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COMPARISONS OF CONFIDENCE AND ANXIETY BETWEEN HIGH ABILITY AND LOW ABILITY HIGH SCHOOL BASKETBALL OFFICIALS

By

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ABSTRACT

COMPARISONS OF CONFIDENCE AND ANXIETY BETWEEN HIGH ABILITY AND LOW ABILITY HIGH SCHOOL BASKETBALL OFFICIALS

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The purpose of this study was to determine if high (HRO) and low ability (LRO) officials differed in the their perceived trait and state sport-confidence and trait and state anxiety. Measuring instruments included the Trait Sport-Confidence Inventory (TSCI), State Sport-Confidence Inventory (SSCI), Sport Competition Anxiety Test (SCAT), and the Competitive State Anxiety Inventory-2 (CSAI-2). Subjects were 27 officials who officiated 78 boys' and girls' high school basketball games. Subjects ratings of their own officiating ability and the ability of their peers served to place each subject into a high or low ability group. Four hypotheses proposed that high ability officials would be more trait and state sport-confident and be less trait and state anxious than low ability subjects.

Significant differences between groups emerged on trait, pre- and post-game sport-confidence. These findings resulted from HROs expressing more confidence than LROs. However, both groups were very confident and expressed confidence levels equivalent to those found in elite athletes.

There were no differences in either trait anxiety or pre-game anxiety. Post-game anxiety was significant on the CSAI-2 subscales of cognitive anxiety and self-confidence. HROs were less anxious than LROs. Both groups expressed low levels of trait and state anxiety when compared to the normative sample. Player gender and school size appeared to influence state sport-confidence but not state anxiety.

To

Pat
Scott and Caitlin

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CHAPTER 1

INTRODUCTION

Nature of the Problem

With every passing year there seems to be a greater emphasis placed on athletics and the outcome of athletic competitions. In previous years, individuals primarily participated in sport for the enjoyment of physical activity and competition. Today, in a society where many old values are rapidly being replaced, sport often times is played for recognition and the extrinsic rewards that come with winning (Eitzen, 1979a).

Professional sports teams spend millions of dollars to employ the finest athletes and coaches in an effort to show a profit and have top rated winning teams. Colleges hope that a winning tradition will enhance student enrollment and alumni contributions (Coakley, 1982b). High schools use sport to generate spirit, unity and promote parental, alumni and community support for all school programs (Coakley, 1982a). Huge trophies, media attention, all-star game appearances and trips to regional and state-wide competitions await victorious youngsters in many recreational sports. These rewards and incentives have taken on great value, but have also added tremendous pressure to the participants in regards to winning and losing.

This pressure has led many of those involved to search for anything that will give them the slightest advantage. Coaches and administrators

encourage spectator involvement in an attempt to unnerve the opposition. Baseball fields are "doctored" to minimize opponents strengths. Football players are taught how to get away with illegal tactics to avoid being assessed a penalty. Basketball players are coached on how to fake a foul and how to bump a player when they are shooting so the official will not notice (Eitzen, 1979b).

This attempt to gain an advantage has evolved to include attempts at manipulating the referees. As games become increasingly important, coaches, players and spectators can be seen directing their attention toward the game officials. Many spectators feel that once they have paid their money they are free to say and do whatever they desire. Coaches have been known to use the presence of these highly partisan spectators and their own verbal outbursts in hopes of gaining an advantage while opposing coaches counterattack to gain leverage for their teams. They believe that ultimately conference and/or national championships can be won or lost on one critical decision by the referee. But regardless of these pressures the official is supposed to remain calm, confident, in control and consistent throughout. These expectations would seem inappropriate and unrealistic considering the circumstances.

With all the attention given to officials and all the effort put forth to influence them, it is ironic that the worst thing that can happen to referees

is to allow this harassment to affect them. And for them to do what everyone wants them to do, which is to give one team an advantage. Not being influenced by such behavior can be an extremely difficult task. Coaches are quick to condemn officials when they feel they have choked under pressure. They routinely inform officials that they "will never work here again" or "you are the worst I've ever seen." This type of mental abuse can eventually take it's toll causing some officials to drop out, indicating they "don't need the hassle anymore."

It is not suprising that personal confrontations with coaches, players, and spectators can result in officiating being a very stressful activity (Conti & McClintock, 1983; Taylor & Daniel, 1987). Thus, it is understandable why one call, or lack of a call, may be the one that triggers thoughts of self-doubt and ideas of retirement. Yet some officials persist. They seem to be able to ignore the assault and are only momentarily affected or not affected at all. They attend only to officiating and are not intimidated by outside influences or distracted by their own emotional arousal. What is it about these people that makes them go on? Do they enjoy punishment or are they blessed with an abundance of self-confidence? Are they relaxed and in control of their emotions or are they experiencing increases in anxiety? And do officials experience an escalation in anxiety prior to games knowing what is in store for them?

It would seem that with all the pressures, expectations, and environmental constraints, officials should be finely tuned robots. Yet referees are not manufactured. They do not all possess the same abilities and they are not all in the upper echelon. Even the most casual observers of athletic events are quick to point out that some officials are better than others. It is these observations that support a question fundamental to officiating: What qualities do top rated officials possess that average referees do not?

With research into sports officiating in its infancy, numerous avenues for study are available. This study will focus on two variables critical to officiating: anxiety and self-confidence, and, any differences in these variables between high and low ability officials.

It is unfortunate, but as more importance is placed on the outcome of athletic competitions the officials play a more integral role. Players are bigger and stronger than ever, the pace of the game is faster and verbal harrassment has reached unparalled depths. It is important that we begin to determine what separates the strong officials from the weak. As the game continues to change, it is critical that officials keep pace by constantly striving to improve.

Statement of the Problem

With athletic officials playing an increasingly important role and their

competence being continuously questioned, research into officiating is long overdue. It is the purpose of this study to begin an investigation into some of the characteristics which may distinquish high ability officials from low ability officials. Significant differences between the two groups on the variables, anxiety and self-confidence, may begin to explain why some officials are considered better than others and may provide officials with a catalyst to learn which psychological skills may be beneficial in helping to cope with the stress of officiating.

Research on anxiety and confidence in sport has found that experience and success are important factors in controlling anxiety and increasing confidence. Highlen and Bennett (1979) discovered successful athletes experienced lower levels of anxiety than unsuccessful athletes. Fenz and Epstein (1967) found experience to be a key factor in controlling anxiety and improving performance. Vealey (1986) and Bandura (1977) both suggest that the amount of confidence individuals possess about their ability to be successful will ultimately influence their performance. If officials are similiar to athletes, then those who believe in their ability and have gained the most from their experiences may be more likely to move up the officiating ranks and be perceived by their peers as quality officials. These beliefs and the knowledge gained through experience will help officials cope with their anxieties and enhance their chances for success.

This study proposes the following hypotheses:

1) High ability officials will report greater levels of trait sport-confidence than low ability officials.

2) High ability officials will experience greater levels of state sport-confidence both before and after games than low ability officials.

3) High ability officials will report less trait anxiety than low ability officials.

4) High ability officials will report less state anxiety both before and after games than low ability officials.

Delimitations

This study is generalizable only to high school basketball officials. Officials in other sports may or may not experience many of the same symptoms. It is possible that while other sport official's reactions may be highly correlated due to similiar stimuli, it is equally possible that corresponding results may be purely coincidental.

Definitions

High ability officials (HRO): Officials who were rated by their peers in the top 33% of the sample of officials who volunteered from the Colorado Springs Basketball Officials Association (CSBOA) to participate in the study.

