table 1

Thoughts and actions of athletes immediately after they experienced a painful sensation (N=11 athletes)

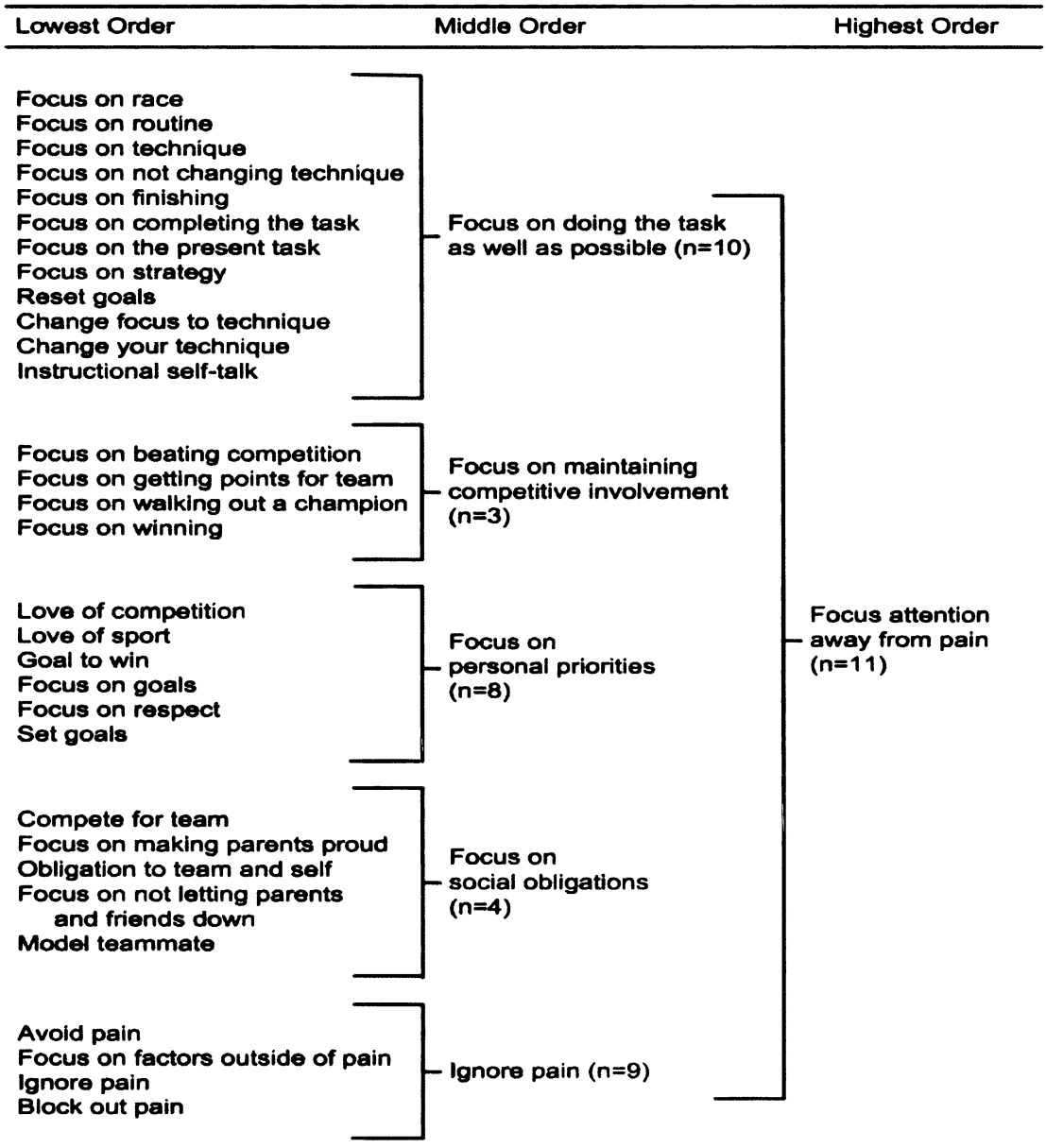


Table 1

Thoughts and actions of athletes immediately after they experienced a painful sensation *(continued)*

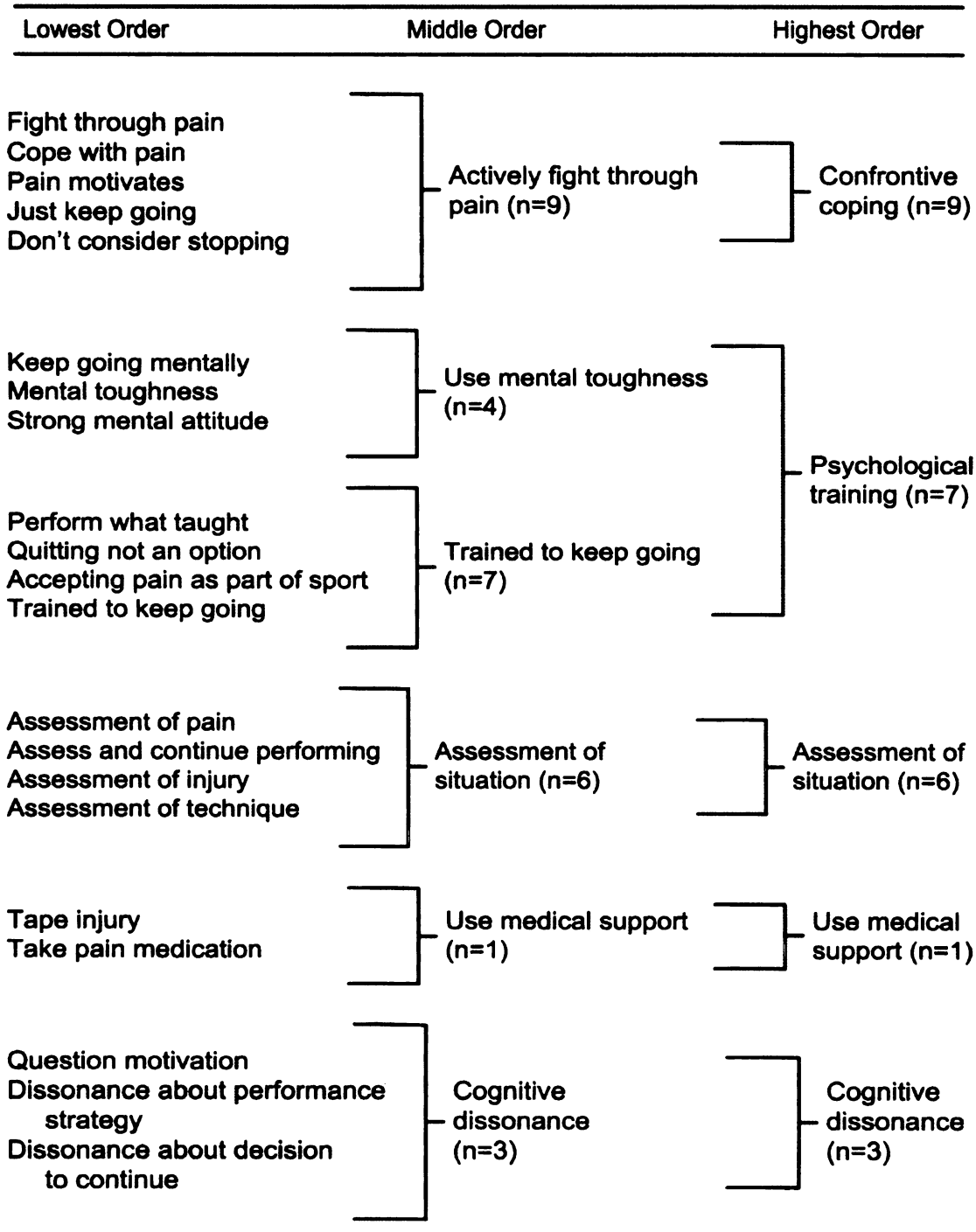
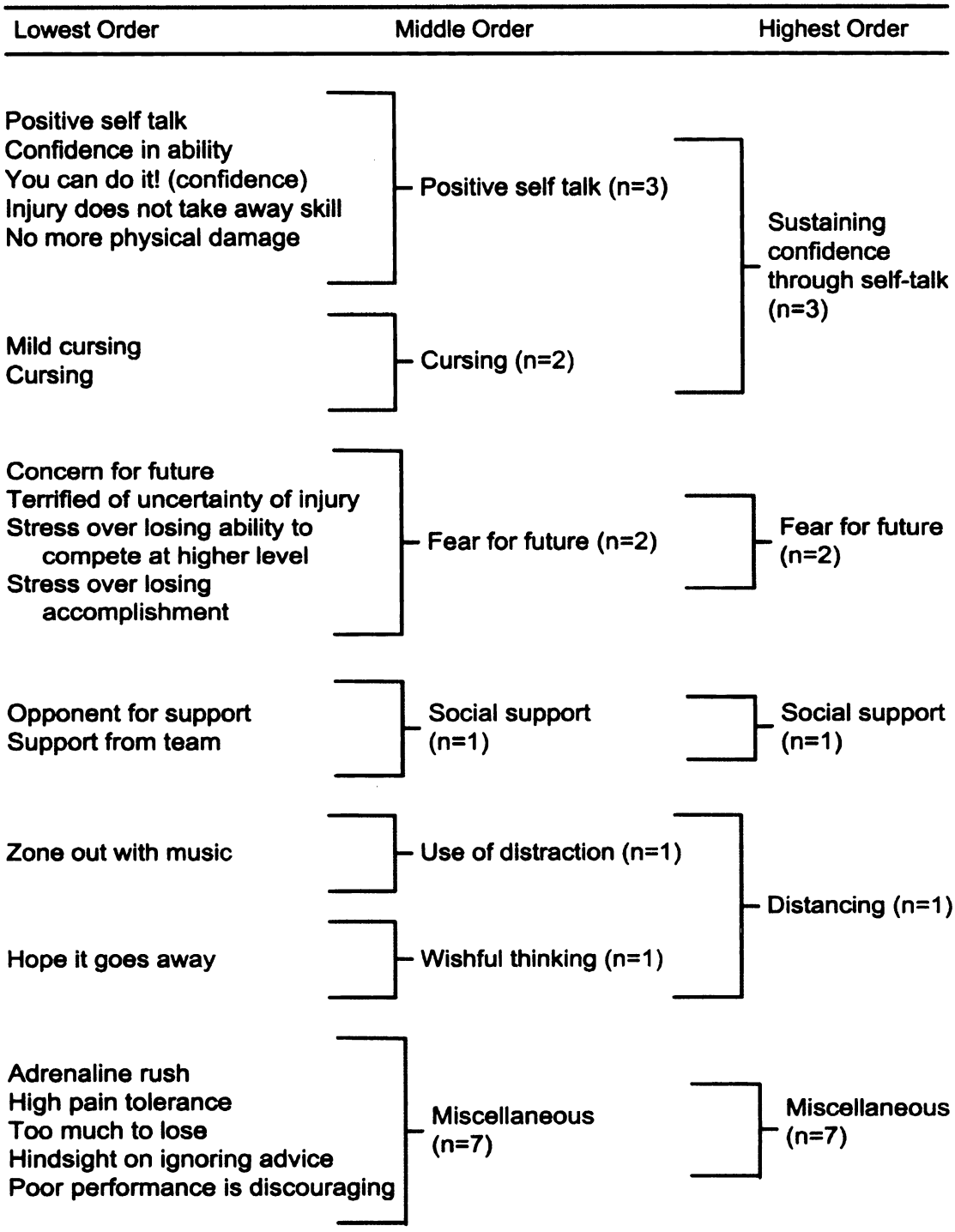


Table 1

Thoughts and actions of athletes immediately after they experienced a painful sensation *(continued)*



Focus attention away from pain.

