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COMPARISON OF SPORT COMPETITIVE ANXIETY LEVELS OF SAUDI ARABIAN
NATIONAL TEAM ATHLETES WITH AND WITHOUT DISABILITIES IN
COMPETITIONS

COMPARISON OF SPORT COMPETITIVE ANXIETY LEVELS OF SAUDI ARABIAN
NATIONAL TEAM ATHLETES WITH AND WITHOUT DISABILITIES IN
COMPETITIONS

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Kinesiology

By

Hassan Ahmad Halawani
Makkah Teachers' College
Bachelor of Education in Physical Education, 1993
Umm Al-Qura University
Master of Education in Sport Curriculums and Instructions, 2002
University of Arkansas
Master of Education in Physical Education, 2005

May 2012
University of Arkansas

ABSTRACT

Anxiety in sport is complex and can lead to a number of undesirable consequences such as burnout, performance difficulties, interpersonal problems, and injury. The purpose of this study was to compare whether significant differences existed in the levels of somatic anxiety, worry, and concentration disruption between individuals of the Saudi Arabian national team with and without disabilities in competitions. In addition, differences in somatic anxiety, worry, and concentration disruption were examined between athletes in an individual or team sport. The Sport Anxiety Scale (SAS-2, Smith et. al, 2006) was employed to measure the subscales of somatic anxiety, worry, and consternation disruption.

Participants were 120 Saudi Arabian national team athletes with and without disabilities who participated in competitions during the 2010 competitive season. Sixty Saudi Arabian national team athletes with disabilities from four different sports (track and field, table tennis, wheelchair basketball and volleyball) were surveyed. Another 60 Saudi Arabian national team athletes without disabilities who competed in the same four sports were also surveyed. Athletes' ages ranged from 18-35 years. Furthermore, athletes varied in their level of competitive experience.

Results of the multivariate analysis indicated that there were no statistically significant differences between athletes with and without disabilities or between individual and team sport participants in their levels of somatic anxiety, worry, and concentration disruption.

This dissertation is approved for recommendation
to the Graduate Council

Dissertation Director:

Cathy Lirgg, Ph.D.

Dissertation Committee:

Dean Gorman, Ph.D.

Sharon Hunt, Ed.D.

Barbara Gartin, Ed.D.

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Hassan Ahmad Halawani

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Last but not least, to my holy capital city, to all friends, I miss you, and I will be back soon.

DEDICATION

To my lovely wife, Taiba, since we started, you have supported me toward my life and this goal. Your keen interest, strong encouragement, and substantial motivation have assisted me to strive toward the completion of this dissertation. You have provided me with passion and inspiration that no one else could provide. Thank you and May Allah bless you.

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CHAPTER I

Introduction

Anxiety is a common response to stress, and it is ranked as the first in prevalence of psychological illnesses. It occurs in the transitional periods of life, such as transfer from home to school, from childhood to adolescence, from work to retirement, or fertile period to menopause for women. Anxiety is a relatively recent term, and people use a number of expressions to describe the nuances of this feeling such as fear, stress, uncertainty, concern, and other popular expressions such as jittering, lack of patience, tension, etc.

Naturally, there is a difference between desirable normal anxiety, such as the anxiety before an exam or anxiety at work, and the more severe and detrimental type of anxiety that requires medical attention. A normal degree of anxiety is healthy and positive because it pushes the human mechanism to avert possible or potential hazards in daily life. It benefits in the preservation of the self and to success in the demonstration of life, but the problem lies in the increasing level or the intensity of the anxiety that arises without any apparent reason (Davis, Robbins, & McKay, 2008).

To relieve anxiety, people often choose to participate in sports. Actually, sports are a good way to a better life. It is well known that for each kind of sport, there are some psychological characteristics that differ from other types of sporting activities, whether regarding the nature or contents of the components or type of activity, or in relation to the nature of motor skills or capabilities or plans for what should be characterized by the athletes from a psychological prospective (Cashmore, 2002). In addition, the impact of competition can depend on the outcome of sporting competition, such as winning and defeat, and even extends to the

psychological and educational aspect that contributes to influence the formation and development capabilities of the athletes such as knowledge and physical skills.

According to Moran (2004), the theoretical aspects of athletes' performances contain four dimensions: physical, technical, tactical and psychological. For the last dimension, asking athletes about their individual experiences may assist in obtaining helpful insights.

The term stress denotes a complex psychobiological process consisting of three major components: stressors, threats and anxiety. Stressors refer to any situations or circumstances that can be considered as potentially harmful or frustrating. Threat is the reaction to a particular stressor. Anxiety is the emotional reaction to the stressors or the threat irrespective of its objective presence. Anxiety can also be caused by thoughts and memories of something that is threatening. Anxiety states can be characterized by the emotional reactions (state anxiety) such as feelings of tension and apprehensions, and physiological changes such as the increased heart rate and blood pressure. The intensity of the anxiety level varies and fluctuates depending on the amount of the perceived threat. Trait anxiety refers to a stable behavioral disposition or trait. Trait anxiety is not often obvious in an athlete's behavior but can be inferred from the level of their anxiety. Comparing trait anxiety athletes to those who have state anxiety, the former is more prone to perceiving a wide range of stimulus as dangerous (Hackfort & Spielberger, 1989).

Although anxiety is widely recognized as a significant contributor to levels of athletic performance, it has both pros and cons. It plays an important role in sporting performance on how athletes can react in competitions to respond positively to the intimidation of the surroundings. Athletes usually react both physically and mentally to the competition and anxiety will have a negative impact on their performance. Different terms like stress, arousal, and anxiety are used to express this physical or mental reaction. Somatic anxiety pertains to the body

and includes increase in heart rate, muscle tension and sweating etc. Cognitive anxiety is irrational thoughts related to the sport that haunts athletes. Terry and Slade (1995) reported that anxiety is multi-dimensional as it includes both somatic and cognitive elements. The relationship between cognitive anxiety and sports performance is usually that of a dual one: the increase of unreasonable thoughts will decrease the performance of the athlete. Therefore, it usually has a negative impact on the athletic performance both before the competition and throughout the competition. On the other hand, athletes consider that somatic anxiety, in fact, enhances the performance. A favorable level of anxiety improves performance and more anxiety decreases performance; therefore, it has an Inverted-U relationship with performance. Taylor (1996) used the word intensity instead of anxiety as the term anxiety can cause confusion in the athletes and can mislead them to believe it as nervousness and that will affect their performance. For him, athletes need to have a balance between over intensity and under-intensity so that they can produce optimal performance.

Both able-bodied athletes and athletes with disabilities have problems with anxiety. According to Asken (1991), many studies have indicated that there are great similarities in psychological characteristics between able-bodied athletes and athletes with disabilities. Logically, athletes with disabilities would also get advantages from the same psychological characteristics that have been seen in able-bodied athletes.

Regardless of sport activities, athletes may experience anxiety in pursuit of success. Whether they are playing for a team or as individuals, athletes are always in competition, which means that there must be a winner just as there must be a loser. The effects of anxiety on athletes and on athletic performance has been a topic of several studies and researchers have concluded that the level of competitive state anxiety is much higher in individual competitors as

well as in amateur athletes, than competitive state anxiety levels in professional and team sport athletes. However, athletes who participate in individual rather than team sports tend to experience different levels of anxiety depending on the nature of their sport; that is to say, individual athletes who participate in non-contact sports have typically reported state anxiety at lower levels than participants of contact sports (Simon & Martens, 1977).

Sports researchers have recently studied differences among individuals as well as a variety of situational variables with the potential to influence competition anxiety (Smith & Smoll, 1990; Vealey, 1990). Certain researchers, for example, have proposed that the social nature of a competition, meaning whether the competition is an individual or team sport, is a determining factor as to the level of anxiety an athlete may experience. In addition, these same researchers have suggested that individual sports will cause greater levels of anxiety than team competitions (Martens, Burton, Vealey, Bump, & Smith, 1990; Smith & Smoll, 1990). Research studies, however, have not proven these theories conclusive. In fact, some research has shown that anxiety levels in athletes before a competition register the same for individual and team competition athletes. Martin and Hall (1997) mentioned that one possible clarification for these conflicting results may stem from the use of between-sport designs which do not control for sport factors and individual differences which may influence the relationship between the team and individual sport situation and sport competition anxiety.

In light of the challenges to athletes with disabilities, the Saudi Sports Federation for Special Needs was founded as a result of a decision made by Royal Prince Faisal bin Fahd May-Allah forgive him in 1992. The Federation aims to work on the deployment and expansion of sports supervised by different groups of people with disabilities throughout the Kingdom of

Saudi Arabia. They work on the development and upgrading of competition locally and regionally and thus facilitate opportunities for sports for all categories of people with disabilities.

Purpose of the Study

In the Kingdom of Saudi Arabia, there are only a handful of studies conducted on trait and state anxiety. With this initiative, this study will create a baseline that will cater to the psychological and training needs of athletes with and without disabilities. The purpose of the present study is to compare the individual differences in the levels of somatic anxiety, worry, and concentration disruption of Saudi Arabian national team with and without disabilities in competitions.

Research Questions

Saudi Arabian national team athletes with and without disabilities experience various kinds of anxiety in competitions. Therefore, the following research questions are selected to guide this study:

- 1- Is there a difference in the levels of somatic anxiety between able-bodied Saudi Arabian national team athletes and those who are disabled as well as those who are on an individual or team sport?
- 2- Is there a difference in the levels of worry between able-bodied Saudi Arabian national team athletes and those who are disabled as well as those who are on an individual or team sport?
- 3- Is there a difference in the levels of concentration disruption between able-bodied Saudi Arabian national team athletes and those who are disabled as well as those who are on an individual or team sport?