Low ability officials (LRO): Officials who were rated by their peers in the bottom 33% of the sample of officials who volunteered from the CSBOA to participate in the study.

Trait sport-confidence: The belief or degree of certainty individuals usually possess about their ability to be successful in sport.

State sport-confidence: The belief or degree of certainty individuals possess at one particular moment about their ability to be successful in sport.

Cognitive anxiety: Mental component of anxiety caused by negative expectations about success or negative self-evaluation and characterized by worry, negative self-talk and unpleasant imagery.

Somatic anxiety: Physiological or affective component of anxiety that is directly related to autonomic arousal and reflected in such responses as rapid heart rate, shortness of breath, clammy hands, butterflies in the stomach and tense muscles.

Limitations

Although efforts were made to control for experience, there were still large discrepancies among subjects. Many top rated officials also referee college basketball, as well as other sports, and this supplemental experience may serve as an uncontrollable confounding variable.

In addition, the testing environment was different for each pair of subjects during each data gathering session. Some subjects were privy to large comfortable rooms where they could complete the questionnaires in private while others were in very small, cramped quarters with no privacy. With conditions such as these there was no way to monitor and control testing room conversation or the honesty of responses.

All of the data in this study were gathered from games officiated in the month of February. At this point of the season the fate of many teams

had already been decided. Some games served as championship tilts while others involved last place teams. Levels of anxiety and confidence may have been affected given the two teams involved and the consequences of the game's outcome.

Assumptions

While this study is directed toward high school basketball officials, the results may not even be generalizable to this population. This unusual twist occurs because the various measurement inventories have been developed for, and used primarily with, athletes and may not be appropriate for officials.

CHAPTER 2

REVIEW OF LITERATURE

Numeous research studies have been conducted to determine what effect psychological characteristics have on athletic performance. Among the published research are countless thoughts, ideas, conclusions and suggestions about the impact that anxiety, perceived ability and feelings of self-confidence have on athletic achievement. Research studies have examined everyone from the uncoached novice to some of the world's most elite competitors. By contrast, only a handful of studies have investigated sports officials. These infrequent studies have found officiating to be a very stressful activity (Conti & McClintock, 1983; Taylor & Daniel, 1987), although most officials expressed confidence in their ability to handle any situation (Alker, Straub & Leary, 1973).

With so little research conducted on officials it is possible that all, some, or none of the conclusions proposed in the sport psychology literature are applicable. The possibility exists that a referee has a completely different set of perceptions than a baseball batter, free throw shooter or subject on a stabilometer. Because of these many uncertainties, it was necessary to conduct a fairly general examination of the literature, as it relates to anxiety and confidence, to determine which research would be appropriate for sports officials.

Theories of Arousal and Performance

Drive Theory - One of the first theories proposed to explain anxiety and it's subsequent relationship with performance, was proposed by Hull (1943) and later modified by Spence (1956). This theory, known as Drive Theory, suggests that a person's performance (P) is a multiplicative function of drive (D) and habit strength (H). Thus,

$$P = D \times H$$

Hull defined drive as the stimulator equivalent to an individual's level of physiological arousal and that habit strength was the dominance of a correct or incorrect response. Specifically, drive theory proposes that as an individual's level of arousal increases, it will increase the dominant response. If the dominant response is correct then increases in arousal will enhance performance in a linear fashion (generally when performing simple or well-learned tasks). However, when the dominant response is incorrect then any increase in arousal will hinder performance (very complex skills or early learning).

While researchers examined the possible effects of drive on performance, other research led to a slight modification of the theory. The alteration began when Taylor (1951, 1953) developed one of the first self-report questionnaires capable of measuring chronic anxiety, the Taylor Manifest Anxiety Scale (TMAS). The TMAS proved an effective measuring

tool and provided researchers with the ability to effectively measure anxiety and divide high and low anxious subjects into seperate groups to make comparisons.

While research generally supported drive theory another study offered an additional twist. Duffy (1957) suggested that an individual's level of arousal was set upon a continuum and that the amount of arousal a person experiences varies from a low point during deep sleep to a high point during extreme effort or excitement. Differences in arousal (activation) in the same individual are accompanied by differences in the quality of performance. Malmo (1959) furthered this idea by suggesting that activation is a physiological response to a situation and that the greater the stimuli the higher the activation.

The TMAS and Duffy's (1957) continuum proposal were the major factors that brought an additional modification in the drive theory. Spence and Spence (1966) suggested that subjects who fell at opposite ends of the high and low anxiety continuum, as proposed by the TMAS, would differ in anxiety responses depending on the level of stress. Specifically, that high anxious subjects would react more to psychological stress than low anxious subjects.

As more and more studies were initiated, research into drive theory intensified. Results began to contradict the drive theory concept (Hunt &

Hillary, 1973; Martens, 1971; Weiner, 1966; Weiner & Schneider, 1971) and an alternative theory was being explored.

Inverted-U Hypothesis - While drive theory proposed a linear relationship between physiological arousal and performance, the much older inverted-U hypothesis suggested a curvilinear relationship. The team of Yerkes and Dodson, in their study using laboratory mice, found that an intermediate range of intensity of stimulation (shock) proved to be the most favorable to the acquisition of a habit (Yerkes & Dodson, 1908). In other words, the inverted-U hypothesis, or Yerkes-Dodson Law, predicted that performance effectiveness will increase as the level of arousal increases, up to some optimal point, whereupon a further increase in arousal will produce a decline in performance.

Research into the inverted-U hypothesis served to stimulate increasing popularity and acceptance of the hypothesis. Martens and Landers (1970) provided confirmatory evidence when they found that boys who experienced only average levels of stress performed better on a motor tracking task than boys experiencing high or low amounts of stress. Additional confirmation came from a comparative field study conducted by Fenz and Epstein (1967). In their study of parachutists, they used continuous physiological recordings of skin conductance, heart rate and respiration from experienced and novice parachutists just prior to, and following, a jump. The novice jumpers

showed a rise in physiological activity right up to the final altitude while experienced jumpers had an initial rise followed by a decline. In a later replication of this study, each parachutist's jump was rated by a jumpmaster. Results indicated that too much arousal affected performance negatively (Fenz & Jones, 1972).

Additional studies continued to lend their support for the inverted-U hypothesis. Klavora's (1978) examination of high school basketball players showed that moderate amounts of pre-competitive state anxiety had a positive effect on performance while low and high levels produced a negative effect. The same type of result was found by Hall and Purvis (1980) when they studied bowling performance and Sonstroem and Bernardo (1982) in their study using female college basketball players.

Trait and State Anxiety. Anxiety research entered a new dimension when Spielberger (1966) refined the theories of anxiety. He proposed that anxiety was composed of two subcomponents, trait and state, and that it was necessary to distinquish both conceptually and operationally between anxiety as a temporary state and a somewhat stable personality trait. Spielberger (1972) defined trait anxiety as "the disposition to perceive a wide range of stimulus situations as dangerous and threatening, and is the tendency to respond to such threats with state anxiety reactions" (p. 39), and state anxiety as "a transitory emotional state or condition of the human

organism that varies in intensity and fluctuates over time" (p. 39).

Spielberger (1972) believes that trait anxiety referred to relatively stable individual differences in anxiety proneness. Individuals who are subjected to high levels of trait anxiety will tend to have higher levels of state anxiety and perceive more situations as threatening. State anxiety is characterized by the activation of the autonomic nervous system with feelings of tension and apprehension at a given moment resulting from past experiences or the perception of the situation as threatening.