All of the athletes that were interviewed reported focusing their attention on something other than the painful stimulus. The athletes responses were sorted into five middle order themes: focus on doing the task as well as possible, focus on maintaining competitive involvement, focus on personal priorities, focus on social obligations, and ignore pain (See Table 1).

Focus on doing the task as well as possible. Ninety one percent of the athletes (six females and four males) reported focusing their attention on doing the task as well as they possibly could, considering that the painful stimulus was present. The athletes reported focusing on a variety of aspects that were all related to their performance. These aspects ranged from focusing on the actual race, to resetting their goals, to changing their technique. The following quote illustrates a commonly reported lowest order, focusing on the finish. "...My thoughts definitely started to change from, trying to run as fast as I could to just trying to get through the race..." (Tim, p.9).

Other athletes reported focusing on their technique. Some athletes reported that they changed their technique to compensate for the pain while other athletes reported that they focused on not changing their technique just because they were in pain. For example, one athlete stated, "...That's why I had to focus more on my technique because I didn't want THAT [technique] to go just because my ankle wasn't... [working well]" (Sylvia, p.8). The belief that their injury would affect their performance made the athletes focus more on their technique in order to decrease the negative effects from the pain.

Three female athletes and one male athlete reported that they focused on the overall event they were in. "I just try to get more into the race and think more...about the race and the people around me" (Tracy, p.12).

Focus on maintaining competitive involvement. Twenty seven percent of the athletes (2 males and 1 female) reported that they focused on aspects that were related to the competitive nature of the activity. The athletes reported focusing on beating the competition and winning as is illustrated by the following quote.

> ...there were several other people in the area, a lot I could see across the race...one guy in particular whom I had wanted to race for a while. So I didn't really think about it [the pain] as I need to stop, it was 'I need to beat him!' So I was really...focusing on that (Tyler, p.3).

Focus on personal priorities. Four male and four female athletes (73%) reported that they focused on their personal priorities such as their goals and their love of the sport. Jenny summarized her own and other athletes' feelings nicely when she said, "I would just...kind of tell myself 'you know this is what you love to do and just do it!' Like [do] the best that you can and go as hard as you can and forget the pain" (Jenny, p.17).

Rick talked about how he thought of his long term goals and how he had to continue performing in order to reach those goals.

> ... every match is crucial towards seeding and placing towards districts, regionals, and State tournament. So within every match even if I was injured, I knew that I HAD to keep going because you had to. You had to prove that you could beat this guy so that you are one step up when it comes to seeding at districts... It definitely looks better to try to get as many matches in even if you are hurt, like especially on the collegiate level...if you are trying to go from high school to college in what ever sport you are doing. So, that was my biggest influence, I really wanted to get to the state tournament, and then I really wanted to do well there, and I knew that every match counted towards that... (Rick, p. 5)

Focus on social obligations. Thirty six percent of the athletes (3 males and 1 female) reported that they focused on their social obligations. Some of the athletes focused on making their families' proud while others focused on their perceived obligation to their team members. For example, this athlete stated, "...I think that even though it hurts to land that ONE time you know that is the one time that I have to do it and it is something that I can do and so I do that for my team." (Jenny, p.12) The following quote summarizes Rick's thoughts about not disappointing his parents and friends

> ...there have been people at tournaments where I [thought] 'alright they came and wanted to watch me and I'm not going to let them down. I am not going to not perform to the best that I can, whether it is like friends or brothers coming home from college to watch me ...I kind of wanted to give them a show... (Rick, p.17)

Ignore pain. Five female and four male athletes (82%) reported that they simply ignored the pain. They chose to not address it at all and blocked it out to the best of their ability. One athlete stated, "I kind of try to focus it out as best as I can..." (Rick, p.7). Another athlete talked about how she actually thinks about pain in a different manner."...you have to shut off the way you think about PAIN. Like if you think, "oh my god I'm going to die if I keep going!" and then of course you are going to die! (laughs)" (Jackie, p.11).

Confrontive Coping

Actively fight through pain. The athletes who reported using confrontive coping strategies all reported that they actively fought through the pain. Eighty-two percent of the athletes reported a strategy that fell within the highest dimension of confrontive coping. When the athletes were asked to describe their injury, they were also asked if they stopped competing at that moment. None of the athletes actually stopped competing

in the event where they felt the pain. In fact, five of the females and two of the males said that when they feel a painful sensation they do not even consider the option of stopping. Jenny stated, "...so I kept going cause there was not even an option to not continue but then once I was going I knew that, like I couldn't hesitate, you can't hold back, you have to go all out ..." (Jenny, p.17). Four of the athletes reported that "you just have to keep pushing somehow" (Tracy, p.10). While Sandy talked about how she fought through the pain until she simply could not keep going, "... I just fight through pain till it almost gets to the point where you can't ignore it... cause I keep working through it till it gets to the point where it is unbearable..." (Sandy, p.5).

Psychological Training

Seventy three percent of the athletes (3 males and 5 females) discussed using some aspect of psychological training. This strategy referred to an approach that had been learned over time. In some situations, athletes learned the strategy from a coach or teammate. Other times, athletes had learned the strategy through general experiences in their sports. The athletes' responses were categorized into two middle order themes, namely, trained to keep going and use mental toughness.

Trained to keep going. Sixty-four percent of the athletes (3 males and 4 females) talked about how they were trained to continue performing through pain and that pain was simply part of sports. When asked what kept them going through the pain, these athletes responded with comments such as "...we have always been trained to just run through it, so that is what you do" (Tracy, p.16). One athlete described continuing with pain as "...just something automatic..." (Steve, p.18). The statements by the athletes

suggested that continuing to perform was simply part of the sport and was something that they did not question.

Use mental toughness. Thirty-six percent of the athletes (1 male and 3 females) referred to a mental attitude that they possessed that helped them to continue performing. One of the athletes referred to it as mental toughness, while Ron stated, "... it is all about finishing strong! I don't think there has ever been someone that has defaulted in the state finals. I DEFINITELY don't want to be the first! It is just a wrestling mentality to keep going" (Ron, p.9).

Assessment of Situation

Assessment of situation. Fifty four percent of the athletes (2 males and 4 females) reported that when they first experienced the pain, they assessed the situation. According to the athletes, the primary purpose of the assessment was to determine if they could continue performing and what needed to be done to continue performing. They assessed a variety of variables in order to determine if and how they were going to continue. Four of the athletes reported assessing the actual pain. For example, one athlete stated, "...it is not bad enough yet, I can continue, they [competitors] are here and I [have] got to work with them. I will deal with you [pain] later" (Tyler, p.14). Jenny said, "...I was like, 'OK, there is nothing obvious that I have to worry about! So I just have to keep going!' because that's what everybody else would expect me to do" (Jenny, p.17). Another athlete assessed the actual injury. She reported her thoughts were, "I thought it was just like anything else. You know a week or two of extra stretching and switch shoes and I thought it would go away pretty quickly" (Tracy, p.6).

Jackie reported that she assessed her technique in order to determine what had caused the pain. She stated she "... [was] just like trying to think of what I did wrong to try to fix it the next time in order to not do that same thing..." (Jackie, p.5).

Use Medical Support

Use medical support. Thirty-six percent of the athletes (2 males and 2 females) reported using some form of medical support to help them cope with their pain. Some of the athletes suggested using tape or a brace to help stabilize the injury. "...you just tape it up and you keep going" (Sylvia, p.4). Other athletes talked about using pain medications. The following quote illustrates how Rick chose to use medication and a brace, "...I was wearing like two knee pads over it just trying to keep it stabilized... keep it as strong as possible. But as far as Aleve was going, I was taking those like candy because it hurt bad" (Rick, p.4).

Cognitive Dissonance

Cognitive dissonance. Three of the females (27%) discussed having cognitive dissonance. Tina and Jenny talked about how they battled in their head whether or not to continue performing and how they would continue. In the following quote, one of the athletes discussed how she questioned her decision to continue performing while she was in pain.

> ...In the back of my head I knew I should stop because injuries like that can kick you out forever. I mean that is a big bone [tibia] and if you really break it you could ... never be able to run again. It is on a track and I run the 4 by 8, the mile, the 2 mile, and the 4 by 4 in high school. The point that it started to really hurt was my third event. And I KNEW ... in the back of my head that I probably shouldn't have been doing it (Tina, p. 8).

Another athlete talked about how she knew once she decided to continue performing she had to give it her all. She discussed how she would risk becoming more

injured if she held back and protected her injury. Therefore, she had to take on an all-or-nothing attitude. The cognitive dissonance she experienced while making this decision is illustrated in the following quote.