Definition of Terms

For the purpose of this study, the following terms were defined as follows:

Anxiety: Anxiety is the emotional and physiological response to a stimulus. It has two aspects: somatic (physical) and cognitive (mental) (Cashmore, 2002). Also, anxiety is mentioned as a state of uneasiness, accompanied by dysphoria and somatic signs and symptoms of worry, concentrated focus on possible failure, misfortune or danger (Corman, 2003).

Cognitive Anxiety: Thoughts, feelings and perceptions that occur as a response to arousal which affect the physical body negatively (Davidson & Schwartz, 1976).

Disability: Numerous terms have been used to describe individuals with disabilities. For this paper, the term “person with disability” will be used to represent physical disabilities only.

Disability Sport: The term disability sport is used as a broad term to denote all kinds of competitive sports for people with a disability. For example, it includes the various terms used currently such as deaf sports, wheelchair sports, handicapped sports, disabled sports etc. (Depauw & Gavron, 2005).

Somatic Anxiety: Physical changes or symptoms in the body that occur as a response to arousal (Martens, Burton, Vealey, Bump, & Smith, 1990).

Sport Anxiety Scale-2 (SAS-2): It is a multidimensional measure of competitive anxiety which contain subscales of cognitive (expressed as worry and concentration disruption) and somatic trait anxiety (Smith, Smoll, Cumming, & Grossbard, 2006).

Sport-Performance: An integration of the mental, emotional and physical functions of athletes that execute sport related skills and exercises with utilization of motivation, self-efficacy, high awareness and goal orientation in training or competitive games (Murphy, 2005).

State Anxiety: Anxiety which adjusts according to situation, sometimes from minute to minute. State anxiety refers to the dynamic nature of anxiety.

Trait Anxiety: A personal predisposition to behave or conduct one's self in a certain way and respond. In contrast to state anxiety, which is relatively short-term, trait anxiety is more or less long-term.

Delimitations

The following delimitation will be recognized in the study's design and methods. The research will be limited to male national team athletes with physical disabilities and without disabilities in the Kingdom of Saudi Arabia. Therefore, the results may not be generalized to females or athletes from other countries. In addition, results may differ with less elite athletes.

Limitations

The statistical power of the findings in this study will be limited by the lack of availability of a large sample of national team athletes with disabilities.

Assumptions

The following assumptions were established for the study:

1. All athletes will answer the Sport Anxiety Scale-2 honestly.
2. All athletes will be able to understand the questions clearly.

Significance of the Study

Beneficial information resulting from this research will be provided to the Saudi Arabian Ministry of Education, General Presidency for Youth Welfare, Saudi Sports Federation for Special Needs, and will be accessible to anyone who is in charge of improving and developing the field of sport psychology programs for athletes with and without disabilities in the Kingdom of Saudi Arabia. An underlying intention will be to create a strong sense of awareness among coaches and sport psychologists of different national teams of the need to integrate techniques for the management of anxiety in their respective local, national and international competitions. Although the importance of studying the psychological factors associated with disability sports

has been demonstrated in the United States, there is a scarcity of research regarding the application of sports psychology to athletes with and without disabilities in Saudi Arabia.

Although the Kingdom of Saudi Arabia has recently adopted the policy of allowing athletes with special needs to participate in international competitions, it is disappointing that most teams in Saudi Arabia still suffer from a lack of sport psychologists in the area of disabilities. Therefore, this study will explore issues concerning the applicability of mental skills training programs for athletes with disabilities. Finally, it is hoped that the research will change the way of a perception from disability to possibility by trying to lead the way presenting the specific kinds of techniques, practices, and support approaches that will make this new model of possibility a reality.

CHAPTER II

Literature Review

The purpose of this chapter is to present important segments and themes of the current study that synthesizes the aspects of anxiety, competitive anxiety and sport- performance, anxiety in athletes with disabilities, measuring anxiety in athletes, sports in the Kingdom of Saudi Arabia, and sports for athletes with disabilities in Saudi Arabia:

Anxiety

Emotional states and their effect on performance and behavior have long been a topic of study in sport psychology. Anxiety, in particular, has been widely analyzed for its effect on the individual athlete, specifically in competitive situations. According to Leary and Kowalski (1993), anxiety can be defined as an unfavorable and self-defeating emotional response to perceived physical or psychological danger, along with physiological stimulation and with the purpose of evading the physical location or emotional state where the on-set of anxiety took place. Sport literature often associates anxiety with the level of perceived competition or risk (Hoar, Kowalski, Gaudreau, & Crocker, 2006).

This section will address the expansion of research and findings as they relate to effects on performance. Different types of anxiety, as well as the various tools that have been created to measure anxiety, test the health of athletes, and determine the effects of competitive anxiety will be introduced. According to Seligman, Walker, and Rosenhan (2001), anxiety is a physiological state differentiated by cognitive, somatic, emotional, and behavioral components. These components combine to generate feelings generally referred to as fear, apprehension, or worry. Anxiety is often accompanied by physical symptoms such as heart palpitations, nausea, chest pain, shortness of breath, or headache. In addition, Horn (2002) defines anxiety as feelings of

nervousness and tension, paralleling levels of excitement. The exploration of anxiety as a variable in research literature is, and has been, studied universally.

The physiological components of anxiety vary because the level and intensity of anxiety fluctuate depending on several factors; that is, anxiety is not constant. Internal or personal contributing factors include an individual's emotional state, and previous experience and training, while external or situational factors may include how soon the competition is to take place. Therefore, anxiety is a result of athletes doubting their abilities to handle situations that produce stress (Humara, 1999).

Bello (2009) states that theories on anxiety have changed as the tools used for observation and assessment have developed and evolved. New methods in the assessment of anxiety call for new anxiety models, concepts, and definitions. One of the major developments in the concept of anxiety occurred when "anxiety" went from being a word used in a general sense, to a more specific human trait and state of being. Anxiety has been further subcategorized into cognitive and somatic anxiety.

Reilly and Williams (2003) identified seven alterable categories which may require modification by an athlete in order to lower stress and anxiety levels. These categories include: a) levels of physical, psychological, and environmental demands; b) pressures and expectations, both from others and from the athlete him or herself; c) relationship dynamics, positive and negative, with relatives and acquaintances; d) concerns about the future and life direction; and e) all other uncategorized sources of stress. Reilly and Williams have assigned to each category a list of coping mechanisms the athlete may employ in order to reduce stress and anxiety in that specific area. For example, to deal with physical demands, Reilly and Williams recommend

logical reasoning, mental preparation before a competition, positive attitude and behavior, and training hard but sensibly.

Components of Anxiety

Anxiety can be identified as cognitive or somatic. Most research has confirmed that the capacity to deal with anxiety is an integral part of success in competitive sports, especially at the highest competitive levels.

The difference between somatic and physiological anxiety has to do with subjectivity versus objectivity in terms of the way each is measured or perceived. While both refer to the condition of anxiety resulting from involuntary arousal, somatic anxiety is subjectively defined by one's own perception or assessment of the condition, whereas physiological anxiety is objectively measured using physiological evaluation. Symptoms reported by the individual, such as rapid heart rate, shortness of breath, clammy hands, butterflies in one's stomach and tense muscles are typical of what can be classified as somatic anxiety (Martens et al, 1990).

In addition to the physical or physiological aspects of anxiety, Martens and colleagues (1990) address cognitive anxiety in terms of its mental effects. Cognitive anxiety occurs in the form of negative thoughts and perceptions of the self and one's ability to succeed, or in the case of competition, to win. Cognitive anxiety affects one's ability to concentrate, and therefore one's ability to perform, because of negative mental distractions having to do with insecurity, thoughts of failure, and the consequences of such a failure. In contrast, a positive mental state which fosters thoughts of success, belief in one's self and ability, and an overall positive attitude, is referred to as self-confidence, the opposite of cognitive anxiety. Additionally, cognitive anxiety is related to something negative that will cause an individual to feel worried prior to competition. Somatic anxiety, on the other hand, is related to pressure such as nervousness or

stress. Therefore, theoretically, cognitive anxiety has a negative relationship with performance while somatic anxiety has an inverted relationship.

Morris, Davis, and Hutchings (1981) observed a possible correlation between cognitive and somatic state anxiety, typically considered independent, based on arousal levels of each in stressful situations. Acquired responses to situations before a competition, such as warming-up, awareness of an audience, and going onto the field, are somatic in nature. These conditioned somatic responses may bring about symptoms of somatic anxiety, such as worry or nervous feelings. Cognitive responses to these same situations, in the form of negative self-talk and thoughts of failure, can also provoke somatic responses.

Swain and Jones (1993) conducted a study to measure how often athletes suffered symptoms of anxiety before a competition and concluded that levels of both cognitive and somatic anxiety increase in male and female athletes as the competition date approaches, and also that female athletes reported higher levels of somatic anxiety than male athletes. Wiggins (2005) found that the disparity between genders had to do with time, in that females experienced higher cognitive anxiety in the final 24 hours before the competition. While the timing and type of anxiety differed between male and female subjects, the direction of their anxiety unanimously heightened rather than lowered as the competition date neared.

Types of Anxiety: (State and Trait)

A distinction must be made between state and trait anxiety. According to Spielberger (1966), state anxiety is considerably more situational or contextual and is in most cases related to arousal of the autonomic nervous system. In contrast, trait anxiety is determined by the individual and his or her perspective in relation to coping with various situations. The effect of trait anxiety is dependent on an individual's attentiveness to his or her state anxiety; that is, an

individual with a greater awareness of his or her level of state anxiety will be more affected by trait anxiety (Hardy, Jones & Gould, 1996).