Equipped with the idea that anxiety was composed of more than one element, researchers began a closer examination of the trait and state anxiety components. It was proposed that the various circumstances which an individual encounters can influence that person's behavior, that is, an individual's behavior is determined by an interaction of personal traits and different situations. To understand the effect anxiety has on performance it is necessary to consider both the trait anxiety of the athlete, the constraints of the situation (Endler & Hunt, 1966), and the notion that individuals respond differently to different situations (Endler & Okada, 1975).

Spielberger (1971) elaborated on Endler and Hunt's (1966) proposal by suggesting that one of the major antagonists in increased anxiety is the perception of a situation as threatening. The perception of threat is

determined by numerous intrapersonal factors including ability, task difficulity, past experiences in similiar situations, personality dispositions, and how the athlete perceives the opponent (Mudra, 1980; Spielberger, 1971). The level of state anxiety derived from the threat perception will be proportional to the amount of threat that the situation possesses, and that the duration of the state anxiety reaction will be terminated when the situation is no longer perceived as threatening (Spielberger, 1971). In attempting to study this notion, Spielberger and his associates developed the State-Trait Anxiety Inventory (STAI)(Spielberger, Gorsuch & Luschene, 1970). This device made it possible to assess both trait and state anxiety with the same instrument at the same time.

While the reasons for threat perception are numerous, one of the most central factors may be the athlete's perception of threat and how it relates to success and failure (Scanlan, 1977). These factors appear to develop from cumulative success or failure experiences in similiar situations (Scanlan & Passer, 1978). Numerous studies have proposed that individual levels of state anxiety increase after failure and decrease after success (Dowthwaite & Armstrong, 1984; Gaudry and Poole,1972; Hall, 1980; Martens & Gill, 1976; Weinberg, 1979). For example, in Gruber and Beauchamp's (1979) study, women basketball players were more anxious before three crucial games than three easy ones. State anxiety was

significantly reduced after games that they won but remained high following games they lost. Wrestlers who competed for positions on various national teams found that those who were successful recorded lower levels of anxiety than those who were unsuccessful (Highlen & Bennett, 1979; Morgan, 1974). Successful divers and wrestlers experienced lower arousal at competition time when compared to less successful divers and wrestlers (Highlen & Bennett, 1983).

Sport Competition Anxiety Test. The evolution of these new theories resulted in the development of a new situation-specific measuring inventory, the Sport Competition Anxiety Test (SCAT)(Martens, 1977). It became the first situation-specific device capable of assessing subjects' general expectations to feel anxious in competitive situations as well as being an excellent predictor of precompetitive state anxiety (Gerson & Deshaies, 1978; Martens & Gill, 1976; Martens & Simon, 1976; Wandzilak, Potter & Lorentzen, 1982).

In the development of SCAT, Martens (1977) defined trait and state anxiety in a competitive situation. Trait anxiety was defined as "a predisposition to perceive certain environmental stimuli as threatening or nonthreatening and to respond to these stimuli with varying levels of state anxiety" while state anxiety was defined as "an existing or current emotional state characterized by feelings of apprehension and tension and

associated with activation of the organism."

With the advancement of SCAT, it was possible to accurately assess differences between high and low trait anxious athletes in competitive situations. Comparison studies soon established a couple of important points. Athletes inflicted with higher levels of competitive trait anxiety were suspectible to higher levels of pre-competitive state anxiety (Huband & McKelvie, 1986; Scanlan & Passer, 1978) and athletes who displayed superior skills generally experienced lower levels of competitive trait anxiety than lower skilled athletes (Power, 1982).

With the knowledge of the effects of trait anxiety and player skill level on state anxiety, additional studies began to examine new potential sources of competitive anxiety, situations where it occurred, and the possible reasons behind it. This research uncovered a new source of anxiety by suggesting that subjects were greatly influenced by the event's outcome. Winners of competitive events remained relatively calm despite being high or low trait anxious (Martens & Gill, 1976). Winning or losing the game was clearly a very powerful predictor of post-game state anxiety with the losers having higher levels than winners (Scanlan & Passer, 1978). In evaluating differences between winners (successful) and losers (unsuccessful), fear of failure and fear of evaluation were found to be central contributors to increased state anxiety (Dowthwaite & Armstrong,

1984; Passer, 1983; Scanlan & Passer, 1981). Further research proposed that individuals who are more competitive trait anxious may be more likely to experience higher levels of state anxiety from negative thinking, feelings of incompetence, low self-esteem, and frequent worries about their performance (Brustad & Weiss, 1987; Rainey, Conklin & Rainey, 1987; Scanlan & Passer, 1978).

Multidimensional Anxiety. Research into anxiety was expanded by examining anxiety as more than a one dimensional variable. Landers (1980) followed earlier researchers by proposing that new studies on anxiety be more specific. To accurately assess anxiety, a multidimensional, situationally specific measuring device was necessary. He proposed that anxiety was more than one dimensional and to only assess one aspect of anxiety was providing less than complete research. Fisher and Zwart (1982) were among those who furthered the multidimensional theory by suggesting that anxiety was the by-product of three dimensions, ego threat, outcome certainity/uncertainity and anticipation. Their research proposed that ego threatening situations would reveal the highest state anxiety responses.

Martens, Burton, Vealey, Bump & Smith (1983) were the first to develop and refine a multidimensional testing instrument for a competitive situation, the Competitive State Anxiety Inventory-2 (CSAI-2). The CSAI-2 proposed that state anxiety comprised three subcomponents, cognitive

anxiety (worry), somatic anxiety (physiological arousal), and confidence. Research studies using this instrument have generally verified that the CSAI-2 does assess these three separate components (Gould, Petlichkoff & Weinberg, 1984; Gould, Petlichkoff, Simons & Vevera, 1987; McAuley, 1985b) although Barnes, Wesley, Dienstbier, and Plake (1986) suggested that the CSAI-2 does not measure these three variables. They proposed that cognitive anxiety and confidence fall on the same continuum and that they are actually measuring the same variable.

Team Sports vs. Individual Sports. Other researchers examined differences between individual and team sport participants and how scoring may influence anxiety. Studies revealed that athletes in individual sports exhibited greater pre-game anxiety than athletes in team sports (Johnson, 1949; Simon & Martens, 1979) and that athletes in sports scored subjectively by judges had higher cognitive anxiety and lower self-confidence than athletes in objectively scored sports (Krane & Williams, 1987).

Anxiety Summary. The knowledge that threat, fear of failure, evaluation, and subjective scoring can influence anxiety and alter feelings of competence is vitally important. This leads many athletes to strive to reduce stress in hopes of achieving successful performance. Unfortunately, one of the major obstacles to reducing state anxiety is the ability to

perform the necessary skills. The ability to perform can have an influence on anxiety just as anxiety can influence performance (Cook, Gansneder, Rotella, Malone, Bunker & Owens, 1983). Experiences with both success and failure in competitive situations often times serves as the catalyst for increases or decreases in state anxiety. Successful athletes who have achieved a high level of expectancy and self-confidence seem to be able to deal with anxiety in a way which allows them to achieve peak performance over a wide range of situations (Bunker & Rotella, 1980). Expectancy of success has been found to be an important determinant of contest outcomes. Expectancy is vital because it may determine the amount of effort put forth before, during, and after the contest and thus influence performance and outcome (Fleet, James & Rushall, 1984).

Sports officials may be very much like athletes. The perception of a situation as threatening, the fear of failing at crucial moments, and being constantly confronted with subjective evaluation could cause increases in anxiety. High trait anxious officials may view more situations as threatening and see themselves performing poorly under pressure. Pre-game and/or post-game performance evaluations may serve to create state anxiety and negatively influence future performances. Officials who are capable of recognizing and controlling their anxiety will be more successful officials. They will be able to perform at their maximum ability level

despite the stress of the contest.