> ...You know in my head it [injury] would just stress me out, get me worried and make me like hold back and anticipate ...and that's another way to lead to injury because when you don't go all out, even when you are hurt, that's just another way for you to get hurt again. And, I remember my parents were actually my coaches during club and when my dad came out to watch me compete a couple weeks ago, it was our second home meet, and I was ACTUALLY competing and dismounting on bars for the first time since I hurt myself, and he just said, you know, like no matter how hard or how much you think it is going to hurt, you CAN'T hold back because you're gonna hurt yourself some other way ... He was saying if you decide to go and compete, and go for the dismount, then you have to go and do it all out, as if your foot wasn't even hurt. You just have to wipe that clean from your head... (Jenny, p.15)

Sustaining confidence through self-talk

In order to cope with the pain and continue performing, 1 male and 2 females (27%) sustained their confidence through the use of self-talk. Athletes reported the use of positive self-talk as well as cursing. The two athletes that reported that they cursed when they initially felt the pain also reported that they used positive self-talk.

Positive self-talk. Twenty seven percent of the athletes reported that they used positive statements to help build up their motivation and provide themselves with confidence to continue performing. For example, one athlete said, "...I tell myself I have confidence in your ability cause you've been doing these skills for a long time..." (Jackie, p.11). The same athlete also reminded herself that, "...one little ankle sprain or something that debilitates you isn't going to take that [your skill] FULLY away from you..." (Jackie, p.11). She reassured herself that while she may be injured, she still had her skill which is what was primarily important in the race.

Jenny talked about how she used self-talk to remind herself that she could not do any more physical damage by continuing to perform. She expressed her reassurance to herself in the following quote "...somehow reassuring myself that I am not going to do any more damage or I am not going to hurt myself anymore, that helps me to just kind of be like 'well, it is a pain. You can kind of put up with it.' (Jenny, p.6).

Cursing. Two athletes (1 male and 1 female) reported that when they initially felt the painful sensation their response was to curse. When asked what first went through her head, one athlete responded, "OH SHIT!" (Jackie, p.5). The cursing reported was the very first response to the pain and was then followed by another coping strategy.

Fear for the Future

Fear for the future. Thoughts regarding fear for how the pain was going to affect the future were discussed by one male and one female athlete. Both of the athletes talked about the stress they experienced. One of the athletes talked about the stress he experienced regarding his ability to compete at a higher level. He stated, "... [state meet] was the first thing I thought. I blew my chance for state meet and I thought that this [injury] would affect my stroke, which it did..." (Steve, p.10). Another athlete talked about the stress because she felt she would lose her accomplishments.

> ... I remember the biggest thought in my head was, it was so hard for me to get back in shape this season. In pre-season I was FINALLY there. One of the first thoughts that went through my head was I had one of my best practices the day before and I was finally in such good shape. It felt like all that work was for nothing (Jenny, p.11).

Both of the athletes focused their attention away from the current event and focused on a future event that was of more importance to them.

Distancing

One athlete (9%) reported that she used distancing to help cope with her pain. She reported using two different techniques, wishful thinking and the use of distraction. Both techniques helped her to ignore the pain and continue to perform.

Use of distraction. Tina talked about zoning out with the use of music. " I sing songs in my head (half laugh)...it just keeps you distracted..." (Tina, 9-10). She reported that there are lots of songs that she tends to sing though she could not remember what she sang on that particular day. However, she usually sang songs that she has on a tape which she uses in her pre-race preparation.

Wishful thinking. Tina also stated, "... I kind of knew (half laughs) that... eventually I was going to be out for a little bit, but I was kind of hoping it would go away I guess" (Tina, p.7). Having experienced the same injury previously in her athletic career, she talked about how she recognized the painful stimulus and was familiar with its consequences. However, she reported that she hoped that the pain would go away and so she would not have to deal with the injury or the rehabilitation process.

Social Support

Social Support. One athlete reported using social support. She referred to using her team as a support system throughout the race whenever she was struggling, including when she felt pain. The following quote illustrates how she relies on her teammates.

> ...if you have a long run ahead of you, just try to work through it with your team. I mean we are always running together so it is really easy ... I mean someone knows if you are struggling and they just really, our teammates keep us going all the time. (Tracy, p.9).

While the athlete discussed that social support is an important component to her team and she uses it on a daily basis, she reported that it was especially crucial when she was trying to finish the race while in pain.

Miscellaneous

Miscellaneous. Lastly, sixty-seven percent of the athletes (2 males and 5 females) reported a dimension that was placed under the highest dimension of miscellaneous. The five lower dimensions that were reported were increased adrenaline rush, high pain tolerance, having too much to lose, hindsight on ignoring advice, and poor performance is discouraging.

Three of the athletes talked about how their increase in adrenaline helped them to cope with the pain. They suggested that the adrenaline masked the pain while they were actually in the competition. For example, one athlete stated,

> ...But during matches, it never really hurt that bad. It was just during practice cause you know during matches the adrenaline is going. Usually you don't feel things as much. I mean you still feel it a little bit but you want to win the match more than you want to worry about the injury... (Ron, p.7).

One male and one female athlete talked about how they could not stop performing because there was too much at stake and they felt there was too much to lose. As Steve stated, "... it was something I had worked for the entire year and I wasn't going to let this slow me up at all!" (Steve, p.7). The amount of time and energy that the athletes had devoted to their sport and the preparation for the event was considered more important than the pain that the athletes were experiencing.

Two other athletes talked about their high pain tolerance and how they believed that helped them to cope with the pain and allowed them to continue performing. The following quote summarizes how Jackie believes her pain tolerance aids her.

> ...I am a strong-headed person and I can deal with pain easily. I don't know if it is just I have a high tolerance of PAIN, but, I can usually stand a lot of pain easily and keep going on it until I have to like stop myself or it gets to the point where I can't walk or anything like that... (Jackie, p.4).

Both athletes discussed that their tolerance for pain allowed them to continue because they did not interpret the pain as that bothersome. Instead they reported that they were able to simply block it out or ignore it because of their tolerance.

Hindsight on ignoring the advice her mother and doctor had given her was reported by Tina. She had seen a doctor for a minor injury and the doctor had suggested she not run for fear that she would create a more serious injury. However, she chose to run and did in fact create a more serious injury. When Tina was in her race and experienced pain, she said her first thought was, "...I should have listened to my mom who had been going with me to the doctors and knew I shouldn't be running...! (Tina, p.9).

The last dimension that was placed under the higher dimension of miscellaneous was the fact that the poor performance from the injury was very discouraging. Steve discussed how his performance was incredibly discouraging and how "...I was swimming slow and it felt awkward..."(Steve, p.11). The sensation of being slow and not in perfect form seemed to bother him more than the actual physical pain.

Summary

When asked what their thoughts and actions were immediately after they had felt the pain, athletes responded with a wide variety of different responses. Interestingly, all the athletes reported that in order to keep going they had to focus their attention away from the pain. What they chose to focus on varied dramatically among the athletes, but they all realized that they could not focus directly on the pain they were experiencing.

Some of the other strategies reported by the athletes were very similar in nature in that they also focused on something other than the actual pain. In fact, the only dimension in which the athletes reported focusing on the pain was the assessment of the situation. Even in this dimension athletes focused on the pain for only a short period of time and it was to assess if the athlete was able to continue performing. It is also important to note that every athlete reported a variety of thoughts, actions, and coping strategies. Every athlete was represented in at least two of the highest order dimensions. Six of the athletes were represented in five or more highest dimensions. This demonstrates that athletes use a variety of different strategies to cope with their pain while they are performing.

Ineffective Coping Strategies

Athletes were also asked what, if any, coping strategies they had used that were ineffective. The athletes were asked to elaborate on the strategy that they felt did not help them to continue performing while they were in pain. Athletes were told that the strategy did not have to come from the specific injury that had been discussed previously but could come from any of their past experiences. Seven of the eleven athletes (64%) reported that they could not think of a strategy that was ineffective. However, two male and two females could think of a strategy that they believed was either detrimental to their performance or was simply an ineffective means to cope.

Steve reported that getting upset about the sickness did not work. He talked about other "...guys that have had 104 degree fevers jump in and just BLOW everybody away and get out and are entirely sick..." (Steve, p.25). While he recognizes that he and other athletes make themselves sicker when they choose to keep going, he went on to discuss

that the only way you are going to perform is if you do not think about it. Getting upset about the sickness only distracts you and weakens your abilities.

The other male athlete discussed how trying to ignore the pain was not a successful strategy for him. Ron stated,

> I think a strategy that wouldn't work is just telling yourself that it doesn't hurt, because it DOES! And you have to deal with it, you can't just forget an injury. I mean completely just put it out...you have to realize that there is a problem and you have to cope with that however you feel is right (Ron, p.22).

Whether or not one should try to ignore the pain seems to be a controversial issue and may depend on the athlete. This athlete suggests that it is impossible to ignore the pain. Instead, one should address it by accepting it is there and finding an active coping strategy. Unlike Steve, Ron believed that acknowledging the pain helps to improve your coping abilities.

The female athletes reported two different strategies that they felt were ineffective. One female athlete reported that resting the injury was not an appropriate coping strategy. Sylvia elaborated on how the strategy was ineffective by saying "...if it hurts when I'm there and I'm going to get out and REST, like just sit around and get back in. It is still going to hurt when you haven't done anything for it..." (Sylvia, p.26). She continued to talk about how many of her teammates would rest a shoulder injury for a short period of time and then get back in the water. Sylvia believes that unless you actually treat the injury, a little bit of rest is not going to resolve the issue. Therefore, she suggests that when in pain, one should continue performing until they decide to stop and actually treat the injury.

Finally, Sylvia reported that the strategy she found unsuccessful was competing for others. She suggested that athletes must be competing for themselves and not for

their teammates or their coach. When one tries to compete for someone other than themselves, they lose motivation and become discouraged. She stated,

> ... when you are running and it gets hard or painful or just hard mentally you think why you are doing it. You can try to run for your teammates all the time, you can try to run for your coach all the time but when it comes down to it, it is only going to work if you are running for yourself. (Tracy, p.17).

Of the eleven athletes that were interviewed, only four of them could come up with an ineffective coping strategy. However, some of the athletes suggested that they are sure they have tried an ineffective strategy; they just could not remember one at the time. Jenny suggested that "I feel like if I dismissed it, then I forgot all about it" (Jenny, p.21). She suggested that if a coping strategy was ineffective, she would have dismissed it and, therefore, has forgotten she even tried it. Other athletes suggested that they felt similarly. Of the four that could remember the coping strategy that they felt was ineffective, there was little similarity between them. In fact, two of the athletes contradicted each other.