State anxiety, or A-State, involves an individual's perception of conscious, unpleasant feelings, including stress and apprehension, linked with stimulation of the autonomic nervous system. The transitory nature of A-State is responsible for its varying intensity, as well as a fluctuation in an individual's reaction time to circumstances perceived as threatening. Trait anxiety, or A-Trait, refers to personal motives or acquired behaviors that predispose an individual to perceive certain circumstances as a threat, which from an objective perspective are not threatening, and therefore, to respond with inappropriate intensity and magnitude with a state anxiety-based response to an objectively lesser danger (Spielberger, 1972).

Prior research conducted outside of exercise and sport psychology has determined that individuals who exhibit higher levels of trait anxiety when there is also a presence of state anxiety are more attentive to perceived danger or threatening information. In contrast, individuals who exhibit lower levels of trait anxiety while state anxious are less attentive to such threatening information (MacLeod, 1990). In regard to sports, individuals with low levels of trait anxiety will therefore benefit from high levels of state anxiety as it would enhance performance; however, individuals with high trait anxiety would be hindered by state anxiety and perform more poorly (Hardy et al., 1996).

Theories of Anxiety

A number of theories and hypotheses have been proposed to account for the relationship between arousal, or anxiety, and athletic performance.

Drive theory. Drive theory, based on information by Hull (1943), is a complex theory in itself, but as it applies to athletic performance, it is quite simple. There are three factors,

according to the drive theory, that affect performance: arousal level, acquired habits, and complexity of the task. As arousal is heightened, an individual's acquired and habitual response is likely to ensue; this habitual response is also called the dominant response. During competition, arousal levels are heightened in comparison to arousal levels during practice; furthermore, the level of arousal varies depending on the importance of a competition. Drive theory, therefore, predicts that peak athletic performance will occur during the most important competitions. Drive theory also assumes that more experienced athletes will have better habits than novice athletes and consequently, novice athletes will be more likely to err under pressure. Practically applied, drive theory states that novice athletes will acquire better skills and habits if they practice under low stress, and, as a result, low arousal conditions. Drive theory has been exceptionally valuable in understanding how experienced individuals perform better in competition while their less experienced counterparts tend to perform poorly. In addition, drive theory has provided important findings in terms of how an athlete's performance can be optimised. Still, drive theory cannot explain why, in some instances, experienced athletes perform poorly because of over-arousal or other accompanying psychological factors such as cognitive anxiety (Jarvis, 1999).

Inverted-U hypothesis (based on Oxendine, 1984). This theory proposes a curvilinear relationship between arousal and performance, meaning that increases in arousal have a positive effect on performance to a certain point, after which continued increases in arousal detrimentally affect performance. By the 1970s, psychologists were no longer satisfied with the findings of the drive theory and had turned their attention to the Inverted-U approach as a means of explaining the relationship between arousal and performance. The main idea of the Inverted-U approach is that every task has a possible optimum level of arousal. At this level, performance peaks, while

just above and just below this level, performance drops off. The complexity of skill required to carry out a task determines the optimum level of arousal. More complex tasks which involve fine motor skills, such as potting a ball in a snooker, are better suited for low levels of arousal. Rigorous and straight-forward tasks, such as weight-lifting, favor a higher level of optimum arousal (Jarvis, 1999).

Similar to the drive theory, the Inverted-U hypothesis has a practical and important application to sport psychology. A competitor's arousal level can be fine-tuned and optimized according to an analysis of the degree of motor skill precision required for particular sports. Therefore, relaxation techniques may be suggested as a means of lowering arousal levels in players of snooker and darts, while athletes who require higher levels of arousal, such as weightlifters and rugby players may employ exercises to "psych one's self up." The Inverted-U hypothesis, unlike the drive theory, effortlessly explains why experienced performers or athletes may err under pressure. Similar to the drive theory, the Inverted-U hypothesis does not consider the nature or origin of arousal, nor is it concerned with other contributing, performance-affective psychological factors, such as cognitive anxiety (Jarvis, 1999).

Individual zone of optimal functioning (IZOF) hypothesis. According to measurement of the individual zone of optimal functioning (IZOF), Hanin (1986) suggests that the degree or zone of pre-competition state anxiety required for optimal performance varies between individual athletes. The best possible performance for each athlete occurs when his or her pre-competition anxiety reaches a degree within the ideal range for the individual. Further, the IZOF model analyzes the emotional experiences of athletes, both positive and negative, by observing patterns, composition and function of such experiences, and employing an ideographic approach (Hanin, 2000). The IZOF has been applied to facilitative and debilitating emotions (Hanin & Syrja,

1995; Salminen, Liukkonen, & Hyvonen, 1995), mood states (Prapavessis & Grove, 1991), positive and negative influences (Hanin, 1989; Russell & Cox, 2000), and pre-competition state anxiety (Gould & Krane, 1992; Raglin & Morgan, 1988; Raglin & Morris, 1994).

In terms of gymnastic performance, and supporting a multi-dimensional anxiety-performance relationship, Dennis, Bartsokas, Lewthwaite, and Palin (1993) concluded that the zone of somatic state anxiety and self-confidence was more effective in predicting performance than zones of cognitive state anxiety. In addition, studies have shown that as cognitive and somatic anxiety moves farther from the individual's IZOF, the correlation to poor performance increases (Gould, Tuffey, Hardy, & Lochbaum, 1993). According to Krane (1993), cognitive and somatic anxiety above the IZOF produced the worst performances among individuals, while levels of anxiety which fell within or below the IZOF were linked to better functioning and performance.

In the face of this research, Jones (1991) argued that the relationship between anxiety and performance could not be explained based solely on the intensity of anxiety. Jones and Swain (1992) proposed that the degree of anxiety may be perceived differently, positively or negatively, depending on the individual. Further research suggested that successful, skilled athletes tended to view pre-competition anxiety as facilitative to better performance, while less-skilled athletes were more likely to view such anxiety as debilitating (Hanton & Jones, 1999; Jones, Hanton, & Swain, 1994; Jones & Swain, 1992; Jones, Swain & Hardy, 1993). Based on this finding, one could assume that the IZOF model and the directionality hypothesis are related. According to IZOF theory, an athlete's performance is best when his or her anxiety falls within a personal zone of optimal functioning. Directionality theory states that pre-competition anxiety perceived as facilitative prompts better performance. Therefore, if both of these hypotheses can be

considered logical and correct, an athlete performing within the zone of optimal functioning while perceiving pre-competition anxiety as facilitative will perform at his or her best.

The Multi-dimensional Anxiety Theory (Martens et al., 1990). This theory is based first and foremost on the notion that there are two well-defined components to competitive anxiety: a cognitive component and a somatic component. Each of these components has a distinct effect on performance and therefore, each can be separately manipulated and analyzed. The cognitive component involves negative concerns about one's ability, expectations of failure to perform, and anticipation of consequences which follow such a failure. The somatic component concerns itself with actual physiological effects of experiencing anxiety, for example, increased autonomic arousal which produces adverse physiological effects such as heart palpitations, muscle tension, shortness of breath and sweaty palms (Morris, Davis & Hutchings, 1981), and in some instances, nausea (Harris & Rovins, 1981).

In the field of sport psychology, a Multidimensional Theory of Anxiety came to be recognized through the development of Martens et al.'s Competitive State Anxiety Inventory-2 (CSAI-2) which offers a multidimensional measure of state anxiety exclusive to athletes and sports. According to the proposal by Martens et al. (1990), the relationship between somatic anxiety and performance could be illustrated with the Inverted-U shape, whereas the relationship between cognitive anxiety and performance was negatively linear. Furthermore, to make clearer the disconnect between somatic and cognitive anxiety, Martens et al. (1990) created a model focusing on the amount of time before an event. By administering their CSAI-2 to athlete participants at 48 hours, 24 hours, 2 hours, and 5 minutes before an important competition, Martens et al. (1990) were able to confirm that the cognitive component remained steady while the somatic component increased just before the beginning of the competitive event. Parfitt and

Hardy (1987) came to a similar conclusion in an earlier study, determining the relationship between cognitive and somatic anxiety to be such that low levels of somatic anxiety prior to an important event positively affected cognitive anxiety. Also, when cognitive anxiety was heightened prior to the significant event, and participants performed activities related to the competition, there were both positive and negative effects on somatic anxiety.

Catastrophe model (based on Hardy & Fazey, 1987). Recently, sport psychology has shifted its focus from the study of basic arousal to analysis on a deeper level of the complexities of the anxiety phenomena. Three dominant theories serve as models to explain the connection between anxiety and athletic performance: the catastrophe model, zones of optimal functioning performance, and reversal theory (Jarvis, 1999).

The Inverted-U hypothesis assumes that even the smallest alteration in arousal level will cause an equally small alteration in performance. Fazey and Hardy (1988) rejected this notion, pointing out that under certain conditions, any increase in arousal over the optimal level, no matter how small, can trigger a complete performance collapse. For example, high levels of cognitive anxiety (i.e. worry) in an athlete, exacerbated by a small increase in arousal can be devastating to athletic performance. Still, the Inverted-U hypothesis holds true in cases where cognitive anxiety is low, for example, when an athlete isn't very worried. However, as cognitive anxiety is heightened, it may reach a point just beyond the optimum level of arousal where athletic performance plummets, demonstrating the catastrophe model. As a rule, the catastrophe model has been difficult to test precisely; however, Hardy et al. (1994) conducted a study showing that athletes perform at their best and worst under high cognitive anxiety, and that at a certain point just beyond the optimum arousal level, the quality of performance abruptly drops off. To demonstrate application of these theories, 8 skilled Crown Green Bowlers were recruited

for two consecutive days to bowl three balls at a jack each day. On the first day of the experiment, the bowlers received objective instructions, delivered in a manner meant to generate low cognitive anxiety. On the second day, however, the bowlers received instructions specifically meant to seem “threatening” in order to raise the cognitive anxiety in the bowlers. To ensure that the bowlers’ cognitive anxiety was higher after receiving the “threatening” instructions, the CSIA-2 was administered. Participants were then instructed to perform shuttle runs in order to raise psychological arousal. During the shuttle runs, the participants’ heart rates were closely monitored. The results demonstrated a weak Inverted-U when levels of cognitive anxiety were low, but under conditions of high cognitive anxiety, the participants’ performance reached its peak and then dropped off completely, supporting the catastrophe model.