Confidence in Sport

While research generally agrees that sport performance is impacted by feelings of anxiety and confidence, coaches, players, and other sports authorities concur that self-confidence is a highly important ingredient when attempting to achieve success. The reason that sports figures so sincerely covet and place such a high price on the presence of self-confidence may derive from the knowledge that it is so evasive. Participants know that while it may take years to capture an adequate dose of self-confidence, a sub-par performance or one critical mistake can set the feelings of self-doubt in motion.

Bandura's Theory of Self-Efficacy. Various terms defining self-confidence have arisen in sport psychology literature but the most prominent is "self-efficacy" (Bandura, 1977). Bandura described self-efficacy as the conviction one has to execute successfully the behavior required to produce a certain outcome. He makes his distinction between self-confidence and self-efficacy this way. Self-confidence is the strength of the belief that an individual possesses the necessary capabilities to perform and be successful. Self-efficacy, on the other hand, is considered to be situationally specific and emphasizes with more specificity the level of perceived competence and the level of the individual's belief. In other

words, the belief that one can perform a particular activity in a particular setting (Feltz, 1988). Self-efficacy is concerned with judgements about how well an individual can organize and execute a course of action required to deal with situations containing many ambiguous, unpredictable, and often stressful elements (Bandura & Schunk, 1981).

In accordance with Bandura's theory, the strength of self-efficacy expectations is influenced by four primary sources of information; performance accomplishments, vicarious experiences, verbal persuasion, and physiological states (Bandura, 1977). The most important and informative of these variables is past performance accomplishments. If prior experiences are thought of as successful, they will raise efficacy expectations, if they are viewed as not being successful they will in all likelihood lower efficacy expectations. Bandura suggests that level and strength of efficacy will fluctuate depending on the difficulty of the task, the number of failed attempts when the task is performed early in learning, and whether the task is performed independently or with external aids (Bandura, 1982).

Vicarious experiences influence self-efficacy by making available information obtained from observing someone perform a task that they themselves have never attempted. This technique, known as modeling, can invoke more efficacy information if the outcome of the model's performance

is seen clearly rather than when the outcome remains ambiguous. If people of widely differing capabilities are viewed as being successful, rather than someone who specializes in a particular technique, then observers have a reasonable basis for experiencing an increase in their efficacy expectations (Bandura, 1977).

Persuasive techniques, while not as potent as one's own accomplishments, can be influential in modifying the learner's behavior. Verbal persuasion is often used as an information source because of its ease and ready availability. If feedback is within an acceptable range, not viewed as false or heightened beyond reason, and the persuader is viewed as credible and trustworthy, then persuasive techniques can be effective in modifying behavior (Bandura, 1977; Feltz, 1988).

A fourth source of information that can influence efficacy expectations is emotional arousal. Emotional arousal can provide information that can affect a person's perceived self-efficacy in dealing with stressful and/or threatening situations. People rely partly on the knowledge of their physiological arousal in determining their anxiety and vulnerability to stress. Because large amounts of anxiety have an adverse effect on performance, individuals may feel more comfortable with their prospects for success if they are not overrun with aversive arousal. Fear about their perceived ability or their ability to perform can cause elevated levels of

anxiety that are worse than the anxiety experienced during the actual threatening situation. Increased self-efficacy is associated with low performance arousal (Bandura, 1977) and can lead individuals to believe they are less vulnerable than they previously believed and are therefore less likely to succumb to frightening thoughts in fearful situations (Bandura, 1977).

Bandura's theory of self-efficacy served as the basis for much of the research on self-confidence in sport. Bandura's hypothesis regarding performance accomplishment was tested by comparing high and low self-efficacy subjects on their ability to perform a muscular endurance task (Weinberg, Gould & Jackson, 1979). It was predicted that individual efficacy expectations would influence the amount of effort that a person would put forth. Subjects were divided into high and low self-efficacy groups. Results indicated that the subjects in the high self-efficacy group performed better by extending their legs longer than subjects in the low self-efficacy condition (Weinberg, 1986; Weinberg, Yukelson & Jackson, 1980). Weinberg, Gould, Yukelson and Jackson (1981) conducted a study which attempted to manipulate the efficacy expectations of both high and low efficacy subjects. Results found that when subjects were confronted with changes in their efficacy expectations there was a corresponding change in their performance. High self-efficacy subjects again extended

their legs longer than low efficacy subjects.

Research into Bandura's prior performance theory has proven to be highly significant in attempting to predict future athletic performance (Feltz, 1982; Feltz & Weiss, 1982). Lee (1982) found that another accurate predictor of athletic performance is the athlete's expectation of success. If the athlete has high self-efficacy and expects to perform well, this will probably be transferred to his performance and serve to greatly enhance his chance for success.

Research on participant modeling has concurred with information gathered on performance accomplishments. In studying the effects of modeling, Feltz, Landers and Raeder (1979) found that participants who observed a model perform a skill and who were then assisted in their performance attempts performed better and obtained stronger efficacy expectations than persons who were exposed to live or videotaped modeling techniques but received no assistance. McAuley (1985a) found similiar results using female undergraduates on a gymnastic skill. Subjects who were exposed to modeling performed better than those in a control group and those subjects who observed the model and were then aided, scored higher on the performance measure than did the unaided participant modeling group. Gould and Weiss (1981) examined the specificity of modeling in their study using college females and a muscular endurance task. Their results

indicated that performance and self-efficacy were enhanced after observing a model who was perceived to be similiar in age, sex, and athletic ability.

Emotional Arousal and Self-Efficacy. Research into emotional arousal suggests that arousal has a definite impact on efficacy expectations. Lan and Gill (1984) in their study comparing easy and difficult tasks and the effects of arousal suggest that easy tasks elicited higher self-efficacy than difficult tasks. Individuals reported lower cognitive and somatic anxiety, higher self-confidence and a lower heart rate when performing easy tasks. Highlen and Bennett (1979) in their wrestling study, discovered that elite wrestlers who qualified for positions on various national teams were more self-confident and experienced lower levels of anxiety prior to and during competitions than non-qualifiers.

Perceived Competence. While Bandura's theory of self-efficacy is the most prominent and widely tested theory regarding self-confidence it is not the only theory. Harter's (1978) theory of perceived competence, though better suited for children and not as specific as Bandura's theory of self-efficacy, proposes that an individual's feelings of competence are related to physical, social, and cognitive considerations. This developmentally oriented theory suggests that perceived competence is altered by individual successes and failures, by the individual who has control over the results, and how those results are translated by a

significant other. Favorable results and interpretations will result in increased perceived competence, motivation, and continued participation (Roberts, Kleiber & Duda, 1981) while failures will result in perceptions of low ability, decreased motivation, and discontinued involvement. Harter further proposed that the longer an individual persists in a given activity, the more experience that is garnered, the more opportunity one has to develop a sense of competence in that particular setting.

Sport-Confidence. Vealey (1986) extended the study of confidence a step further by developing instruments designed specifically to study confidence in sport. Vealey conceptualized that confidence in sport was divided into two seperate components, trait and state, and developed instruments to measure each. Trait sport-confidence, which is assessed using the Trait Sport-Confidence Inventory (TSCI), represents the feelings that an individual possesses about his/her ability to be successful in sport. State sport-confidence, measured by the State Sport-Confidence Inventory (SSCI), is concerned with an individual's perception of his/her ability to be successful in sport at a particular moment. In an unusual approach, the TSCI and SSCI are designed to measure subjects' feelings of confidence compared to the most confident athlete they know. These feelings revolved around both physical and psychological expectations. To gain added insight, Vealey also devised the Competitive Orientation Inventory (COI) to help in

determining and defining what success means to different people. She based the COI on two different variables, performing well and winning, and that individual ideas about the value of these variables would influence perceptions of success.