Where athletes learn their coping strategies

Athletes were asked to discuss from whom or where they felt they learned their coping strategies. All of the athletes reported at least one source though some of the athletes reported more than one source. While some of the athletes had very specific memories of when and how they learned their coping strategies, other athletes had more vague recollections of people they were around or situations they were in for extended periods of time. Whether the memory was vague or specific, all athletes could site at least one source and it was something that occurred before they came to college. For the compete list of sources, refer to Table 2.

Table 2

Where athletes learned their coping strategies

Sources	Number of Athletes (N=11)
Coach (before college)	5
Team	4
Experience	3
Siblings	3
Parents	2
Coach who was also his/her parent	2
School Expectation	1
Illness	1
Neighborhood	1
Camp	1

Many of the sources reported by the athletes were people; however some sources were experiences (Table 2). The most commonly reported source was a coach. Five athletes said that they learned their coping strategies from their coach. Another two athletes also said that they learned their coping strategy from their coach but their coach was also their parent. The second most commonly reported answer was teammates. Four of the athletes reported that they learned their coping strategies from their teammates. Three of the athletes said that their siblings taught them their coping strategies. Mothers and fathers were cited by two athletes. Other sources that were cited were school expectations (1 athlete), illness (1 athlete), the neighborhood (1 athlete), and camp (1 athlete).

While most of the sources reported were self-explanatory, school expectation and illness were not. Steve reported that he learned from school expectations,

> ... it was kind of known in our school that the swimmers we had a pretty rigorous practice schedule and just physical routine that we did compared to other sports and I think it was just known that we were kind of, I don't know, if you want to say like tough...I guess that motivated me to just work through it... (Steve, p.18).

One athlete reported that her illness taught her how to cope with pain. The following quote illustrates how her experiences with being sick taught her how to cope with difficult situations, ".. being sick for 3 months and stuff it really taught me just to keep going no matter what..." (Sandy, p.13).

Athletes reported a variety of sources from where they learned their coping skills. While many of the sources that were listed were authority figures in the athletes' life, some of the sources were experiences or peers.

Advice an athlete would give to another teammate

Participants were asked what advice they would give to a younger teammate who was concerned about participating with pain. Specifically, the participants were asked to give suggestions on how the athlete could cope with the pain so that he or she could continue to participate in the event. There was a total of 30 lowest order dimensions identified (See Table 3). These lowest order dimensions were organized into 10 middle order dimensions. These dimensions created a total of five highest order dimensions. The highest order dimensions were entitled: "personal decision to continue", "focus attention away from pain", "coping derived from individual differences", "seek treatment for injury", and "actively fight through pain". The most commonly reported dimension was "personal decision to continue" (72%), followed by "focus attention away from pain" (63%), "coping derived from individual differences"(36%), "seek treatment for injury (36%), and "actively fight through pain" (27%).

Table 3

Advice athletes would give to a peer to continue performing in pain (N=11)

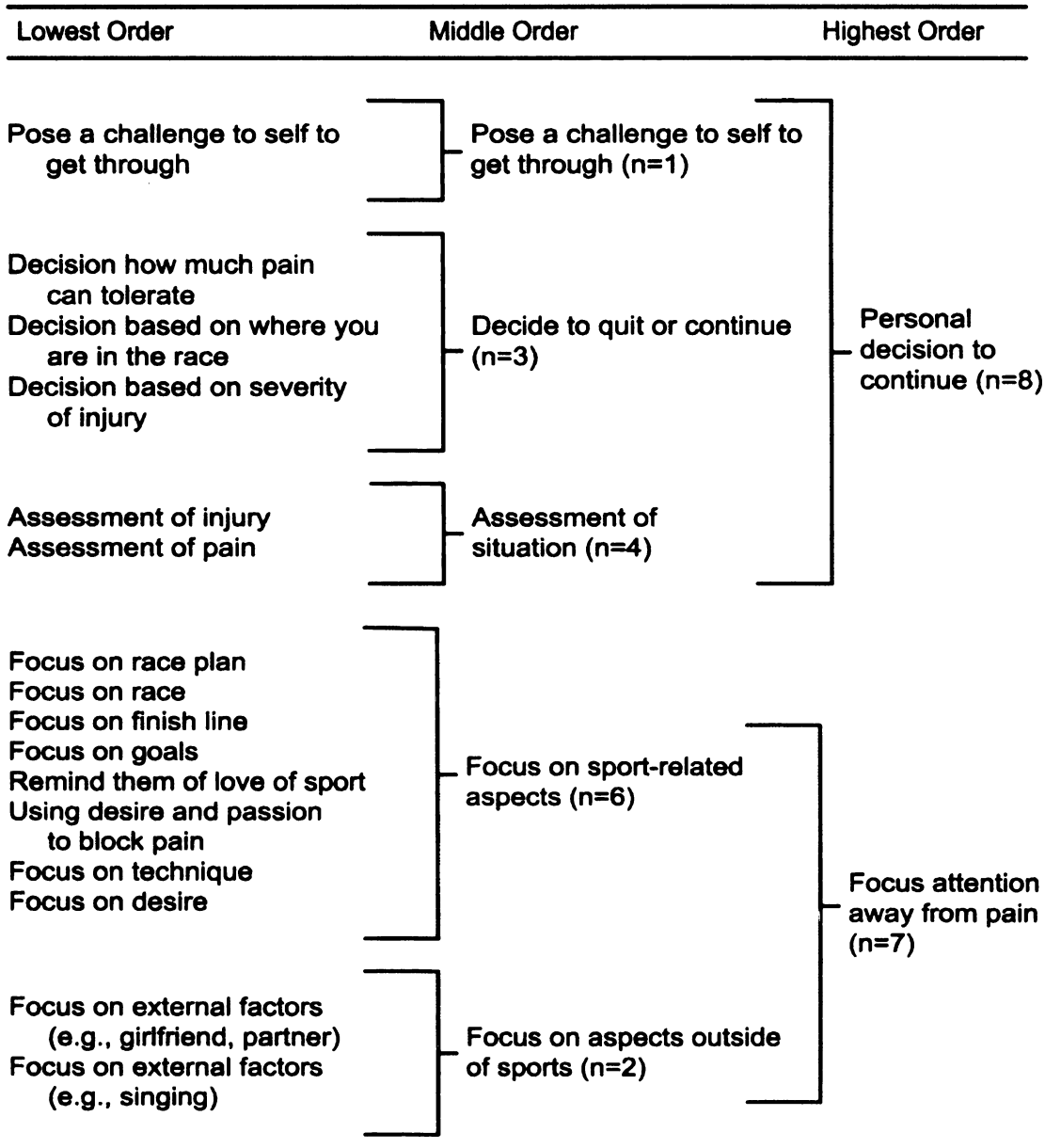
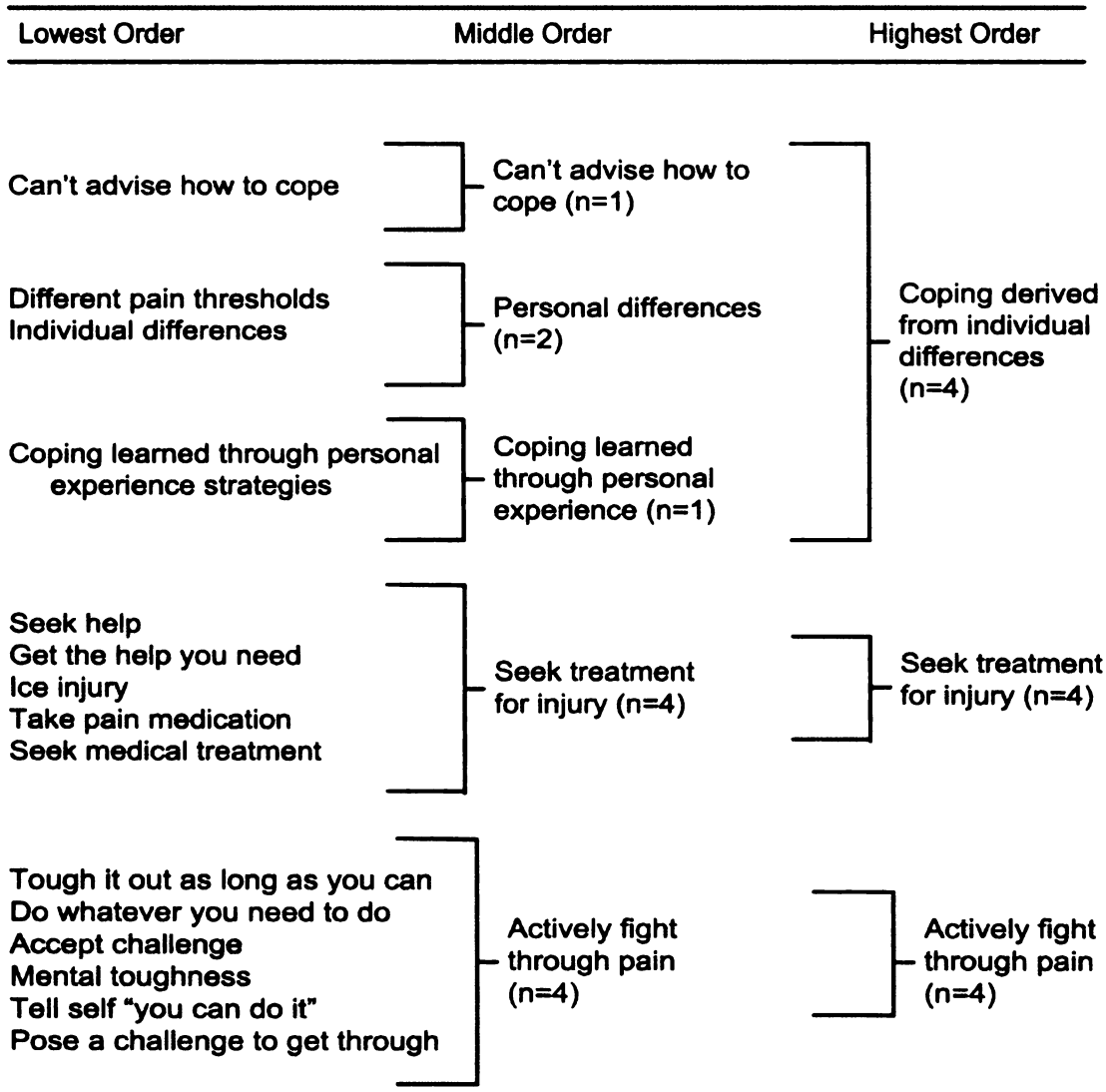


Table 3

Advice athletes would give to a peer to continue performing in pain (continued)



Personal Decision to Continue

Four female and four male athletes (73%) suggested that it is the athlete's responsibility to decide to continue when they first perceive pain. It is a decision that can only be determined by the athletes and it is their personal responsibility. This highest order dimension includes three middle order dimensions: assessment of the situation, decide to stop or continue, and pose a challenge to self to get through.