In general, the catastrophe model is more intricate than the Inverted-U hypothesis and therefore is capable of a deeper and more complex explanation and understanding of the arousal-performance relationship. Most significant and useful is the catastrophe model’s demonstration that cognitive anxiety is not fundamentally detrimental to performance, but that under certain conditions, anxiety is actually advantageous (Hardy, 1996).

Reversal theory (based on Smith & Apter, 1975). The reversal theory, which was proposed by Smith and Apter (1975), proved to be a remarkable development in performance anxiety literature, and was promoted and subsequently, made popular in sport literature by Robert Kerr (1985, 1987, 1997). Interestingly, the original purpose in the development of reversal theory was not to expound on the relationship between performance and arousal. Its focus was more general in nature; although the emphasis was on the emotional effect of arousal, the original reversal theory intended to explain personality and motivation in a general sense (Apter, 1984).

The basic application of reversal theory to performance anxiety has to do with an individual's perception of his or her own arousal level which, in turn, affects performance (Horn, 2002). Elevated levels of arousal may be interpreted as excitement (pleasant and beneficial) or anxiety (unpleasant and disadvantageous), while lower levels of arousal may be interpreted as relaxation (pleasant) or boredom (unpleasant). The individual's perception of arousal as pleasant or unpleasant is sometimes referred to as hedonic tone. Arousal and affect fluctuate on continua, and therefore, reversal theory assumes that the relationship between arousal and affective pleasure will be represented by two curves.

In applying reversal theory to anxiety-performance research, Kerr (1985, 1997) proposed that the continua of arousal and stress must be considered simultaneously, as they are related to reversal theory in combination. The results appear as four quadrants of anxiety, excitement, boredom and relaxation. Both the horizontal arousal continuum and the vertical axis express a high-to-low range. As arousal and stress (representing a discrepancy between environmental demands and the ability of the performer to respond) increase, the result is anxiety or overstimulation. Boredom, or understimulation, results from elevated stress and low arousal, and in contrast, lower levels of stress in combination with higher arousal results in excitement. Simultaneously low levels of arousal and stress result in sleep. Therefore, reversal theory allows for the incorporation of notions of arousal and stress. Reversal theory, from a basic understanding, states that arousal is not absolutely pleasant or unpleasant since arousal is perceived by the individual and contingent on an individual's metamotivational state. Therefore, arousal and its effects are dependent on an individual's perception of arousal as positive (paratelic) or as negative (telic).

Competitive Anxiety and Sport-Performance

Anxiety can enhance focus and sharpen athletic skill. For some athletes, however, the stress of performing well takes its toll in the form of performance anxiety, which dulls skill and performance execution. A great deal of the literature on the relationship between anxiety and performance has come from a cognitive-behavioral perspective.

Krohne (1988), similar to Martens et al. (1990), argued that the effect of competitive anxiety on athletic performance could not be predicted by general measures of anxiety due to the inadequate nature of such measures. During his research in determining the effectiveness of coping methods employed by tennis players, Krohne did, however, find that trait anxiety affects competitive athletic performance. Because trait anxiety is to a great degree indicative of personality, Krohne determined that techniques of extensive self-regulation have a significant balancing effect on anxiety due to a competitive activity.

Swain (1996) determined that cognitive and somatic anxiety provided important explanations for a variety of sporting task outcomes. Swain's study was based on Martens et al. (1990) and proposed to determine the relevance of competitive state anxiety and self-confidence in terms of their influence on performance. By examining intensity levels and direction (i.e., debilitating or facilitative) of competitive state anxiety and self-confidence, Swain's study served to explain variations in performance. To allow for a within-subjects analysis of the Competitive State Anxiety Inventory-2 (CSAI-2) and performance data, the study utilized a longitudinal design. Subjects graded their experienced intensity as either facilitative or debilitating to performance by completing the inventory's scales: an original scale as well as a directional scale. The study was comprised of ten subjects from Loughborough University men's basketball team who completed an adopted CSAI-2 20 minutes before each of six league matches. The measure,

used to objectively evaluate basketball performance, was designed by Sonstroem and Bernardo (1982). All of the subjects' modified CSAI-2 scores and performance scores were standardized and computed with the purpose of invalidating variation in between-subject responses.

Polynomial trend analyses expressed that, in terms of cognitive anxiety, the relationship between intensity and performance was most easily explained as an Inverted-U relationship, while the relationship between direction and performance could more easily be explained as a positive linear relationship. The Inverted-U relationship accounted for 18.4% of the variance while the positive linear relationship accounted for 23.4%. For somatic anxiety, 17% of performance variance was explained by a positive linear relationship between direction and performance, but less than 2% was explained by somatic anxiety intensity. An Inverted-U relationship expressed intensity in self-confidence and explained 21.2% of performance variance. These findings serve as further support and confirmation that the assessment of symptoms experienced based on the perception of the performers is of utmost importance. Furthermore, these findings call into question the relevance of using conventional competitive anxiety questionnaires which, in most cases, only represent measures of cognitive and physiological symptoms that have been labeled as anxiety only by the developers of the questionnaires themselves.

Gaynor (2005) confirmed Swain's claims and elaborated on the findings by applying the study to a variety of college athletes, positing the effectiveness of mediating therapy techniques. The hypothesis of the study claimed that hope is inversely proportional to athletic performance anxiety due to its function as protection against perceived threats, fear of being judged or evaluated negatively by others, and feelings of a loss of control. An evaluation measuring state and trait hope, fear of negative evaluation, perceived threat, causation origin, state and trait competitive sport anxiety, state anxiety, and self-efficacy, was completed by 80 Division I-AA

undergraduate athletes. The results were evaluated using path analysis to determine the reliability of a causal relationship between hope and performance anxiety based on the aforementioned variables of perceived threats, fear of negative evaluation, and feeling of uncontrollability. The results were conclusive for a model of trait hope which leads to a reduced state of trait performance anxiety through reduced fear of negative evaluation, lessened susceptibility to perceived stress, and a stronger origin of causation. State hope and state performance anxiety showed similar results, although the model's only significant aspect was shown in the self-confidence subscale of state competitive anxiety. The implications of these results indicate that athletic performance anxiety may be decreased by intervening increased trait hope.

Similarly, Plante and Booth (1997) also determined that anxiety has a significant effect on the performance of college level basketball players. Like Lazarus (2000), who linked emotional anxiety to competitive performance with four metatheoretical and theoretical positions: (a) stress and emotion should be considered as a single topic; (b) discrete emotion categories offer the richest and most useful information; (c) appraisal, coping, and relational meaning are essential theoretical constructs for stress and emotion; and (d) although process and structure are both essential to understanding, Plante and Booth agreed that sport-task performance could most definitely be explained by a biopsychosocial model. Substantiating the work of Lazarus, Plante, Booth, Legrand and LeScanff (2003) suggested that performance outcome of competitive javelin throwers could be predicted by the mood and anxiety level of participants.

Campen and Roberts (2001) provide a significant study involving recreational runners, which can also be applied to competitive runners, demonstrating possible effects of anxiety on

athletic performance. Campen and Roberts agree with the idea that trait and state anxiety, and an individual's perception of stress, were reliable in determining performance. Similarly, Purge, Jurimae, and Jurimae (2005) established that pre-competition stress levels were also indicative, and effectively so, in determining success amongst competitive rowers. In contrast, two other pre-competition studies, conducted by Burton and Naylor (1997) and Males and Kerr (1996) concluded that sport-performance cannot always be effectively predicted based on pre-competition stress. For example, based on a study conducted on nine elite slalom canoeists lasting an entire season, Males and Kerr (1996) found that performance success could not, in fact, be predicted efficiently by pre-competitive stress. Adding to this evidence, Burton and Naylor (1997) found competitive anxiety to be ineffective in predicting success in athletic performance and furthermore, not exclusively impairing. According to Burton and Naylor, reasonable levels of pre-competition anxiety may serve to motivate the athlete and regulate focus on the immediate competitive task. This self-awareness, focus, and attentiveness to an individual's performance may therefore motivate the athlete to strive for greater success. While the study's findings are convincing, the sample group was of such a modest size that some would argue that this hypothesis requires further study on greater numbers.

Anxiety in Athletes with Disabilities

Not all athletes with disabilities report experiencing anxiety in the same way that able-bodied athletes report it. In many cases, athletes with physical disabilities, such as those with amputations or spinal cord injury, have experienced previous life trauma because they have had to deal with the loss of their limbs. In the process of having to cope with such dramatic life changes, it is likely that these individuals developed effective coping skills. This experience may be why some athletes with disabilities do not report experiencing the same type of anxiety as do

able-bodied athletes. Masters et al (1995), examined the effects of training and competition on mood state and anxiety of 22 elite track athletes and swimmers with cerebral palsy. Three questionnaires were used: the State-Trait Anxiety Inventory (STAI), the Profile of Mood States and the Competitive State Anxiety Inventory-2 (CSAI-2). The results were similar to studies such as those conducted with able-bodied athletes. Athletes with a disability seemed to practice normal psychological responses to competition and training.