Vealey (1986) hypothesized that individual performance could be predicted by evaluating state sport-confidence scores. Unfortunately her research on the development of the measurement scales revealed that pre-game SSCI results were not an accurate predictor of performance although preformance was a predictor of post-game SSCI scores.

Confidence Summary

Bandura's (1977) theory of self-efficacy is considered to be situationally specific, to have an emphasis on perceived competence and the level of an individual's belief. Individual expectations of efficacy are thought to be influenced by performance accomplishments, vicarious experiences, verbal persuasion, and physiological states. The information individuals absorb from these four sources influences their level of belief to achieve a certain outcome. When individuals have high self-efficacy expectations they have a tendency to perform better than those with low efficacy expectations. If an athlete believes in his/her chances for success they are more likely to be successful (Lee, 1982). The belief individuals have in their own ability is impacted by levels of anxiety. Successful

performers are more likely to feel confident and less anxious than less successful athletes (Highlen & Bennett, 1979). Harter (1978) proposes a person's competence is altered by three factors; individual successes/ failures, who has control over the results, and how the results are translated. Harter also stresses the importance of experience. The longer a person persists in an activity the more competent he/she will feel. Vealey (1986) attempts to narrow the concept of confidence by developing inventories specifically for measuring confidence in sport. She proposes that "sport-confidence" is comprised of two subcomponents, trait and state-sport confidence. Vealey predicts that performance can be predicted by evaluating state confidence.

In a continuing effort to enhance their confidence, the literature suggests that officials should study and learn from their past experiences, observe other officials, obtain and evaluate feedback about their performances, and learn how to control their arousal level. Developing a strong belief in their ability to perform successfully in any situation is critical to excellence.

CHAPTER 3

METHODOLOGY

Subjects

Twenty-seven high school basketball officials from the Colorado Springs Basketball Officials' Association (CSBOA) served as subjects for this study. High school officials were selected because it was anticipated they would present a wide variety of officiating ability, anxiety, and self-confidence. It was felt that most college and professional basketball officials would possess unique abilities, very high levels of confidence, and be capable of controlling their anxieties. Officials working below the high school varsity level might generally possess less ability, be less confident, and be incapable of controlling their anxieties.

Fifty-five officials were targeted as potential subjects. They were selected because they had at least three years of varsity officiating experience and were currently officiating some level of high school varsity basketball.

Following the completion of the protocol established by the Human Subjects Board, the fifty-five potential subjects were notified by mail of the study and asked for their participation (see Appendix A). In addition, two members of the CSBOA were contacted to ask their help in gathering

completed questionnaires and forwarding them to the author. Each subject was asked to attend a meeting where the investigator could distribute questionnaires, explain procedures regarding the questionnaires, answer questions and subjects could sign human subject consent forms. All subjects were guaranteed that their individual responses would be kept confidential although group data would be shared with the entire association. Thirty-three chose to participate in the study and twenty-seven were eventually selected for analysis. There were twenty-five men and two women.

The selection of the CSBOA was based upon the investigator's knowledge of the group, their use of frequent group meetings, mandatory rules governing attendance of meetings, strict attention to officiating mechanics and rules knowledge, and their exclusive officiating rights to all high school basketball games in the area. CSBOA members officiate with many different partners and would be capable of generally assessing each member's officiating ability.

Classification of Schools

Each school is assigned to a specific classification, according to school size, by the Colorado High School Activities Association (CHSAA). Official CHSAA classifications are 1A-II (smallest), 1A-I, 2A, 3A, and 4A (largest). For the purpose of this study 1A-II and 1A-I were combined into the

classification 1A. This was done because of the large crossover in games played between the two classifications. Class 2A schools were capable of being evaluated alone as there was very little crossover with other classifications. Class 3A and 4A schools were combined because they were few in number and played within the same league.

Group Rankings

Each subject was asked to rank each of the 55 other potential subjects on how they perceived each person's basketball officiating ability. The ranking questionnaire contained the names of the 55 possible subjects. The questionnaire required that the subject place a number beside each name. The number signified where that person was ranked in relation to everyone else. If the rater felt that someone was the best official in the group they placed the number one by that person's name. This continued until all 55 subjects, including themselves, had a number. Numbers could be used only once. Those who were ranked in the top 33% were considered high ability officials and those in the lower 33% were considered low ability officials.

Measures of Sport-Confidence

In an effort to assess each subject's general and immediate feelings of confidence the Trait Sport-Confidence Inventory (Vealey, 1986) and the State Sport-Confidence Inventory (Vealey, 1986) were administered to each subject. The TSCI and SSCI contain 13 questions and are self-report

measures which ask the respondents to compare their levels of confidence to the most confident athlete they know on a 9-point Likert scale. To make both instruments more appropriate, the author substituted the word "official" for the word "athlete". Thus each subject was asked to compare him/herself to the most confident official they know.

Validation procedures for the TSCI and SSCI involved 666 high school, college and adult subjects and took place over five phases. Both instruments demonstrated adequate item discrimination, internal consistency, test-retest reliability, content validity, and concurrent validity as well as determining that both constructs were unidimensional (Vealey, 1986).

Trait Sport-Confidence Inventory (TSCI). Each official's general feelings of confidence were measured by the Trait Sport-Confidence Inventory (Vealey, 1986). The TSCI is designed to assess an individual's general feelings of self-confidence compared to the most confident official they know. Comparisons were made on numerous variables such as "ability to make critical decisions," "performance under pressure," and "their ability to concentrate."

Scores on the TSCI assess trait-confidence in a sport environment and range from 13 (very low confidence) to 117 (very high confidence). The normative means for each sample group indicate moderate levels of trait sport-confidence for the high school and college/adult samples. These

means contrast sharply with the elite athlete sample whose mean score is much higher than the high school and college/adult samples. Such a high mean indicates that elite athletes are much more confident in a sport situation than the other two sample groups (see Table 1)(see Appendix B for a copy of the TSCI and scoring procedures).

Table 1

Normative Data for the TSCI

Group	M	Median	Low	High	SD
High School[a]	77.66	77	43	117	14.81
College/Adult[b]	77.77	79	16	117	17.09
Elite[c]	99.79	99	65	117	13.65
Total[d]	82.30	83	16	117	17.88

[a] n=92. [b] n=91. [c] n=48. [d] n=231.

State Sport-Confidence Inventory (SSCI). Each subject's level of baseline, pre- and post-game confidence was measured by using the State Sport-Confidence Inventory (Vealey, 1986). The SSCI is designed to assess immediate feelings of self-confidence compared to the most confident official they know. Like the TSCI, the SSCI compared official's feelings on, among other things, their "ability to concentrate," "perform under pressure,"

and their "ability to make critical decisions."

Like the TSCI, scores on the SSCI assess confidence in a sport situation and can range from 13 (very low confidence) to 117 (very high confidence). The normative data mean scores indicate moderate levels of state sport-confidence for the high school and college/adult samples. The elite sample mean indicates a very high level of confidence. This denotes that the elite sample is much more state sport-confident than the other normative samples (see Table 2) (see Appendix C for a copy of the SSCI and scoring procedures).