Assessment. The following quote illustrates how the athlete acknowledges that there is a difference between pain and injury. The athlete must assess the situation and determine whether he or she is injured or just in pain.

> ...I would say take the time off that you need to take off, until there is a difference between being hurt and being injured. ...You can do whatever when you are hurt, but when you're injured, you got to take your time off. But if it is hurt you just keep going through it. So if he is injured right now, go ahead take a little time off and kind of work it off, rehabilitate it. But once it goes from being an injured ligament or whatever to [being] hurt, that is when you really need to ...Step up to it. (Rick, p.15).

Athletes also reported the belief that if you are physically capable to continue, then you should proceed until you can not physically do any more or you have finished that specific event. The following quotes illustrate how these two athletes believe it is important to continue if they are physically capable. "... I would tell them that...if they can't go, then they can't go...I would just tell them that you got to go as long as you can..." (Ron, p.20).

> ...You know it is just something you deal with, and if you DO THAT, take your few seconds to be like "oh that hurt!" *(laugh)*. Try to push off the wall. If you are CAPABLE of doing it, then do it! And when you are done, then deal with the fact that your ankles are now black and blue! (Sylvia, p.26).

Of the four athletes that reported the assessment of the situation aspect, three of them suggested it was the assessment of the actual pain while the fourth athlete talked

about assessing the injury. Whether the athletes believe they are physically capable of continuing to perform appears to be an important dimension to the athletes.

Decide to stop or continue. Twenty-seven percent (1 male and 2 females) of the athletes whose answers fell within the highest order of "personal decision to continue" reported that the decision of whether to continue or stop was vital. The decision of whether to stop or continue performing was based on numerous variables. One factor that the athletes suggested was where the individual was "in" the race, i.e., near the finish line or just beginning the race.

> ... if it is like a longer race, 400, and he pulled it in the beginning, like the first 100 meters, I would just say stop. Don't even bother...if you have 20 meters to go, you are not going to do much of anything else to it. (Tyler, p.11).

Tyler suggests that if there is just a short distance remaining, athletes should continue running because they are not going to do any more damage and they still have a chance. However, if the injury were to happen in the beginning of the race, the athlete explained that serious damage could be done and chances are the individual would not run well.

The severity of the injury and the amount of pain tolerance an individual has is also a determining factor of whether to continue or stop.

> ...and there is like a sharp excruciating pain. And what I would say is if it is just a dull pain and you have to race, race. Get through it. Ice afterwards or do what you need to do, or take time off and try to heal, or go to the doctor and try to figure out what's wrong. But if it's like a sharp pain where you can't even focus on anything else but the pain, I would say stop during the race. (Sandy, p.15).

Again, we see this interpretation of the situation and the pain the individual is experiencing. The severity of the injury, and the amount of pain the athlete is feeling are both factors which strongly influence the individual to continue participating or stop.

Pose a challenge to self to get through. Steve suggested that he would "...pose a challenge to them to get through it" (Steve, p.20). He suggested challenging the athletes to figure out a way to cope with the pain so that they could continue performing. He suggested that he would, "...joke around with them and (*pause*)... call them out on it [quitting] (Steve, p.20). Through the use of a challenge and embarrassment, Steve suggested that he would motivate the individual to cope with the pain and continue.

Focus Attention Away From Pain

Sixty-three percent of the athletes that were interviewed reported that they would advice other teammates to focus their attention away from the pain when they are trying to continue performing. This approach was suggested by five of the males and two of the females. The highest dimension was broken into two middle order themes, namely, "focus on sport-related aspects" and "focus on aspects outside of sport".

Focus attention on sport-related aspects. Of the individuals that suggested focusing attention away from the pain, 85% of them suggested focusing attention on sport-related aspects. There were a variety of aspects suggested including focusing on technique, desires, goals, and the race. The following quote illustrates how Steve places emphasis on the details of the race.

> ... I would tell them to focus on the race. You start focusing on ... the little things in your race. Either the way your hand goes into the water or the way you are pulling...Do everything you can to get your mind off the pain... (Steve, p.21).

Other athletes suggested the individual focus on more cognitive aspects such as goals and the desire to win. Tina discussed that a large part of the ability to cope "...depends on how bad you want it" (Tina, p.18).

Focus on aspects outside of sports. Two of the athletes suggested focusing on anything outside of the actual event in which the individual was currently participating. While both of the middle order dimensions (i.e., focus on sport-related aspects and focus on aspects outside of sport) are distraction techniques, this dimension suggests that the athletes distract themselves by thinking of positive thoughts that have nothing to do with the environment or activity in which they are currently participating. For example, one athlete stated, "...you are going to think of something, that is ...you think of your girlfriend or you think of any number of [a] thousand things." (Steve, p.23). Another athlete said, "...Try to do things to take their mind off the pain. Sing songs to ourselves if that is what it takes..." (Ron, p.20).

In summary, the athletes that suggested focusing attention away from pain were suggesting that the athlete try not to directly cope with the pain but rather ignore it. The athletes felt that the best way to ignore the pain was to focus the attention away from the pain and cognitively address another matter.

Coping Derived from Individual Differences

Thirty-six percent of the participants interviewed (1 male and 3 females) reported that coping was derived from individual differences. There were three middle order themes present; "can't advise how to cope", "personal differences", and "coping learned through personal experience".

Can't Advice How to Cope. One female suggested that you cannot advice an athlete how to cope because there are too many variables involved and each individual responds to things differently. The following quote illustrates how Jackie believed that each individual has differences that will affect their coping.

> ... you can't really advise someone how to [cope]. I have learned through my 4 years being here, you can NOT advise another individual on how to cope with pain, because I think by now ... if they haven't had injuries, you couldn't really tell them how to cope. ...You can give a person advice after they have hurt themselves on how to cope with it ... training wise...But in the middle of a routine, you can't really tell them how to cope with it. Or like "oh so, if you go out there this is how you cope with pain!" ...If you were to like sprain your ankle, it is so hard to tell, you know. There is that fine line of well is she going to be able to go? Is she the individual that can work through it? (Jackie, p.23).

Jackie suggested that you can not tell an individual how to cope with pain while they are actually performing. She suggests that she can give advise on experiences such as rehabilitation, but that is different than advising someone to cope with pain. When it comes to coping with the pain while you are actually performing, that is something individuals must figure out for themselves.

Personal differences. Two other athletes discussed individual differences, such as level of pain tolerance. Athletes suggested that because people can handle different levels of pain, it is hard to advise them how to cope. One athlete stated, "...I think it is a really tough thing knowing your body and knowing how much your body can take ... people have different pain thresholds some people can take a lot of pain and some can't..." (Sandy, p.15). Another athlete suggested, "...It kind of comes down to...pain threshold...some are more and some are less [tolerant]..." (Rick, p.15).

It was suggested by the athletes that the individuals must decide if there body can continue to work through the pain and can handle the physical discomfort. This is not something that anyone can advice a person on, but is an assessment that must be done by the individual personally.

Coping learned through personal experience. Tracy suggested that coping with pain is something that athletes must learn on their own through different experiences and

is not something that can simply be taught by a fellow teammate. She stated, "I think it is really hard to tell ANYONE how to keep going. It is really something [they] have to figure out for themselves..." (Tracy, p.17).

All four of the athletes whose responses fell within the dimension of individual differences, agreed that there are different variables such as experience and pain tolerance that effect how an individual chooses to cope. These variables can not be determined by anyone other than the athlete that is experiencing the pain. Therefore, it is incredibly difficult, if not impossible, to tell an individual how to cope with pain while they are trying to continue performing.

Seek Treatment for Injury

Seek treatment for injury. Four male athletes (36%) would advise the athlete in pain to seek a form of treatment for the injury. The treatment could be as simple as ice and pain medication. The following quote represents Rick's dependence on pain medicine to help him cope "...and if you have to take BOTTLES of medicine of whatever kind, go ahead..." (Rick, p.15). Steve suggested that it is important to seek medical assistance from a professional.

> ...but if it was severe enough I would obviously tell them to seek HELP for it....This past weekend my buddy on my relay team...jammed these three fingers (*1st three fingers starting with pointer*). [In] a darker pool sometimes your depth perception gets thrown off in the water and when he came in to finish, these three fingers went back and his knuckles started to swell. He was getting in to do warm-up and I was like "well, maybe you should at least get it checked out. Put some ice on it, at least get the swelling down." But he didn't. I don't know, I would take care of it for sure (Steve, p.20).

Whether it was medication or professional help, the four athletes that discussed seeking treatment of the injury all referred to coping with the pain using some external intervention.

Actively Fight Through Pain

Actively fight through pain. The last highest order dimension that was commonly identified by four athletes (36%) was "actively fight through pain". Of those athletes that reported this particular theme, all of them were male. One athlete suggested that the individual must simply "...try to tough it out as long as you can" (Ron, p.19). Another athlete suggested that you not only have to tough it out, but you have to fight through the pain. The following quote illustrates how the athletes believe that it is simply a matter of wanting to continue and being able to fight through the pain.

> ...if thousands of people can do it before you, you should kind of step up to the challenge and know that if it is something you want you should actually work through it and kind of follow the example that they have set. (Rick, p.14)

Rick suggested that thousands of other athletes can perform through the pain, there is no reason that the individual cannot also. However, he also suggests that you must physically work through the pain and the pain must be addressed.

The same athlete that talked about "toughing it out" and another athlete suggested that mental toughness is also involved. Ron said, "it's a matter of mental toughness. I mean sometimes there is not a whole lot you can tell people" (Ron, p.20). This athlete suggests that it is a personal characteristic and the individual has to mentally tough it out as well as physically tough it out.

Gender Differences

Males and females reported similar coping strategies and both genders were represented throughout the different higher order themes. There was also no difference in the number of coping strategies applied by the male and female athletes. Both genders reported using a lot of coping strategies and some athletes reported using a few coping strategies. In regards to the types of coping strategies used, both genders reported approaches that fell within a variety of higher order themes. There was no particular theme that was dominated by the male or female athletes. Therefore, there were no gender differences found regarding the types of coping strategies applied.