Ferreira, Chatzisarantis, Gaspar, and Campos (2007) conducted a study on 42 Portuguese athlete subjects from various sports and who had disabilities, participating in the national trials and at the national level Paralympic Games. The study focused on the analysis of chronological patterns of competitive anxiety factors by using the CSAI-2 at three different times before the competition: one week, two hours, and twenty minutes. The CSAI-2 measures intensity and direction of competitive performance anxiety. Analysis of the results showed that dimensions of cognitive and somatic anxiety were relatively similar between athletes with and without a disability, before a competition. The difference resulted in a measure of self-confidence where athletes with a disability tended to report lower self-confidence just before a competition.

Measuring Anxiety in Athletes

A multitude of sport specific psychological tools, surveys and inventories have been developed to assess both trait and state anxiety. Some of these inventories are: Sport Competition Anxiety Test (Martens, 1977), Competitive State Anxiety Test (Martens, 1977), Competitive State Anxiety Inventory-2 (Martens, Burton, Vealey, Bump, & Smith, 1990), Sport Anxiety Scale (Smith, Smoll & Schutz, 1990), Psychological Skills Inventory for Sport (Mahoney, Gabriel & Perkins, 1987), Athletic Coping Skills Inventory-28 (Smith, Schutz, Smoll

& Ptacek, 1995) and the Trait-State Sport Confidence Inventory (Vealey, 1986) (Williams & Krane, 1998). Several of these are reviewed next.

Martens et al. (1990) came up with a tool which assesses anxiety, specifically as it relates to athletic performance, by making use of general anxiety terms as described by Spielberger, and integrating definitions of general anxiety. Martens et al. (1990) defined anxiety, as it applies to athletics, as an emotional state that involves tension and apprehension, and which coincides with physical activity. Trait anxiety, as defined by Martens et al. is a tendency to view certain situations of athletic competition as threatening or non-threatening, followed by a response which occurs at different levels, but is defined as state anxiety.

Sport Competition Anxiety Test (SCAT). The SCAT was developed by Martens in 1977 as a questionnaire meant to be completed by athletes shortly before competition (Martens, et al., 1990). The test consists of 10 items with an additional 5 that are included to deter participant response monotony. Each item contains a statement about how a person feels while competing in a sport. Athletes select the option that best represents the frequency at which they agree with a statement. Options were: (1) hardly ever, (2) sometimes and (3) often. Examples of the items include:

"Competing against others is socially enjoyable."

"Before I compete I feel uneasy."

"Before I compete I worry about not performing well."

Ommundsen and Pedersen (1999) found that the SCAT was able to effectively detect the variation in the athletes' perception of their own competence as well as their experience of cognitive and somatic anxiety in sport competitions. Martens conducted extensive validity and reliability testing to assure that the items on the SCAT were effective in identifying high and low

anxiety competitors (Gill, 2000). Gill also reported that the SCAT meets and usually exceeds all generally accepted standards for psychological tests and that the test is reliable in sports competition, in the lab and in field research.

Competitive State Anxiety Inventory-2 (CSAI-2. Martens et al., 1990). The CSAI-2 measures competitive anxiety with the added modifications of a direction scale (Jones & Swain, 1992) as well as a scale to measure the frequency of disturbance (Swain & Jones, 1993). The CSAI-2 measures competitive anxiety by presenting participants with 27 items separated into the three categories of cognitive anxiety, somatic anxiety, and self-confidence. Each of the three categories consists of nine items to represent the specific anxiety-related construct. Participants rate their anxiety for each item on a scale of 1 (no anxiety at all) to 4 (very high level of anxiety) resulting in a score of 9 to 36 for each anxiety-related construct. According to Cronbach's alpha, the CSAI-2 is highly reliable, scoring consistently in the range of 0.79 to 0.90 (Martens et al., 1990).

In 1992, Jones and Swain added the direction scale to measure the intensity of their symptoms in terms of negative, meaning debilitating, or positive, meaning facilitative, and the relation of symptom intensity to subsequent competitive performance. The direction scale provides a numerical continuum from -3 ("very debilitating") to +3 ("very facilitative") where a score of 0 indicates no variation. Using the direction scale, participants prescribe scores of -3 to +3 to each item in each of the three categories. Therefore, the end result is a score ranging from -27 (least intensity and least effect on competitive performance) to +27 (greatest intensity and greatest effect on competitive performance) for each category: cognitive anxiety, somatic anxiety, and self-confidence. For this portion of the assessment, Cronbach's alpha shows a reliability rating of 0.80 to 0.89 for cognitive anxiety and 0.72 to 0.84 for somatic anxiety

(Hanton, Jones & Mullen, 2000; Jones & Hanton, 1996). The final modification to the CSAI-2, the frequency of intrusion scale, developed by Swain and Jones (1993), measures the frequency of symptom occurrences, including thoughts and sensations, on a scale from 1 (never) to 7 (constant) for each inventory item. Resulting scores range from 9 to 63 for each of the three categories. Currently there are no reliability scores available for the frequency of intrusion scale as the scale has only been investigated on a basic or primary level.

Sport Anxiety Scale-2 (SAS-2; Smith et al., 2006). Although there have been several assessment tools developed for the same purpose, Sport Anxiety Scale-2 (SAS-2) continues to stand out because of its ability to distinguish somatic anxiety, worry, and concentration disruption. The SAS-2 is a multidimensional measure of cognitive and somatic trait anxiety in sport-performance settings. According to Sepulveda (2008), Smith suggested that the SAS-2 has stronger factorial validity than the original scale did, and construct validity research indicates that scores relate to other psychological measures as expected. This scale is being used in the present study and will be discussed in greater details in the following chapter.

Sports in the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia is an ancient land with a rich heritage. When probing into the history of Saudi Arabia, we shall find numerous exciting ancient sports. Even today, Saudi Arabia recognizes those traditional games in its scope of sports, along with the more modern ones. Almost 75 % of Saudi Arabia is a desert landscape and yet there is no dearth of things to do in Saudi Arabia.

According to the Encyclopedia Britannica (2010), camel racing, horse racing and falconry are a few of the traditional sports still practiced in the Kingdom of Saudi Arabia. Camel racing is one of the most intriguing traditional sports because of the unique spectacle of several

camels racing across the desert. During the 1970's, camel racing regained popularity and attracted a new audience when, in 1974 the first annual King's Camel Race was held at Riyadh stadium. The King's Camel Race has become one of the most important events in camel racing, one in which animals and participants, as well as spectators, gather from all throughout the region. Camel races are held regularly during the winter months in Riyadh at King Fahd International Stadium where winners aren't awarded trophies; instead, a victor can expect to receive his own camel or the title of camel race trainer. In addition to camel racing, horse racing is also very traditional to Saudi Arabian sport. Saudi Arabia took the bronze medal at the 1996 Atlanta Olympic Games for horse jumping. Aside from traditional sports, Saudis participate in and enjoy a number of modern games such as football (known as soccer to those in the United States), which is exceptionally popular, scuba diving, windsurfing and sailing. Football is now considered the national game of the country.

In 1984, Saudi Arabia's national football team participated in the Olympics for the first time, taking football in Saudi Arabia to a whole new level. After the Olympics, football retained its heightened popularity and the national football team went on to qualify for the Asia Cup five times, and won the cup three times. The national team participated in the FIFA World Cup in 1994, their greatest achievement, and made their fans and their country proud with an amazing performance. The National Football Team, which was formed by The Saudi Arabian Football Federation, has come to be known by football fans as the "Sons of the Desert" or the "Green Falcons."

While men tend to participate in sports quite regularly, women rarely partake. Women are spatially separated from men and, for this reason, most women sports are played inside gyms and stadiums. While football continues to be Saudi Arabia's most popular sport, the country has

participated in international competitions, as well as the Summer Olympic Games, in several categories, including volleyball. In youth sports, the Saudi Arabian national youth baseball team has participated in the Little League World Series.

Sports for Athletes with Disabilities in the Kingdom of Saudi Arabia

Since the 1980s, sports participation among persons with disabilities has greatly increased (DePauw & Gavron, 2005; Poretta & Moore, 1997; White & Duda, 1993). While sport participation of persons with disabilities has continued to grow, information on disability sport topics has not progressed (Brittain, 2004). As the demographic of athletes with disabilities continues to grow, very few researchers have undertaken the task of studying the psychological and social components of sports participation among these persons (e.g. Martin, 2006; White & Duda, 1993).

According to physical disability type, the Saudi Sports Federation for Special Needs in the Kingdom of Saudi Arabia (2010) has categorized sporting activities for people with special needs. The categories of physical disabilities are as follows:

- 1- Visually impaired (blind)
- 2- Hearing disability
- 3- Cerebral palsy disability
- 4- Motor disabilities

Sports activities and competitions are categorized by the Saudi Sports Federation for Special Needs in Saudi Arabia as follows:

Activities and local competitions are organized by the Federation for all the regions in the Kingdom of Saudi Arabia in alliance with the offices of the general presidency for youth welfare and the ministry of education. The Federation represents the departments of education

throughout all the regions in the Kingdom, and includes participants from all centers and institutes for people with special needs. The objectives of these activities and competitions are:

- Deployment of games and contests with special needs
- Advocate all those with special needs to participate and contribute actively in community service
- Discover talents athletes to support the sport region and then to support the national team
- The federation's contribution to the support of all activities and programs with special needs

The Federation is responsible for the regional competitions and the organization of all tournament regions within the Kingdom in alliance with the offices of the General Presidency for Youth Welfare, as well as all centers for disabled persons which are associated with the Saudi Federation.

In addition, the Saudi Sports Federation for Special Needs in the Kingdom of Saudi Arabia is responsible for the national competition along with the General Presidency for Youth Welfare, in organizing a national tournament. Participants qualify for the tournament based on performance so that the national team will be made up of the best elements of all athletes in the Kingdom (Paralympics committee of Saudi Arabia, 2010, www.sns.org.sa).