Table 2

Normative Data for the SSCI

Group	M	Median	Low	High	SD
High School[a]	77.64	79	32	117	17.86
College/Adult[b]	78.88	78	37	117	17.90
Elite[c]	106.19	111	77	117	11.14
Total[d]	84.20	84	32	117	20.18

[a] n=88. [b] n=90. [c] n=48. [d] n=226.

Measures of Anxiety

In an effort to assess each official's general and immediate feelings of anxiety, all subjects were given tests to measure their competitive trait

anxiety as well as baseline, pre and post-game state anxiety. Competitive trait anxiety was measured using the Sport Competition Anxiety Test (Martens, 1977). Baseline, pre and post-game state anxiety was evaluated using the Competitive State Anxiety Inventory - 2 (Martens, Burton, Vealey, Bump, & Smith, 1983). In an effort to make both instruments more appropriate, the author substituted the words "official" and "officiate" for the words "athlete" and "competition."

Sport Competition Anxiety Test (SCAT). The SCAT (Martens, 1977) is an instrument developed to measure an individual's level of trait anxiety during competitive situations. The SCAT is a 15-item, three point Likert scale, self-report instrument. Respondents answer statements such as "before I compete I worry about not performing well," and "I get nervous waiting to start the game," by responding "hardly ever," "sometimes," or "often."

Validation procedures revealed that the SCAT possesses adequate item discrimination, internal consistency, reliability, content validity and concurrent validity. The instrument was developed by testing over 2500 subjects.

Scores on the SCAT can range from 10 (low anxiety) to 30 (high anxiety). The normative data indicate moderate levels of trait anxiety for both males and females in the high school and college age samples. Males in both groups

are less anxious than females with college age males experiencing the lowest levels of anxiety of any of the normative samples (see Table 3) (see Appendix D for a copy of SCAT and scoring instructions).

Table 3

Normative Data for SCAT

Group	M	SD
10th &12th graders		
male[a]	20.03	3.90
female[b]	22.22	4.40
College age students		
male[c]	19.74	4.68
female[d]	22.60	4.87

[a] n=129. [b] n=113. [c] n=370. [d] n=158.

Competitive State Anxiety Inventory - 2. The CSAI-2 (Martens, Burton, Vealey, Bump & Smith, 1983) was administered to all subjects to determine baseline, pre- and post-game anxiety. It is a 27 item, four point Likert scale, self-report instrument designed to measure competitive state anxiety. It is a valid multidimensional device that separately evaluates cognitive anxiety (worry), somatic anxiety (heightened physiological arousal) and self-confidence. Subjects respond to statements regarding cognitive

anxiety, "I am concerned that I may not do as well in this game as I could," somatic anxiety, "I feel tense in my stomach," and self-confidence, "I feel at ease," by answering "not at all," "somewhat," "moderately so," or "very much so."

Scores on the CSAI-2 can range from 9 to 36. A score of 36 indicates very high levels of anxiety and confidence while a score of 9 means low levels of anxiety and confidence (see Appendix E for a copy of the CSAI-2 and scoring instructions). To establish norms for the CSAI-2, college male and female athletes from a variety of team and individual contact and non-contact sports were examined. Martens et al. (1983) attempted to

Table 4

Normative Data for the CSAI -2

	Team Sports[a]		Individual Sports[b]	
Group	M	SD	M	SD
cognitive	13.92	3.99	15.43	4.62
somatic	15.55	4.58	17.34	4.27
self-confidence	27.64	4.76	25.08	5.72

[a] n=96. [b] n=111.

provide the most comprehensive and detailed analysis of the normative data. The researchers performed studies not only on individual, team, contact, and non-contact sports but they also combined numerous sports to provide crossover data. However, for the purpose of this study and in an effort to simplify and minimize the normative data, only data from individual and team sports were reported (see Table 4). Data from individual sports (n=111) were compiled from gymnastics (22 males and 20 females), swimming (18 males and 16 females), and track (35 males). Team sports (n=96) were basketball (41 males and 43 females) and volleyball (12 females).

Procedures

Data gathering. Subjects were asked to provide trait and baseline data in addition to data before and after three games. Because data were to be completed over a three week period, each subject received a questionnaire packet which included an instruction sheet detailing when each form was to be completed (see Appendix F). Subjects were instructed to complete the trait anxiety and confidence measures at their convenience but not less than 48 hours prior to a game and the baseline assessments not less than 24 hours prior to a game. Subjects were asked to complete the pre- and post-game inventories for any three games. And player gender should have no bearing on their decision to provide data for a particular game. State confidence and

anxiety materials were to be completed not more than 30 minutes prior to the game while post-game assessments were completed within 30 minutes following the game. Subjects were asked to provide the date and time they completed the questionnaires. This helped provide a check on whether they followed the instructions.

With the completion of each questionnaire, it was inserted into an envelope containing the test name or game number and the subject's pre-assigned identification number. The envelope was then sealed to insure complete confidentially and to extinguish the desire to change a response. Each subject then placed all his/her envelopes into a larger envelope and had them returned to the investigator.

Treatment of the data. To make the comparisons between high ability and low ability officials, descriptive statistics, chi-square analyses, t tests, and post hoc comparisons were performed on the data. All statistical analyses were conducted on a Cyber 750 mainframe computer using version 8.3 of the Statistical Package for the Social Sciences (SPSS; Nie, Hull, Jenkins, Steinbrenner & Bent, 1975).

Descriptive statistics of each official's ranking, as rated by their peers, provided the median for the breakdown of the officials into their respective groups. Chi-square analysis examined differences between groups on the variables player gender and school classification. T tests were employed to

compare the group's trait, baseline, pre- and post-game confidence and anxiety. In most cases multivariate analyses could not be used because the breakdown of the data provided too few subjects in each group. The Scheffe´ method was used for all post hoc multiple comparisons.

CHAPTER 4

RESULTS

The original premise of this study revolved around the psychological characteristics of officials who were rated either high or low in ability. It was hypothesized that high ability officials would express greater amounts of confidence and be less susceptible to increases in anxiety than low ability officials. This comparison could lead to a better understanding of why some officials are thought to be better than others and why the better officials are more likely to receive the most coveted assignments.

There are many variables which may eventually prove to have a direct impact on a referee's feelings of confidence and anxiety. Of these variables the official's rankings, official's age, their level of education, occupation, sports background, officiating experience, player gender and school size may hold important keys to this research.

Official's Rankings

Perhaps the most difficult and critical area of this study involved the creation of the high and low ability groups. Fifty-five officials were originally designated as possible subjects. Those officials who elected to participate were asked to rank each of the 55 potential subjects, including themselves, according to their perceptions of each person's officiating ability in relation to everyone else. Based on these ratings, each official

was assigned to a high, medium, or low ability group as determined by the median of all the scores assigned to them (see Table 5). The median was used because while most subjects were familiar with all 55 officials, it became apparent when observing the data that some subjects were not as familiar with everyone as others were. Using the mean would have skewed the rankings and not offered the most accurate assessment.

Of the 55 possible subjects, 33 (60%) actually contributed data to the study by completing the confidence and anxiety questionnaires. Two of the 33 participants failed to fill out the group ranking form. This left 31 officials who took part in the group rankings.

The higher rated group (HRO) had 14 subjects, the lower rated group (LRO) had 13 subjects, and the middle group had six subjects. In an effort to enhance the comparisons between the high and low ability officials, the middle six subjects were eliminated from the analyses.