Motivational Statements

Athletes were asked if they used any motivational statements to keep themselves performing when they were experiencing pain. Four of the females and one male (45%) reported that they did not use any motivational statements to keep themselves going when they were experiencing pain. The remaining athletes reported a variety of different motivational statements. Of the six athletes that reported a motivational statement, there was not one statement reported by two different athletes. The athletes had their own personal motivational statements to assist them through the pain. For a complete list of the motivational statements provided, see Table 4.

Table 4

Motivational statements used by athletes to encourage them to continue performing (N=6)

Don't be a wuss
It [pain] is just something you have to go through to get to the top
You just have to work through the little details

Pain is weakness leaving the body
No pain, no gain
Don't give up till it is over

It's only for a short time, it can't hurt forever
What are you willing to give up to win?
The faster you run, the sooner you are done

The will to win means nothing without the will to prepare
I have done it a hundred times, it is only one more mile
Pay your dues

You have got to put into it what you want to get out of it
Can't stop now!
Lord, give me strength to do your will

Confidence!
Keep it the same
Just one dismount

While the statements were not sorted into dimensions, there were some similarities found between some of the motivational statements. Some athletes suggested that they used general motivational statements such as "Can't stop now!" (Ron, p.15) or "Don't give up till it is over" (Tyler, p.17). Other athletes used motivational statements that were more sport dependent. For example, a gymnast said she would tell herself, "just one dismount" (Jenny, p.18). One of the females reported that she would say things like, "the faster you run, the sooner you are done" (Tina, p.9) or "I have done it a hundred times, it is only one more mile" (Tina, p.14).

There were also motivational statements that specifically addressed pain. Two of the more stereotypical pain statements, "no pain, no gain" (Tyler, p.7) and "pain is weakness leaving the body" (Steve, p.16), were both mentioned. However, there were other motivational statements that addressed pain as something one must go through in

order to be successful. The following quotes illustrate this perspective towards pain "you have to put into it what you want to get out of it" (Rick, p.12), "It [pain] is just something you have to go through to get to the top" (Sylvia, p.20), and "it is only for a short time, it can't hurt forever" (Tyler, p.7).

Two individuals suggested motivational statements that focused on winning and not on the pain. Tina said that she has posted her favorite quote in large print above her bed. She used it whenever she was in pain and having a hard time performing. She said that telling herself, "the will to win means nothing without the will to prepare" (Tina, p.13), gives her the motivation she needs. Tyler said he simply asks himself, ""What are you willing to give up to win?" (Tyler, p.7)

Lastly, there were a variety of motivational statements that were listed that fall under a general miscellaneous category (See Table 4). While no two people ever reported the same motivational statement, there were many characteristics that were similar amongst the quotes and served a similar purpose.

Summary

During their interviews, the athletes reported a variety of different coping strategies. The most commonly reported response to the painful situation was to focus attention away from the pain. All of the athletes reported using this technique in one form or another. Interestingly, this particular strategy was not mentioned by all the athletes when they were asked about giving a fellow teammate advice on how to continue performing while in pain. While there was some overlap between the advice the athletes would give a fellow teammate and the coping strategies they used themselves, there were also differences in the responses. Athletes also reported a variety of sources from which

they learned their coping strategies. In some situations the source was very specific and the learning occurred during a specific incident. However, other athletes talked about general situations that influenced their perceptions of pain over time. Lastly, a variety of motivational statements were provided by the athletes. There was no one particular motivational statement that was reported on more than one occasion although there were some similarities in the underlying themes of the statements.

Chapter 5
Discussion

The purpose of this study was to identify the different coping strategies used by collegiate athletes when they become injured and want to continue performing in a competition. The researcher also looked to identify any gender differences that may exist between the male's and female's coping strategies. Lastly, the researcher wanted to identify any coping motivational statements that the athletes may use to encourage themselves to continue performing.

When the athletes were asked what they did in order to help themselves continue performing and cope with the pain they were experiencing, there were a wide variety of answers that could be broken down into eleven highest orders including: focus attention away from pain, confrontive coping, psychological skills training assessment of the situation, use of medical support, cognitive dissonance, sustaining confidence through self talk, fear for the future, social support, distancing and miscellaneous. As other studies in the past have suggested, individuals rely on numerous coping strategies in conjunction with each other (Anshel, Jamieson & Raviv, 2000; Folkman & Lazarus, 1985; Gould, Eklund, & Jackson, 1993). There was only one athlete that reported coping strategies that fell within two of the highest order themes. On average, athletes reported they used strategies from five or six of the highest orders. The highest number of coping strategies reported was from Tracy and Jenny. They reported using coping strategies that fell within seven of the highest order themes. The variety of strategies reported by the athletes suggests that in order to cope with pain, one must rely on a variety of strategies.

The high number of reported coping strategies would also suggest that athletes are able to apply these coping strategies quickly and manipulate the strategies as needed.

Athletes were asked to discuss the coping strategies they used so they could continue performing in that one competition. They did not discuss the strategies that they applied over a long period of time. However, the athletes still reported that in that short period of time they used up to seven highest order coping strategies. For some of the athletes, their event was only three to four minutes long. This would suggest that the athletes are applying different coping strategies at the same time and are also moving between the coping strategies in a rapid fashion.

In their 1985 article, Folkman and Lazarus suggested that one is constantly processing the situation and determining how to cope with the stressor. The athletes in this study provided responses that would agree with Folkman and Lazarus. Throughout the interview, the athletes discussed assessing their pain as well as their injury. Not only did the athletes report assessing what was causing the stressor, but they also discussed assessing the environment. Many of the athletes suggested that the pain was not the deciding factor of whether or not they were going to continue performing and how they planned on coping. Instead the athletes discussed what was at stake and where they were in the competition. Athletes discussed the importance of the event and how it was needed in order to qualify for the regional competition and also talked about how much of the race or event was remaining. If there was only a short period left, the athletes suggested that one might as well finish. Therefore, while the injury and pain are important, the assessment of the environment and other variables also play a significant role in the decision to continue performing and on what coping strategies are used.

Research has suggested that the less control individuals feel they have on a particular situation, the more likely they are to use avoidance strategies (Anshel &

Kaissidis, 1997). When athletes are performing and feel the sudden onset of pain, one can assume that they do not feel a great deal of control. Pain is not something we can easily remove, especially when an injury is present. Therefore, as suggested by Anshel and Kaissidis, athletes that have just experienced an injury would be more likely to use avoidance strategies to cope with their pain. The strategies provided by the athletes in this study strongly support this concept. All of the athletes reported focusing their attention away from the pain and onto something else. Interestingly, many of the athletes directed their focus onto something they could control. For example, ten of the athletes focused on doing the task as well as possible. They focused on aspects such as their technique or finishing strong. In order to cope with the pain they were experiencing, they not only redirected their attention to something else so that they could ignore the pain, they chose to focus on something they felt they could control.

While all of the athletes reported using a coping technique that distracted them from the pain, many of the athletes also reported actively fighting through the pain. Nine of the participants talked about how they would fight through the pain and did not consider stopping. This finding is similar to that of Gould, Udry, Bridges and Beck (1997a) who reported that 90% of the athletes interviewed stated that they continued performing through the pain.

Some of the coping strategies that were reported by the athletes directly match those coping strategies that have been identified by Lazarus and Folkman (1984) (e.g., social support). However, some of Lazarus and Folkman's coping strategies were not represented in the information provided by the athletes. Accepting responsibility and positive reappraisal of the situation were two strategies that were not used by the athletes

at the onset of injury. This finding is not surprising. Both of these strategies occur when an individual has had time to process the stressor and the situation for a period of time. The athletes that were interviewed did not have time to really think about the injury and the pain in detail. They had time to appraise the situation and quickly choose a coping strategy in order to enable themselves to continue. When one positively reappraises the situation, they must look back at the situation in order to find the positives. These athletes were in the situation and therefore were not removed enough in order to look at it for positives or negatives. That is not to say that after the injury, many of the athletes did not look back at the experience and judge it for positive and negative aspects. In fact, during the interviews the athletes talked about how they learned something from a particular injury. The same is true for accepting responsibility for the injury. The athletes did not have time to accept responsibility for the pain they were experiencing. If this was the coping strategy that they applied, the athlete would have most likely stopped performing because accepting responsibility would not have helped them actually cope with the pain in a way that would have allowed them to continue.

Having to cope in the moment of competition may also explain why athletes did not seek social support. Much of the research regarding gender differences (Crocker & Graham, 1995; Ptacek, Smith, & Dodge, 1994; Ptacek, Smith, & Zanas, 1992) has suggested that females tend to use social support in order to cope with a stressor. Only one athlete (a female) reported using social support to cope with her pain. However, the ten remaining athletes did not reference using social support in any fashion. This was not considered a surprising finding. All of the sports that were chosen were individual sports. Athletes were competing by themselves and could not call in for a substitute if they

needed to rest or get an injury checked. Therefore, these athletes were not able to seek social support because all they had was themselves. The one athlete that did seek social support was in a slightly different situation than many of the other athletes. She was a track runner so she was able to talk to a teammate that was near her at the time the injury occurred. A gymnast, wrestler, or swimmer does not have this option. Therefore, seeking social support is simply not a coping strategy that could be considered.

Many of the strategies that the athletes reported using resembled self-talk. Self-talk has been defined as "any time you carry on an internal dialogue with yourself, such as giving yourself instructions and encouragement or interpreting what you are feeling or perceiving" (Zinsser, Bunker, Williams, 2001, p. 290). Many of the athletes used self talk in order to cope with their pain. In fact some of the assertions made during the athletes "assessment of the situation" directly related to the self talk approaches suggested in the previous definition. For example, the middle order entitled athletes discussed how they assessed their pain (feelings) and how they assessed how serious they believed the injury were (perceptions). The influence of self talk was so high that there was an entire theme entitled self talk where athletes discussed lines that they used to help encourage themselves and keep them motivated.

It is not surprising to find that many of the coping strategies resembled self-talk. Hardy, Gammage, and Hall (2001) interviewed 78 male and 72 female collegiate varsity athletes. Athletes were asked to discuss where, when, what and why they used self-talk. While they reported that they used self talk at competition, practice, and miscellaneous venues, athletes reported using self-talk the most when they were actually competing or practicing. The athletes that were interviewed regarding their coping strategies with pain

were being asked to consider a time when they were competing. If we know that athletes tend to use self-talk during a competitive situation when there is not physical pain, it is not surprising that this same coping strategy is applied when there is physical pain present.