Summary

It has been well-documented that performance anxiety is often a factor in athletic performance, and anxiety before and during competitions can be debilitating to an athlete's performance. The coordinated movements necessary for athletic competitions are increasingly difficult to carry out as the body of an athlete is or becomes tense. At certain levels, physical arousal is beneficial to an athlete as preparation for competition, but as symptoms increase to

levels above optimum, they may cause more harm than good to an athlete's ability to carry out his or her competitive tasks. Similarly, certain degrees of worry in an athlete serve to stimulate athletic performance, but severe worry or other symptoms of cognitive anxiety, such as pessimistic patterns of thought, and anticipation of failure can result in a self-fulfilling prophecy. An athlete who performs differently between practice and competition fluctuating perhaps, between very good performances to very poor, is probably affected by performance anxiety. This literature review indicates that the relationship between competitive anxiety and sport-performance has been studied extensively; however, there is an inadequate body of quantitative research which expounds upon measurement of anxiety as it manifests in the forms of somatic anxiety, cognitive anxiety, and concentration disruption in athletes with and without disabilities. Different types of anxiety and anxiety measurement tools were discussed, along with descriptions of a number of theories which explain the relationship between anxiety or arousal and athletic performance.

People of the Arabian Peninsula have participated in and enjoyed sports for thousands of years. Today, men of Saudi Arabia continue to enjoy sports, both tradition and modern, including horse and camel racing, falconry, and hunting, as well as soccer. Sports participation has been widely encouraged and efforts have been made to make such participation accessible to individuals with and without disabilities. Throughout the Kingdom, several hundred facilities have been established as exercise and sporting facilities, making such activities available to a greater population. Education, too, has worked to encourage athletic participation by incorporating sporting activities and acknowledging their importance at all levels of education, from Kindergarten to university level.

The following chapter will discuss and outline the design of this study, its participants, instrumentation used, and data analysis. Chapter four will discuss the results of the study, and the final chapter will include the discussion, conclusion and recommendations for future research of the relationship between competitive performance anxiety and athletes with and without disabilities.

CHAPTER III

Method

Introduction

This chapter presented a description of the methodological procedures which were utilized to examine and answer the research questions offered in Chapter 1. This chapter was introduced in 4-sections that include: a) participants and design, b) instrumentation, c) data collection procedures, and e) data analysis procedures. As the researcher stated previously, the major point of the study was to compare sport competitive anxiety levels of Saudi national team athletes with and without disabilities in competitions in the 2010 competitive season.

Participants and Design

The sample of the study included 120 male Saudi Arabian national team athletes with and without disabilities who participated in competitions during the 2010 competitive season. Sixty Saudi Arabian national team athletes with disabilities from four different sports (track and field, table tennis, wheelchair basketball and volleyball) were surveyed. Another 60 Saudi Arabian national team athletes without disabilities who competed in the same four sports were also surveyed. Athletes' ages were ranged from 18-35 years. Furthermore, athletes varied in their level of competitive experience. The IRB form from the University of Arkansas and the permission form from the Saudi Sports Federation for Special Needs were completed and approved before data collection took place. (See Appendix C).

Instruments

This study utilized the Sport Anxiety Scale (SAS-2, Smith et. al, 2006) which is a multidimensional measure of cognitive and somatic trait anxiety in sport-performance settings. The scale development was stimulated by findings of the original scale (3-factor structure) (SAS; Smith, Smoll, & Schutz, 1990) because the original scale was not consistent for child samples

and several items on the scale resulted in unreliable factor loadings in adult samples. They modified some items to conform to readability levels of Grade 4 or below. Since its development, SAS has provided useful evidence to researchers in a variety of sport contexts and appears to be a reliable and valid measure of cognitive and somatic sport-performance anxiety. Selection of items based on their factors loadings at each age level, their judged content validity, and their contributions to scale reliability resulted in a 15-item scale. SAS-2 contains three subscales (somatic, worry, and concentration disruption), each consisting of 5 items. Items responses are scored in a 4-point a Likert format: 1 (*not at all*), 2 (*a little bit*), 3 (*pretty much*), and 4 (*very much*). (See Appendix A).

Internal consistency and test-retest reliability analyses were carried out for the final 15-item SAS-2. Smith et al. (2006) reported Cronbach's alpha served as the measure of internal consistency in assessing the entire sample of 1,038 children. For total score, based on all 15 items, $\alpha = .91$. Subscale reliability coefficients were .84 (CI = .82–.85) for Somatic, .89 (CI = .87–.90) for Worry, and .84 (CI = .82–.85) for concentration disruption. Total score alpha coefficients exceeded .89 for all age groups. Convergent validity was assessed by correlating the SAS-2 with other measures with which the scale was expected to correlate, and discriminates validity was assessed validity through correlations with theoretically unrelated variables.

Norms were developed for the SAS-2 for several different age groups. Means and standard deviations for the 593 college-age students tested were presented ($M = 9.78$, $SD = 3.61$) for somatic anxiety, ($M = 12.12$, $SD = 3.85$) for worry, and ($M = 6.93$, $SD = 2.37$) for concentration disruption.

Translation of the SAS-2

The SAS-2 is constructed in English. However, the participants of this study were athletes from the Kingdom of Saudi Arabia, which means that most participants did not have the ability to read and understand the English version. Consequently, the researcher translated the (SAS-2) from English to Arabic. An Arabic professor reviewed the Arabic grammar of the Arabic version. Then, the Arabic version of the scale was distributed to a group of teachers who were versed in both Arabic and English to translate it again to the English version to make sure that the Arabic version denotes the exact same meaning for the original English scale. After that, both versions were given to a group of doctoral students who attend the University of Arkansas and to a group of graduate students who were currently studying linguistics at Umm Al-Qura University for comparison and commentary (See Appendix B). Cronbach's alpha was reported for this study's main sample also.

Data Collection

All measures were completed during the 2010 competitive season. The Arabic version of SAS-2 was mailed to the Saudi Sports Federation for Special Needs in the Kingdom of Saudi Arabia and the other Saudi Sport Federations via e-mail. The Federations printed the questionnaire, and then distributed the questionnaires to the administrators for each sport. The purpose of the investigation was explained to the Saudi Arabian national team athletes with and without disabilities by the administrators. The athletes completed the questionnaire just prior to the warm-up phase, approximately half an hour before the competition started. Participants were provided with instructions for completing the test. In addition, the researcher created his consent form that confirmed confidentiality of the information and gave participants the right to reject the

instrument or accept it. The participants were asked to respond honestly to the instrument according to how they felt before their present competition.

Data Analysis

Descriptive and inferential statistics were used to analyze the data. The SAS-2 results were analyzed and data were recorded with a Microsoft Excel program and a Statistic Package of Social Sciences (SPSS) version 18.0 statistical software program. Descriptive statistics were calculated for athletes with and without disabilities pertaining to their scores on SAS-2. The instrument has three subscales which are somatic anxiety, worry, and consternation disruption; therefore these subscales compared the two groups of athletes. A two-way MANOVA on the three subscales on SPSS version 18.0 was utilized. Alpha level was set at .05.

CHAPTER IV

Results

This chapter presents the statistical analysis for the data gathered by the researcher. SAS-2 was utilized to measure the subscales which are somatic anxiety, worry, and consternation disruption. The data were analyzed to compare the individual differences in the levels of somatic anxiety, worry, and concentration disruption of Saudi Arabian national team athletes with and without disabilities in competitions.

Review of Research Questions

Saudi Arabian national team athletes with and without disabilities experience various kinds of anxiety in competitions. Therefore, this chapter describes the participants' characteristics and answers the following research questions:

- 1- Is there a difference in the levels of somatic anxiety between able-bodied Saudi Arabian national team athletes and those who are disabled as well as those who are on an individual or team sport?
- 2- Is there a difference in the levels of worry between able-bodied Saudi Arabian national team athletes and those who are disabled as well as those who are on an individual or team sport?
- 3- Is there a difference in the levels of concentration disruption between able-bodied Saudi Arabian national team athletes and those who are disabled as well as those who are on an individual or team sport?

Descriptive Statistics and Correlation Analysis

Descriptive statistics were calculated using the SPSS program and are presented below in Table 1. As demonstrated in Table 1, the mean and standard deviation for each group were calculated.

Table 1

Descriptive Statistics by Each Factor

Factors (group & game type)	N	Somatic Scale	Worry Scale	Concentration disruption Scale
Athletes w disabilities				
Individual Sport	30	10.07 (3.19)	11.30 (3.53)	9.47 (2.86)
Team Sport	30	9.80 (3.58)	11.07 (3.70)	9.23 (2.89)
Total	60	9.93 (3.36)	11.18 (3.59)	9.35 (2.85)
Athletes w/o disabilities				
Individual Sport	30	10.97 (2.25)	11.07 (3.70)	9.23 (2.89)
Team Sport	30	9.17 (3.99)	11.30 (4.50)	8.77 (3.09)
Total	60	10.07 (3.34)	11.27 (3.42)	9.47 (2.74)

Note: Means are presented for each scale with standard deviations in parentheses

Presented in Table 2 are the correlations between the dependant variables. All the dependant variables were moderately to strongly correlated which is appropriate when using Multivariate Analysis of Variance (MANOVA). The strongest correlation was between somatic and worry scale ($r = .73$), but was not deemed to be high enough to cause multicollinearity in the

analysis. Therefore, the data were analyzed using a 2 way MANOVA. The correlations were all significant at the 0.01 level.