The individual rankings, which could be considered an assessment of each official's own perceived ability relative to the other officials, proved most insightful. Two subjects ranked themselves number one (the best official in the group) while five others ranked themselves as the second best official. Sixteen subjects (51.6%) rated themselves in the top 10 and 21 (67.7%) ranked themselves 17 or higher, placing them in the upper 30 percent of the total group. Ten rated themselves in the 11 to 20 range while six felt they fell within the span of 21 to 32. Out of 55 possible positions,

Table 5
Official's Group and Self-Rankings

HIGH RANKED OFFICIALS

Assigned Group Ranking	Self Ranking	Diff.	Median
1	2	-1	1.41
2	2	0	3.60
3			4.40
4	1	3	6.25
5	1	4	7.25
6	9	-3	8.80
7	6	1	9.00
8			9.25
9	2	7	10.00
10	2	8	10.75
11	12	-1	11.25
12			11.33
13	5	8	14.63
14	8	6	14.87
15	5	10	15.25
16	16	0	17.75
17			22.25
17	2	15	22.25

MIDDLE GROUP (not used)

19	5	14	23.00
20			23.33
21			24.00
22			24.50
23			25.00
24	13	11	25.50
25	14	11	25.75
26			27.00
27			27.75
27			27.75
29			28.25
30	25	5	28.33
31			30.00
32			30.75
33	9	24	32.00
34	30	4	32.50
35			32.67
36			33.33

LOW RANKED OFFICIALS

Assigned Group Ranking	Self Ranking	Diff.	Median
37	20	17	34.33
38	19	19	35.00
39			37.12
40	32	8	39.00
41	8	33	40.08
42	17	25	40.50
42			40.50
42			40.50
45			42.50
46			43.75
47	19	28	43.83
48			44.25
49	17	32	45.50
50	30	20	46.00
50	20	30	46.00
52			46.83
53			47.00
54	24	30	49.50
55	10	45	52.50

(Each official was assigned their group ranking according to their median score. Self-rank is where each official ranked him/herself in relation to the entire group. Diff. is the difference between their group and self-ranking. Blank spaces under self-rank and diff. reflects those subjects who were submitted to the group for rating but did not participate themselves)

no one ranked themselves below 32. Twenty-eight of the 31 participating officials (90.3%) rated themselves in the top half of the total group (27th or better). Only two officials rated themselves equal to their group rating. Three subjects placed themselves below their group rating and one of those was considered the best official by the group, thereby allowing that subject no margin for error. The largest range between an individual's self and group rating was 45.

The mean difference between an individual's group and self-rating varied depending upon the group. The difference within the high ability group was 4.8 places, the middle group 11.5, and the lower group 26.1 places. All three groups combined had a mean difference of 13.7 places while the high and low rated groups combined varied 14.2 places.

Demographics

Official's age. The combined average age of the high and low rated officials was 39.5 years (SD = 6.59). There was less than one year separating the ages of the high ability officials (M = 39.2 yrs., SD = 6.28) from the low ability officials (M = 40.0 yrs., SD = 7.00).

Official's education. Each official was asked to report the highest level of education he/she had completed. Results indicated that all participating officials had completed high school and no subject had completed a degree beyond a master's. Eighteen officials (75%) had received

a degree from a four year college. Each groups' educational experiences are reported in Table 6.

Table 6

Official's Highest Level of Completed Education

	High Ranked[a]	Low Ranked[b]
High School	4	0
Jr. College	0	2
College (4 yr.)	4	3
Master's Degree	5	6

Note. Missing data accounted for fewer subjects in the high and low ability groups

[a] n=13. [b] n=11.

Official's occupation. The majority of officials in this study engaged in occupations that could be considered "white collar." The high ability group is comprised of five teachers, two principals, two computer analysts, a recreation professional, a real estate broker, a pilot, and a warehouseman. The low ability group is made up of three teachers, two individuals who operate their own businesses, a rate analyst, an electrical engineer, a manager, a financial planner, a postal service worker, and a salesman.

Official's sports participation. All subjects were requested to

supply data on their participation in scholastic and/or collegiate sports. Results indicated that six HROs participated in high school sports, seven competed in both high school and college, and one did not participate in either. Lower rated officials reported that five subjects competed in high school, five in both high school and college, one in college only, and one did not participate in either high school or college (see Table 7).

Table 7

Official's Sports Participation

	High Ranked[a]	Low Ranked[b]
High School		
Basketball	11	6
Football	9	6
Baseball/Softball	9	3
Track/Cross Country	5	3
Tennis	3	1
Swimming	0	1
Volleyball	0	1
College		
Basketball	6	1
Football	0	1
Baseball/Softball	2	3
Track/Cross Country	2	0
Tennis	3	1
Volleyball	0	1

[a] $n=13$. [b] $n=11$.

Player gender. Officials in this study worked both boys' and girls' high school basketball games. Data were reported for 78 games, 51 boys and 27 girls. The higher rated group worked 42 games, 33 boys (78.6%) and nine girls (21.4%), while the lower rated officials worked 36 games, 18 boys (50.0%) and 18 girls (50.0%)(see Table 8). Chi-square analysis determined that these differences between boys' and girls' games and official's rank were statistically significant, χ^2 (1, N = 78) = 6.996, $p < .01$.

Table 8

Boys' and Girls' Games Officiated by High and Low Ranked Officials

	High Ranked[a]	Low Ranked[b]
Boys' games	33	18
Girls' games	9	18

[a] n=42. [b] n=36.

School classification. Another important variable that may influence feelings of anxiety and/or confidence is school size. Larger schools often draw bigger crowds, more media attention, and involve a higher caliber of play. Higher rated officials worked only seven games of the smallest classification (1A) while they officiated seventeen 2A and seventeen 3 and 4A games (see Table 9). The low ability group officiated

many more games involving smaller schools. The LROs worked more 1A games (18) than 2A and 3 and 4A games combined (17)(see Table 9). Chi-square analysis found these differences to be highly significant, X^2 (1, N = 76) = 10.99, p < .01.

Table 9

Classification of High Schools Participating in Games Officiated by High and Low Ranked Officials

	High Ranked[a]	Low Ranked[b]
Classification of teams (All Games)		
1A = smallest	7	18
2A	17	6
3 & 4A = largest	17	11

Note. Missing data resulted in the fewer number of games than the 42 and 36 games that were previously reported.

[a] n=41. [b] n=35.

Officiating experience. The influence that past experience has on anxiety and confidence cannot be underestimated. To determine how much variation existed between HROs and LROs, each groups' previous basketball officiating experience was assessed two ways. First, a comparison was conducted involving their total number of years of basketball officiating experience. This comparison revealed highly significant differences

between the two groups (see Table 10). This variance appears to have resulted from HROs having more basketball officiating experience (5.8 yrs.) than the low ability group. Second was an examination of the differences relative to officiating high school varsity games. A mean difference of 6.3 years of varsity experience proved to be significant. As shown in Table 10, the high rated groups' varsity officiating experience (12.5 yrs.) is more than double the years of varsity experience for the entire lower rated group.

Table 10

Officiating Experience t Tests, Means and Standard Deviations

	High Ranked[a]		Low Ranked[b]			
Measure	M	SD	M	SD	t	probability
Years of officiating experience	14.2	5.4	8.3	4.5	2.87	< .01
Years of officiating H. S. varsity	12.5	6.3	5.7	4.9	2.91	< .01

[a] n=13. [b] n=11.

Rankings and Demographic Summary

A brief examination of the official's rankings and the comparisons of the official's ages, officiating experience, player gender and school size revealed some interesting results. The rankings indicated that both groups of officials have strong, positive feelings about their basketball officiating

ability. These feelings may be reflected in later analyses by revealing high confidence scores and low levels of anxiety.