Previous research such as that done by Van Raalte et al. (1994) has reported that tennis players felt that the self-talk improved their performance because it helped to calm them and to also motivate them. Hardy, Gammage, and Hall (2001) had a similar finding. While the athlete reported using cognitive self-talk and motivational self-talk, they reported that they used motivational self-talk much more so than they did the cognitive self-talk. If athletes are relying on self-talk as a motivational tool as well as a way to calm themselves, it would make sense that the coping strategies they are applying for pain would resemble self-talk. The athletes that were interviewed for this study reported that they had decided to continue performing and to work through the pain. Because of the physical discomfort of pain, it may be difficult to continue and motivation may be needed. Many of the athletes also reported that when they first experienced the pain their initial response was fear due to the fact they did not know what was wrong. Using self-talk to help calm themselves would allow them to not only assess the situation better but it would also allow them to continue performing with a little more focus on the event.

One of the main purposes of the study was to identify the different coping strategies that successful athletes use to cope with pain. It was hoped that successful coping strategies would be identified and that athletic trainers, sport psychologists, coaches and others could teach these strategies to the upcoming athletes. However, when

the athletes in the study were asked to give advice to a younger teammate on how to cope with pain while performing, four of the athletes directly stated that coping is something that is derived from personal experiences and is not something that can be taught to an athlete. Other athletes in the study also suggested that there is a great deal of personal decision involved when it comes to coping with an injury. This is in direct agreement with the Gould, Eklund and Jackson (1993) study that was done with Olympic wrestlers, where they suggested the strategies were developed from experience. Thus, different strategies are more or less effective for different people. Individuals must try out a variety of strategies before they find what works best for them. Another explanation may be that each individual athlete will interpret the injury, as well as the environment, differently. If athletes are starting from different interpretations of themselves and the environment, using the same coping strategy may not get them both the same positive results. Therefore, while more research is needed, we may not be able to identify the one or two "best coping strategies" available to athletes in order to help guide them. However, athletic trainers and sport psychologists can help athletes identify strategies that are safe while discouraging them from using physically harmful methods (e.g., abusing pain medication or binge drinking).

Instead of focusing on a particular coping strategy to teach athletes, professionals may want to focus attention on where athletes are learning their coping skills. All eleven athletes reported that they learned their coping strategies before they came to college. In fact, many of the athletes reported that the coping strategies were learned early on in their athletic careers. Nine of the athletes reported that they learned at least some of their coping strategies from an influential adult in their life (e.g., coach or parent). While

some of the athletes also suggested that they had learned about their strategies from the media, no one reported the media when they were asked to site a specific source from where they learned their strategy. It may be the case that they have learned from the media subconsciously and therefore did not think to report the media as a specific source. However, the fact that nine of the athletes could specifically site an incident where a parent or coach taught them their coping strategies suggests that adults who hold influential positions in athletes' lives (e.g., middle school and high school coaches as well as coaches of youth leagues and parents) may need to receive some training to help teach athletes how to identify what the difference is between "pain" and an "injury". It may also be beneficial to teach these coaches some ways to help the athlete identify the coping strategy that is effective and safe for them. Additional research is needed to understand the relationship between the level of cognitive development of youth athletes and how it impacts the coping strategies chosen.

Athletes' perspectives on pain and on how to cope with pain are learned from influential adults and affect how the athletes respond to pain and injury for the rest of their career. By the time the athletes have reached the collegiate level, the coping strategies have been solidified and are not likely to be dramatically influenced. Encarnacion, Meyers, Ryan, and Pease (2000) suggested that strategies may become psychologically ingrained to the point where they are natural responses. When asked if the athletes considered stopping when they first experienced the pain, seven of the athletes suggested that they had been trained to continue performing. The answer was so common that an entire theme was assigned to these answers. While it is important to be tough and to fight through small pains, more training may be needed to help coaches and

parents teach when one should continue performing and when one should recognize the injury and stop.

After looking at where athletes learn their coping strategies and the coping strategies that athletes report using, there are also some ethical issues that should be addressed. Some of the athletes reported that they were going to continue performing no matter what the pain level was simply because that is what they have been taught to do. This strategy could lead to serious and even permanent physical injury and, therefore, should not be supported by our culture. Strategies such as these should not be taught to athletes as an acceptable way to cope with pain. It is unethical for coaches, athletic trainers, and sport psychologists to suggest that a strategy that may lead to further physical injury is a positive strategy to cope with pain. It may be difficult to identify when it is appropriate for an athlete to continue performing and when an athlete needs to stop, especially when it is the coach or athlete making the decision. However, it is the influential adults' responsibility to teach the athlete how to identify "pain" versus "injury". The athletes interviewed in this study suggested that it was influential adults, such as coaches and parents, who taught them their coping strategies and their beliefs about stopping. Therefore, it should become a primary focus of these influential adults to not teach athletes coping strategies that could lead to further physical damage. The data collected in this study are important because it has allowed the researchers to identify the coping strategies this particular population uses when faced with pain. However, some of these strategies should not be taught to athletes simply because of the ethical implications and the risk that it places on the athletes' safety.

Past research has suggested that male and female athletes use different coping strategies to handle stressful situations (Ptacek, Smith, & Zanas, 1992; Ptacek, Smith, & Dodge, 1994; Crocker & Graham, 1995; Anshel, Williams & Hodge, 1997). There was no evidence in this study to support these findings. Males and females reported similar coping strategies and both genders were represented throughout the different higher order themes. There was also no difference in the number of coping strategies male and female athletes reported. Both genders reported using a variety of approaches that fell within a variety of higher order themes. Jensen et al. (1994) suggested that it is not surprising that we see males and females using different coping strategies because the two genders are socialized very differently. At a young age, girls are told it is okay to cry and to rely on others, while men are told to address their problems and to be independent. While the socialization for males and females may be different in the general culture, as the stakes in female sports become greater, male and female athletes are being socialized very similarly. As women become much more competitive and prominent in physical activity and sports, they are being held to the same standards as men. Crying and "feel better hugs" are no longer acceptable, especially for the competitive athlete. As women demand to be respected in the athletic world, they are conditioning themselves to compete in the male model. Traits that were once considered masculine, such as high pain tolerance, physical strength, and "toughness" are now being seen as more of an athletic trait. Therefore, one would expect to see males and females using similar coping strategies. If both genders are pulling from the same bank of experiences and coping strategies, it would make sense that similar choices are being made.

If females are starting to carry some of the more masculine traits, one would expect to see all of the athletes focusing more on approach coping strategies. Some of the literature has suggested that males and athletes tend to use more approach coping strategies and less avoidance coping strategies (Anshel, Porter, & Quek, 1998; Anshel Williams, & Williams, 2000). When Anshel, Williams, and Hodge (1997) looked at gender differences regarding coping with pain, they found that men try to use the pain to mentally psych themselves up. On the other hand, female athletes used avoidance strategies, particularly ignoring the injury. Interestingly, the athletes in this study all reported using some form of avoidance coping. One hundred percent of the athletes reported that they focused on something other than the pain. They avoided the situation at least until they were done performing. This is similar to the findings of Anshel, Jamieson, and Raviv (2001). Part of this could have to do with the fact that the athletes did not have time to stop and process the environment and the pain. During competition, they were not able to go through a process where they could receive a diagnosis, accept the pain and then find a way to make the pain a positive attribute (i.e., using it as a motivator). These injuries were all in the moment of competition and the athletes had to choose to stop or to continue performing to the best of their ability. When in such a difficult situation, it may be the case that athletes need to simply ignore the pain so that they can get through the one performance.

The choice of coping strategies appears to be personalized, as are the motivational statements that athletes choose to use. There was no motivational statement that more than one athlete reported using. At the same time, some athletes did not report using a motivational statement or motivating statement at all. Part of this may have to do with

the coping process being socialized. If a particular motivational statement was not taught to the athletes, they may not use it. Not having a common motivational statement reported also demonstrates how each athlete has individualized needs to help them cope. While some of the motivational statements had similarities, they were all very personal. Some of the motivational statements were specifically related to the sport, while others were specifically related to pain.

The comparison between what athletes reported they did while competing and what they would advice another athlete to do was particularly interesting. In many cases, the athletes' responses were different for the two situations. Four of the athletes suggested that athletes should seek medical treatment for their injury. However, when the athletes reported what they did personally, none of the athletes reported that they actually stopped performing to seek medical help. There was one athlete that reported that he used some form of medical treatment, but that was to protect an old injury. It was also interesting that while 100% of the athletes reported that they focused their attention away from the pain, only seven of the athletes suggested others do the same. There is no obvious explanation for why the athletes advise differently than they do. One suggestion made by the researcher is that the athletes that were performing were very emotionally and psychologically invested in their competition and this probably influenced their decision to continue performing. When advising another person, those emotions would not be present. It may also be the case that the athletes know what is socially acceptable and safe even though they do not always practice these behaviors. Therefore, when giving advice, they would suggest what they believe society agrees with. For example, one of the female track athletes started her response off by saying "this is horrible to

say" (Tina, p.18). When asked why she said it was horrible she replied that she should not be promoting to run when you are injured and should take a break. She recognized that it was not the best choice. While it can not be confirmed, other athletes may have given an answer that they know is what athletes should do even though they themselves do not practice the same behaviors.

Limitations

With all studies there are limitations. First and foremost, the athletes that were interviewed for this study were collegiate athletes in a Division I school. They were chosen due to their success in their sports and their experiences. They were also chosen because they have demonstrated the ability to cope with pain and continue performing. For these reasons the athletes were able to give very concrete coping strategies and were able to discuss the topic freely. With that being said, they are very different than athletes that are not as successful in their sport, or who have not found successful ways to cope with pain or who have not had experience with other injuries. The athletes interviewed are obviously very dedicated to their sport and sport is seen as a substantial part of their life. Therefore, the athletes may be more willing to withstand more physical pain or take more physical risks to meet their goals. While the information that the athletes provided was incredibly beneficial and has added to the body of knowledge that exists, the information provided may only apply to more accomplished athletes who have previously experienced injuries.