Table 2

Correlations among the Scales

Scales	Somatic	Worry	Concentration disruption
Somatic	1.00		
Worry	.73**	1.00	
Concentration disruption	.61**	.63**	1.00

Note: ** means significant at the .01 level

MANOVA Analysis

Three dependant variables (Somatic, Worry, and Concentration disruption) were analyzed using a 2×2 (group × game type) multivariate analysis of variance. The two levels of groups were athletes with and without disabilities. The second variable, game type, refers to athletes on an individual or team sport. As illustrated in Table 3, as discussed earlier, the dependent variables were correlated, which is appropriate for MANOVA analysis. In MANOVA analyses, the dependent variables should be correlated, but not have too high of a correlation, otherwise multicollinearity could result.

*Table 3**MANOVA Results*

Effect	Wilks Λ	F	P	Partial η^2
Group	.999	0.025	.995	.001
Game type	.935	2.629	.054	.065
Interaction	.949	2.037	.113	.051

MANOVA results showed that the group effect was not significant which means there were no differences between the disabled and able-bodied athletes for the three scales Wilks Lambda, $F(3, 114) = .025, p > .05$. Similarly, the effect for the game type was not significant which means there were no differences between the individual and team sport athletes for the three scales Wilks Lambda, $F(3, 114) = 2.629, p > .05$. Lastly, the group by game type interaction effect was also not significant which, Wilks Lambda, $F(3, 114) = 2.037, p > .05$.

The partial eta-squared represents the amount of variance in the dependent variable attributed to the certain effect. The group effect contributed only .1% of the variance in the set of dependent variables. The game type effect contributed only 6.5% of the variance in the set of dependent variables. The group by game type interaction effect contributed only 5.1% of the variance in the set of dependent variables.

CHAPTER V

Discussion, Conclusion and Recommendations for Future Research

Discussion and Conclusion

Coaches and sport psychologists strive to help athletes perform at their optimum level, which means the athletes achieving a certain state of favorable anxiety before and during competitions. The goal of optimal sport-performance is easily disrupted due to the fragile nature of competitive anxiety, the athlete's involuntary thoughts and emotions, and situational factors that tend to alter athletic performance. Athletic situations and other situations of a competitive and demanding nature are apt to increase stress and anxiety as arousal is heightened. This is especially true when the results are of greater importance and cannot be predicted (Jones & Swain, 1995).

Sport psychologists, not surprisingly, devote a considerable amount of time assisting athletes in coping with pre-competition anxiety, as well as anxiety during competition (Murray, 2000). Therefore, researchers in sport psychology have worked just as hard, putting extensive time and effort into comprehension of the relationship between anxiety and performance. Even though there is a substantial body of research on anxiety, the anxiety-performance relationship remains rather ambiguous due to limited information.

Findings by Campbell and Jones (1997), who examined responses of wheelchair athletes reporting on competitive anxiety and self-confidence, suggested that pre-competition anxiety in wheelchair-bound athletes is similar in nature and severity to that of able-bodied athletes.

The purpose of the present study was to compare individual differences in the levels of somatic anxiety, worry, and concentration disruption of Saudi Arabian national team members

with and without disabilities in competitions. Also investigated was whether differences occur between individual and team sports in terms of those three variables.

The results of the multivariate analysis indicated that there were no statistically significant differences between the athletes with disabilities and able-bodied groups in terms of participants' measures of somatic anxiety, worry, or concentration disruption. In other words, athletes with and without disabilities did not have significant differences in the levels of somatic anxiety, worry, or concentration disruption. The same was true for the game type effect. There were no differences between individual or team sport in the levels of somatic anxiety, worry, or concentration disruption.

Because it is clear that athletic performance is highly susceptible to cognitive anxiety, the differences noted between athletes with and without disabilities could have been due to the athletes' cognitive interpretation of their own anxiety states. For athletes with disabilities, anxiety is related to both competition and their disability, and for many of these athletes, anxiety and worries have to do with disability-related medical issues. Therefore, sport psychologists must be sure of the cause for an athlete's anxiety before assuming all stressors are related to athletic performance (Dosil, 2006).

According to Krane, Joyce, and Rafeld (1994), this statement holds true regardless of the individual's skill level. Participants in a collegiate softball tournament were put into one of two conditions: high situation criticality or low. While somatic anxiety did not differ in the two situations, those athletes in the high criticality condition had significantly higher levels of cognitive-anxiety. Also, other researchers have found somatic anxiety to peak rapidly and immediately preceding the start of competition in cricket players (Jones, Cale, & Kerwin, 1988), rowers (Ussher & Hardy, 1986), golfers and gymnasts (Krane & Willimams, 1987). The

findings across these research studies suggest that there may be disparity in anxiety levels between athletes across different sports (Covassin & Pero, 2004). The findings of this investigation, however, were contradicting in that they agreed with the findings of Martens et al (1990), which revealed no significant differences between the level of anxiety and type of sport, status, or race of participants. Likewise, the results of this study agreed with the study of Ferreira et al (2007), which showed similar cognitive and somatic pre-competition anxiety responses between Portuguese athletes with and without disabilities.

According to this study's results, both somatic anxiety and worry subscales were at relatively moderate levels. One possible explanation for athletes with disabilities not experiencing high anxiety in competitions is that the Saudi Sports Federation for Special Needs in the Kingdom of Saudi Arabia has established much recent work that has been centered on various aspects of competitions. According to findings by Cox and Davis (1992), a group of elite wheelchair athletes had considerably more control over their anxiety than a group of college athletes without disabilities.

Also, many sport psychologists in the Kingdom of Saudi Arabia have investigated precompetitive affect, ways to cope with competitive anxiety, and psychological effects of competition. Many disabled athletes are very mentally strong in their sporting performance because they need to be mentally tough to cope with their disability in life itself. This is an issue that needs to be considered by the sport psychologists when developing any mental skills programs.

A study conducted by Pensgaard, Roberts and Ursin (1999) focused on Norwegian Paralympic and Olympic winter athletes and the athletes' perception of various motivational climates. Contrary to the authors' hypothesis that Olympic athletes would rely on coping

strategies more than Paralympic athletes, the results actually suggested similar motivational profiles between the two groups of athletes, and that both groups relied on coping strategies to the same degree. Interestingly, in recent years, the focus of sport for athletes with disabilities in the Kingdom of Saudi Arabia has changed from rehabilitation to competition. Thus, it might be expected that sport psychologists would engage in substantive research efforts to investigate competitive issues among athletes with disabilities.

Another explanation for the findings of this study is that they may be specific to the sample employed. Participants may have been exposed to mental training programs, contributing to the findings of only moderate levels of anxiety. For example, a mental training program was prescribed to an NCAA Division I basketball team athlete, and examined by Savoy (1993). The results demonstrated that both the athlete and his coach noted improved performance, increased self-confidence, and most importantly, a decrease in anxiety pre-competition. If athletes with disabilities had any mental learning program, anxiety levels may have been positively affected.

Psychological profiles for athletes with and without disabilities have been found to be similar in many ways except that disabled athletes tend to have had a traumatic life-event which resulted in their disability. In working with athletes with disabilities, this fact of trauma has to be taken into account. While most athletes have, at one time or another, been injured, for most, the injury has been temporary. Furthermore, the responses to a temporary injury cannot compare with the severity of an experience immediately following an injury or situation that results in a permanent disability (Dosil, 2006).

In conclusion, it was found that Saudi Arabian national team athletes with and without disabilities both have relatively the same levels of somatic anxiety, worry, and concentration

disruption. At this point and especially in the Kingdom of Saudi Arabia, individuals with disabilities who participate in sports are considered athletes. They could definitely use their practices and mental skills training to improve performances and promote their enjoyable sporting experience. Therefore, in terms of the anxiety performance relationship, the psychological profile of athletes with and without disabilities seems similar. The next logical step is to investigate whether the same psychological techniques are appropriated.

Recommendations for Future Research

Readers should not allow the results of the current investigation to be definitive. Further studies in this respective field should be carried out in a broader and wider context that will involve athletes from private or government higher institutions, teacher training colleges, and any other institutions. Also, elite and novice athletes participating in sport events should also be involved and measured in additional studies. There is a need to include more types of sport disciplines and thus with these, the results of the study could be concluded more accurately and nationwide.

In addition, the results of this dissertation raise a number of important questions and issues that require attention in future research if a better understanding of competitive sport anxiety is to be attained. One of the major recommendations is for sport psychologists to supplement their nomothetic research methodologies with idiographic analyses. Also, as mentioned in Chapter 2, there are many scales which may be effective to measure and evaluate sport-competitive anxiety. Furthermore, we now have the tools for better understanding the components of anxiety in the athletic context. The development of the CSAI-2, SCAT, CSAT, PSIS, ACSI-28, TSSCI, and the SAS allows researchers to reliably measure the following constructs: cognitive anxiety, somatic anxiety, self-confidence, and concentration disruption. In

addition, the development and increased popularity of multiple baseline research designs provide a method for examining anxiety reduction interventions through cognitive-behavioral interventions with many sample sizes. There is no doubt that using either of those scales by researchers would be a step in the right direction towards creating appropriate operational definitions on the relationship between anxiety and performance.

A study of athletes' competitive anxiety state before and during the competition is crucial for the effective performance; there should be special psychological programs which can contribute to the improved efficiency of athletes. Researchers in the field of sport psychology have identified several relatively simple strategies used by coaches and sport psychologists to reduce the chances of their teams suffering from excessive anxiety such as goal setting; thought control strategies such as positive thinking and cognitive restructuring; relaxation techniques such as diaphragmatic breathing, mental imagery, and progressive muscle relaxation; and focusing on the task at hand.

The findings of this study lead to the assumption that sport-competitive anxiety and athletes' status may be good predictors of athletic performance potential as measured by the Sport Anxiety Scale in competitive athletes. Of course, more studies would need to be conducted to confirm any relationship between competitive anxiety, life event stress and the achievement of peak performance. While the results of this study with its modest number of participants have been investigated, continuing research will require frequent and deliberate replication with more participants and game type sports to confirm its merit.

Finally, although competitions for athletes with disabilities in the Kingdom of Saudi Arabia are a relatively new phenomenon, more research is needed to determine whether lack of experience in athletes with disabilities in competitions may affect their specific anxiety states. In

particular, studies might examine the relationship between competitive anxiety and competitions for samples comprised of athletes with and without disabilities who are either experienced or inexperienced in national level competitions. In this manner, researchers might be able to conclude more precisely whether patterns of anxiety change are specific to populations, such as elite athletes with cerebral palsy, or common to all elite athletes in general.

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APPENDICES

Appendix A

Sport Anxiety Scale-2

REACTIONS TO PLAYING SPORTS

Many athletes get tense or nervous before or during games, meets or matches. This happens even to pro athletes. Please read each question. Then, circle the number that says how you USUALLY feel before or while you compete in sports. There is no right or wrong answers. Please be as truthful as you can.

<u>Before or while I compete in sports:</u>	Not At All	A Little Bit	Pretty Much	Very Much
1. It is hard to concentrate on the game.	1	2	3	4
2. My body feels tense.	1	2	3	4
3. I worry that I will not play well.	1	2	3	4
4. It is hard for me to focus on what I am supposed to do.	1	2	3	4
5. I worry that I will let others down.	1	2	3	4
<u>Before or while I compete in sports:</u>	Not At All	A Little Bit	Pretty Much	Very Much
6. I feel tense in my stomach.	1	2	3	4
7. I lose focus on the game.	1	2	3	4
8. I worry that I will not play my best.	1	2	3	4
9. I worry that I will play badly.	1	2	3	4
10. My muscles feel shaky.	1	2	3	4
<u>Before or while I compete in sports:</u>	Not At All	A Little Bit	Pretty Much	Very Much
11. I worry that I will mess up during the game.	1	2	3	4
12. My stomach feels upset.	1	2	3	4
13. I cannot think clearly during the game.	1	2	3	4
14. My muscles feel tight because I am nervous.	1	2	3	4
15. I have a hard time focusing on what my coach tells me to do.	1	2	3	4

Appendix B The Arabic Version of Sport Anxiety Scale-2

مقياس القلق الرياضي -2

ردود الأفعال قبل وأثناء الألعاب الرياضية

يشعر العديد من الرياضيين بحالة من التوتر أو العصبية وذلك قبل أو أثناء المنافسات الرياضية . الرجاء قراءة كل سؤال ومن ثم وضع دائرة حول العدد الذي يوضح كمية الشعور بالعبارة وذلك قبل أو أثناء المنافسات في الألعاب الرياضية . تذكر بأنه ليس هناك إجابة صحيحة أو إجابة خاطئة . الرجاء توخي الصدق بقدر الإمكان.

قبل أو بينما أتنافس في الألعاب الرياضية:

إطلاقاً	قليلاً	إلى حد كبير	كثير
1	2	3	4
1 - من الصعب علي التركيز في اللعب.			
2 - جسمي يشعر بالتوتر.			
3 - أخشى أنني لن ألعب جيداً.			
4 - يصعب علي التركيز بالذي من المفترض أن أعمله.			
5 - أخشى أنني سأخذل الآخرين.			

قبل أو بينما أتنافس في الألعاب الرياضية:

إطلاقاً	قليلاً	إلى حد كبير	كثير
1	2	3	4
6 - أشعر بتوتر في معدتي.			
7 - أفقد التركيز على اللعبة.			
8 - أخشى أنني لن أؤدي أفضل أداء.			
9 - أخشى أنني سألعب بشكل سيئ.			
10 - عضلاتي تبدو مهزوزة.			

قبل أو بينما أتنافس في الألعاب الرياضية:

إطلاقاً	قليلاً	إلى حد كبير	كثير
1	2	3	4
11 - أخشى أنني سألحظ أثناء اللعبة.			
12 - أشعر بتوعك في معدتي.			
13 - لا أستطيع التفكير بشكل واضح أثناء اللعبة.			
14 - عضلاتي تبدو مشدودة لأني عصبي.			
15 - أواجه صعوبة في التركيز فيما يطلبه المدرب مني.			

Appendix C

The IRB Approval letter of the study
July 6, 2010

MEMORANDUM

TO: Hassan Ahmad Halawani
Cathy Lirgg

FROM: Ro Windwalker
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 10-06-700

Protocol Title: *Comparison of Sport Competitive Anxiety Levels of Saudi National Team Athletes with and without Disabilities in Competitions*

Review Type: ☒ EXEMPT ☐ EXPEDITED ☐ FULL IRB

Approved Project Period: Start Date: 07/06/2010 Expiration Date: 07/05/2011

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Compliance website (<http://www.uark.edu/admin/rsspinfo/compliance/index.html>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

If you wish to make *any* modifications in the approved protocol, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 120 Ozark Hall, 5-2208, or irb@uark.edu.

Appendix D

INFORMED CONSENT

1. *Title:* Comparison of Sport Competitive Anxiety Levels of Saudi Arabian National Team Athletes With and Without Disabilities in Competitions

Researcher:

Hassan Ahmad Halawani, Graduate Student
Cathy Lirgg, Ph.D., Faculty Advisor
University of Arkansas
College of Education
Department of Health Science, Kinesiology,
Recreation and Dance
308 HPER Building
Fayetteville, AR 72701
479-575- 2858

Administrator(s):

Rosemary Ruff, Director
Research & Sponsored Programs
Research Compliance
University of Arkansas
120 Ozark Hall
Fayetteville, AR 72701
479-575-3845
rruff@uark.edu

Description: The present study will compare the individual differences on the levels of somatic anxiety, worry, and concentration disruption of Saudi national team with and without disabilities in competitions. You will be asked to complete a short survey approximately 30 minutes before the competition will start. All participants will then fill out a 15-item multiple choice survey that will take about 5 minutes to complete.

Risks and Benefits: There are no risks associated with this research. The benefits will be developing and improving programs to athletes with and without disabilities in Saudi Arabia.

Voluntary Participation: Your participation in the research is completely voluntary.

Confidentiality: All information will be recorded and used for this research. All questionnaires will be completed anonymously. There will be no way to connect athlete's response to his name. All information will be held in the strictest of confidence.

Right to Withdraw: You are free to refuse to participate in the research and to withdraw from this study at any time. Your decision to withdraw will bring no negative consequences - no penalty to you.

Informed Consent: I, _____, have read the description,
(Please print)

including the purpose of the study, the procedures to be used, the potential risks and side effects, the confidentiality, as well as the option to withdraw from the study at any time. Each of these items has been explained to me by the investigator. The investigator has answered all of my questions regarding the study, and I believe I understand what is involved. My signature below indicates that I freely agree to participate in this experimental study and that I have received a copy of this agreement from the investigator.

Signature

Date

Appendix E

نموذج موافقة للمشاركة بالدراسة

أخي اللاعب

السلام عليكم ورحمة الله وبركاته

وبعد

يطيب لي أن أفيدك علماً بأني أحد الطلاب المبتعثين من الكلية الجامعية بجامعة أم القرى لنيل درجة الدكتوراة في جامعة أركنساس بالولايات المتحدة الأمريكية بقسم التربية البدنية وعلوم الحركة ، ويسرني أن أطرح بين يديك هذا المقياس والذي أرجو منك المساعدة بتعبئته مشكوراً وعنوانه هو (مقياس القلق الرياضي - 2) .

كما أحيطك علماً بأن المشاركة اختيارية وستكون جميع المعلومات سرية ولغرض البحث العلمي فقط ، ويمكنك الانسحاب في أي وقت ولا يترتب عند عدم مشاركتك أي ضرر، وفي حال الرغبة بالمشاركة أرجو إتباع التوجيهات التي في أعلى نموذج المقياس . ويستغرق إكمال الإجابة على المقياس المرفق 5 دقائق تقريباً وسيكون إكمالك للمقياس مؤشر على موافقتك بالمشاركة في هذه الدراسة .

أشكر لكم حسن تعاونكم مع تمنياتي للجميع بالسداد والتوفيق .

أخيراً إذا كان لديك أي استفسار حول هذه الدراسة ، بإمكانك التواصل معي عبر البريد الإلكتروني

Hassanh@uark.edu

الباحث

حسن بن أحمد حلواني

Appendix F
The Approval letter From Saudi Sports Federation for Special Needs

The Kingdom of Saudi Arabia
General Presidency of Youth Welfare
Saudi Sports Federation for Special Needs

المملكة العربية السعودية
الرئاسة العامة لرعاية الشباب
الاتحاد السعودي لرياضة ذوي الاحتياجات الخاصة

To: Mr. Hassan A. Halawani

Subject: Approval Letter

Peace be upon you

Based on your letter addressed to Royal Prince, General President of Youth Welfare and Chairman of the Saudi Sport Federation for special needs. I am pleased to inform you that your request to accompany the teams for the application of your studies on athletes participating in these tournaments has been approved.

Best Regards

General Secretary

Naser Abdulaziz Alsaleh

Appendix E Data Directory

Groups:

- 1- Athletes with disabilities
- 2- Athletes without disabilities

Game types:

- 1- Individual sport
- 2- Team sport

Scoring key:

Somatic: Items 2,6,10,12,14

Worry: Items 3,5,8,9,11

Concentration Disruption: Items 1,4,7,13,15

Groups	Game	Item	Item	Item	Item	Item	Item	Item	Item	Item	Item	Item	Item	Item	Item	Item	S	W	CD	
	Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5
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6	1	1	2	1	2	3	4	1	2	3	4	3	4	1	3	3	2	9	17	12
7	1	1	3	4	2	4	4	4	4	4	4	2	4	2	2	4	1	16	18	14
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