Another major limitation of the study was how the athletes interpreted the word "competition". The issue that was of interest in this study was how athletes coped during one specific athletic event during which they became injured. When the athletes were

asked if they continued competing when they initially felt the injury, many took this to mean competing for the entire season. Even when the researcher tried to clarify, the athletes still looked at the overall season of competition and had a harder time focusing on the one specific event. This did not negatively affect the data that were gathered but simply put a different perspective on the research question and responses. It also suggested that athletes tend to look at the big picture, the entire competition season, much more seriously than one particular race, meet or game.

Lastly, the athletes were asked to retrospectively remember how they coped with their pain. In some cases, the athletes experienced their injury recently (within the last year). However, some of the injuries that the athletes discussed were from over a year ago. The event that the researcher was asking the athlete to remember was also a short time period. Therefore, the athletes may have provided some information that they thought they did and not actually what they did to cope. Smith, Leffingwell, and Ptacek (1999) looked to see how accurately students could remember the coping strategies they applied in a stressful academic setting. They reported, "there was little indication that retrospective reports can be treated as equivalent to coping reports that are made in greater proximity to the stressful event... Concordance seems to become even poorer as the amount of stress reported by participants increases" (p.1057). This would suggest that asking athletes to recall what they were thinking during a traumatic event like experiencing an injury while competing, may not be the most accurate way to gain information. However, due to the lack of literature in this particular area, the research was being done on more of an exploratory level. Therefore, the use of retrospective data analysis was appropriate to gain a general understanding of the situation. It would also

be incredibly difficult if not impossible to have the athlete record their thoughts at the moment they became injured while competing. Future research may be warranted to talk with athletes that have just recently experienced an injury while they were performing to help decrease the amount of time between the actual event and the discussion of coping strategies.

Future Research

Based on the information collected, future lines of research would be warranted. While research has been conducted to see how athletes cope with pain at the moment of injury and during the recovery process, there is no extant literature that has looked at how athletes cope with pain that is from a chronic injury. In this particular case, athletes know that they will be in pain before they even begin competing. This can serve to their advantage in that they are able to plan for the pain and think about how they are going to cope. However, knowing that one is going to be playing in pain could be highly discouraging and unmotivating. Therefore, how do the athletes cope with the pain so that they can not only continue performing, but they can encourage themselves to start performing?

The athletes that were interviewed in this particular study all reported experiencing at least one serious injury while they were performing. Many of the athletes reported a variety of serious injuries that have occurred throughout their life time. It would be interesting to talk with athletes that have just experienced their first serious injury and were competing. Is their perspective different? While it is not believed that the athletes will report many, if any, new coping strategies, they may report one more prominently than another or may report using fewer strategies because of their lack of

experience. Gaining an understanding of what the initial injury experience is like may help us to take some of the traumatic association away from it.

The athletes that were interviewed currently have an excellent support system. The athletes have highly skilled coaches, athletic trainers, sport psychologists, and doctors. These resources are not available to many high school athletes. The high school coach, who is often a teacher, plays the role of coach, athletic trainer, and sport psychologist. Therefore, the athletes may not receive the care they need. Coaches of collegiate athletes have a variety of options when working with an injured athlete. They have the option to receive a medical red shirt for a year so that the athlete may recover. They also have a variety of options for rehabilitation and medical treatment. In the high school level these options are not available. High school athletes either play or they lose their place on the team. If the athletes are in their junior or senior year of high school, they may be focused on recruiters and gaining a scholarship for college. All of these factors substantially change the environmental setting that the high school athlete is assessing. Combine that with the fact that the athletes are younger and less mature, the coping strategies may be different. Similar interviews with high school athletes may be warranted to identify if the athletes use their coping strategies differently or interpret the situation differently.

The last important area of research that could be conducted involves athletes with disabilities. With the increase in opportunities for individuals with disabilities, there is a growing population of professional athletes with disabilities as well as recreational athletes with disabilities. Many of the same environmental stressors and factors affect these athletes in the same manner they would affect able-bodied athletes. However,

athletes with disabilities have other variables that may affect how they interpret the stressor differently. For example, if an individual who uses a wheelchair gets a shoulder injury, the consequences are very different than to an able-bodied athlete. The athlete with a disability has to now worry about all of his/or her daily living activities including mobility. In some situations, an athlete with a disability may also risk increasing their level of disability or exacerbating their disability through another injury. These are just two of the many differences that athletes with disabilities may need to consider when choosing to cope with pain and continue performing. Research is needed to identify the different stressors and how they may affect the coping process.

Appendices

Appendix A

Demographic Profile

Demographic Profile

Directions: *Please fill in the following questions. Questions may be completed by either circling the response or writing your answer on the line provided. All of the information provided on the survey will be kept confidential, so please answer the questions as honestly as possible.*

1. Gender: Female Male

2. Age: _____

3. Academic year: Freshman Sophomore Junior Senior 5th Year

4. Sport: Gymnastics Swimming Cross Country Wrestling

5. Do you participate in any other sports at the recreational level? YES NO

   If yes, what sport? _____

6. How many years have you been participating in your current sport? _____

7. Does your team have a sport psychologist? YES NO

8. Do you personally see or have you seen a sport psychologist? YES NO

9. Injury History: In the chart below, please place a mark in the column labeled "X" if you have experienced that particular injury while participating in sports.

   In the box labeled "Continue Activity?" please circle "Yes" if you continued to perform after you became injured. Please circle "No" if you stopped performing after you became injured. If you experienced the injury more than once and only continued to perform some of the times, please indicate that by circling both "Yes" and "No".

   In the box labeled Pain Scale, please circle the number that indicates the amount of pain you experienced when the injury first occurred. A "1" refers to no pain at all, a "3" is moderate, uncomfortable pain, and a "5" is excruciating, intolerable pain. If you experienced the injury more than once, please circle the number that represents the time that was most painful for you.

INJURY	**X**	**CONTINUE ACTIVITY?**	**PAIN SCALE** *LOW HIGH*				
Sprain		YES NO	1	2	3	4	5
Stress Fracture		YES NO	1	2	3	4	5
Fracture		YES NO	1	2	3	4	5

Dislocation		YES NO	1	2	3	4	5
Deep Cut		YES NO	1	2	3	4	5
Torn Ligament		YES NO	1	2	3	4	5
Torn Muscle		YES NO	1	2	3	4	5
Overuse (e.g. tennis elbow)		YES NO	1	2	3	4	5
Dislocation		YES NO	1	2	3	4	5
Nerve Damage		YES NO	1	2	3	4	5
Other: _____		YES NO	1	2	3	4	5

10. Would you be willing to participate in an interview that asks about your injury history and how you dealt with your pain? YES NO

11. Would you be willing to have the interview taped. (All tapes will be considered confidential and will only be heard by the researchers. Upon completion of the project the taes will be destroyed). YES NO

12. If yes to questions 10 and 11, please provide the following contact information.

Name: _____

Home Phone: _____

Cell Phone: _____

Email Address: _____

Appendix B

Interview Questions

Interview Questions:

1. Describe a time for me when you were performing and you became injured but chose to continue competing.

2. When this occurred, did you consider stopping?

   - If yes, did you stop or keep going?

     - If no, what kept you going?

3. What thoughts did you have at the time you became injured? Did these thoughts change as you continued to perform?

   -Ask for examples of specific thoughts, strategies or actions if not provided

4. Had you ever experienced this painful feeling before? If yes, what where your thoughts the first time you felt this pain?

5. If you were to give me three verbs or phrases that describe how you kept going, what would they be?

6. Do you use any motivational statements to keep you going?

   - If yes, what are they?

7. Where did you learn your coping strategies?

8. Can you describe a time that you used these coping strategies when you were not performing in athletics?

9. If you were talking to another athlete who was afraid they might experience pain while they were competing, what would you suggest they do so that they can continue to participate in the event?

10. Have you ever tried any other strategies that you found to be effective but haven't mentioned?

    -Why do you think you chose not to use that coping strategy in the situation you explained to me?

11. Have you ever tried a strategy that was ineffective?

    -If yes, please describe the situation and the strategy.

12. What do you think about how society looks at continuing to perform with an injury?

- (Follow-up Probe) For example, we are seeing a trend where football players will return to play with a cast on their arm. What are your thoughts about these athletes' choices?

Appendix C

Consent Form

Coping Strategies Used by Collegiate Athletes to Continue Performing with Pain
Consent Form

Melissa Fraser, a masters student under the supervision of Dr. Martha Ewing at Michigan State University, is asking for your participation in her research study. The purposes of this project are: (a) to gain a better understanding of the different coping strategies that college aged athletes use to cope with pain at the moment of onset so that they can continue to compete; (b) to see if male athletes use different coping strategies than female athletes when they experience pain during a performance; and (c) to identify whether athletes use any slogans or key words to cope with the pain and persuade themselves to keep performing.

You will be asked to complete a short demographic profile that should take approximately 30 minutes to complete. The survey will ask you to provide some brief information about your sport and injury history. If randomly selected, you will then be asked to participate in an interview. The interview should last approximately a half an hour and will ask about your experiences performing with physical pain and how you generally cope with pain while performing. Lastly, after the interview has been completed, you may be contacted and asked to clarify a statement made during the interview.

All of the interviews will be recorded and transcribed. However, at the completion of the project, all of the tapes will be destroyed. In order to protect your privacy, all of the information you provide on the demographic profile and during the interview will remain confidential. Only the research investigators will have access to the data. Your name will also be replaced with a pseudonym through out the interview so that you can not be linked to your answers. All of the published results for this project will be based on the group findings and will not focus on one specific individual's responses.

You are not required to participate in this project. It is completely voluntary. The coaching staff will not be notified of who has or has not chosen to participate. Therefore, your participation will not effect your status on the team or your relationship with the coaching staff. You are also allowed to withdraw from the project at any time. Lastly, you have the right to skip any questions you are not comfortable answering.

If you have any questions regarding the project, please feel free to contact Melissa Fraser at (517) 323-2380 or fraserm1@msu.edu. You can also contact Dr. Martha Ewing at (517) 353-4652. If you have any questions or concerns regarding your rights as a project participant, or are dissatisfied at any time with any aspect of this project, you may contact anonymously, if you wish- Peter Vasilenko, Ph.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) by phone: (517) 355-2180, fax: (517) 432-4503, email: ucrihs@msu.edu , or regular mail: 202 Olds Hall, East Lansing, MI 48824.

Thanks for all of your time and help!

Melissa Fraser and Dr. Martha Ewing

I _____ (print name) voluntarily agree to participate in this project. I also agree to have my interview tape recorded.

_____ _____

(Signature)

(Date)

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