There was an average of less than one year separating the ages of the two groups although analyses found significant differences in officiating experience and varsity officiating experience. These findings result from HROs having more experience than LROs. All subjects have completed high school and 75% have obtained a bachelor's degree from a four year college. Both high ability and low ability subjects were active in high school and collegiate athletics although one subject in each group did not participate in either high school or college sports.

Frequencies and chi-square analyses found that high rated officials worked significantly more boys games and games involving larger schools than the low ability group. These differences may accompany mixed feelings of confidence and/or anxiety depending on the circumstances surrounding each game.

SPORT CONFIDENCE

Assessments of sport-confidence were taken from each subject on eight separate occasions. This was done to gain a more accurate determinate of group differences. Testing instruments included the trait sport-confidence inventory (TSCI)(Vealey, 1986), and the state sport-confidence inventory (SSCI)(Vealey, 1986). The SSCI served as the baseline measure as well as

for assessing pre-game and post-game confidence. Analyses were conducted using t tests and the Scheffe´ method for post hoc comparisons.

Trait and Baseline Sport-Confidence

The hypothesis concerning trait sport-confidence proposed that HROs would possess greater amounts of confidence than LROs. The analyses, using t tests, verified this hypothesis by revealing a strong statistical difference between the two groups. An examination of the group means suggested that this difference resulted from HROs generally feeling more confident about their officiating ability than LROs. Group means showed that both groups had confidence levels equivalent to those found in elite athletes in Vealey's (1986) normative sample (see Table 1). Means and standard deviations are presented in Table 11.

In spite of the value of establishing a fundamental score for state confidence, no hypothesis was formulated for baseline confidence (assessments completed 24 hours prior to a game). However, an examination of the means uncovered no statistical significance. This contradicts the trait confidence finding and appears to result from LROs exhibiting a heightened sense of confidence. A visual check of the means found that both groups experienced a slight increase in confidence over their trait levels and that both groups continued to be equally as confident as Vealey's (1986) elite athletes (see Table 2). Means and standard deviations for trait and baseline confidence are reported in Table 11.

Table 11

Trait and Baseline Sport-Confidence t Tests, Means and Standard Deviations

	High Ranked[a]		Low Ranked[b]			
Measure	M	SD	M	SD	t	probability
TSCI	105.79	7.34	95.00	10.15	3.09	$p < .01$
SSCI, Baseline	106.07	7.01	101.00	9.68	1.55	$p > .10$

[a] $n=14$. [b] $n=13$.

State Sport-Confidence

The state sport-confidence hypothesis proposed that high ability officials would express significantly more confidence than low ability officials. The pre-game and post-game analyses revealed this hypothesis to be true. Interestingly, both groups reported their post-game confidence levels to be greater than pre-game confidence. Both HROs and LROs continued to report their confidence, in all cases, to be equivalent to or greater than the levels reported by Vealey's (1986) elite athletes (see Table 2). Means and standard deviations are presented in Table 12.

With both pre- and post-game confidence levels significantly different, it was fundamental to take a closer look at probable causes. Further investigation examined the likelihood that player gender and school size would impinge on official's pre- and post-game confidence.

Table 12

State Sport-Confidence t Tests, Means and Standard Deviations

	High Ranked[a]		Low Ranked[b]			
Measure	M	SD	M	SD	t	probability
SSCI, Pre-game	106.74	8.45	100.81	9.81	2.87	$p < .01$
SSCI, Post-game	108.26	9.41	103.75	9.93	2.06	$p < .05$

[a] $n=42$. [b] $n=36$.

State Sport-Confidence by Player Gender - Boys' Games

The influence of player's gender on an official's state confidence could be substantial. T tests revealed that both before and after boys' games HROs were significantly more confident than LROs (see Table 13). These results appear based on HROs expressing more confidence than LROs despite both groups continuing to have confidence levels similiar to Vealey's (1986) elite athletes. A visual inspection of the means revealed that both groups post-game confidence showed a slight increase over pre-game confidence.

State Confidence by Player Gender - Girls' Games

Girls' games produced the opposite results from those found for boys' games. The pre- and post-game analyses found no significant differences between HROs and LROs (see Table 14). A visual comparison of the means indicated that both groups exhibited lower amounts of confidence prior to

Table 13

State Sport-Confidence t Tests, Means and Standard Deviations - Boys' Games

	High Ranked[a]		Low Ranked[b]			
Measure	M	SD	M	SD	t	probability
SSCI, Pre-game	107.45	8.52	102.28	8.22	2.10	$p < .05$
SSCI, Post-game	108.33	10.05	102.94	10.82	1.78	$p < .05$

[a] $n=33$. [b] $n=18$.

Table 14

State Sport-Confidence t Tests, Means and Standard Deviations - Girls' Games

	High Ranked[a]		Low Ranked[b]			
Measure	M	SD	M	SD	t	probability
SSCI, Pre-game	104.11	8.07	99.33	11.22	1.13	$p > .10$
SSCI, Post-game	108.00	7.04	104.56	9.19	0.98	$p > .10$

[a] $n=9$. [b] $n=18$.

girls' games than boys' games. Sustaining the trend found with boys' games, post-game confidence for both groups was greater than pre-game. Despite the lack of significance, HROs and LROs continued to display very high levels of confidence.

State Sport-Confidence by School Classification

In a further attempt to understand the initial differences in state confidence, t tests were used to assess the impact of school size on official's state confidence. Test results found significant differences on three of the six measurements. Significance was discovered just prior to 1A games and both before and after 2A games (see Table 15). Maintaining the trend found with player gender, significant differences appear to be the result of HROs being more confident than LROs. Both groups continued to express more confidence following games than before them. Interestingly, LROs signified their greatest levels of confidence prior to and after 3 and 4A games. This is the opposite reaction of the HROs who exhibited their highest levels of confidence before 1A games and experienced a decline in confidence as the size of the schools grew larger. Both groups, however, continued to emit very high confidence levels regardless of school size.

Post Hoc Comparisons by School Classifications

While some significance was found when the groups were examined by school size, the Scheffe´ method was administered as a post hoc comparison to determine if there were any statistical differences in the six pre-game

Table 15

State Sport-Confidence t Tests, Means and Standard Deviations - School Size

1A Games

	High Ranked[a]		Low Ranked[b]			
Measure	M	SD	M	SD	t	probability
SSCI, Pre-game	110.71	4.61	99.94	8.89	3.02	$p < .01$
SSCI, Post-game	110.29	4.81	104.33	9.40	1.58	$p > .05$

2A Games

	High Ranked[c]		Low Ranked[d]			
Measure	M	SD	M	SD	t	probability
SSCI, Pre-game	108.24	4.60	95.83	5.23	5.49	$p < .01$
SSCI, Post-game	110.12	6.19	96.17	9.91	4.05	$p < .01$

3 & 4A Games

	High Ranked[e]		Low Ranked[f]			
Measure	M	SD	M	SD	t	probability
SSCI, Pre-game	103.00	11.08	104.45	7.67	-0.38	$p > .10$
SSCI, Post-game	108.18	7.19	105.91	9.64	0.71	$p > .10$

[a] $n=7$. [b] $n=18$. [c] $n=17$. [d] $n=6$. [e] $n=17$. [f] $n=11$.

means and six post-game means. The comparison of HROs and LROs extreme high and low pre-game means found no significant differences. This lack of statistical evidence was indicated by the contrasting F-ratio, F (5, 70) = 2.72, $p > .05$ (Glass & Hopkins, 1984).

A comparison of six post-game means found the same lack of significance. The comparison of the extreme high and low means revealed a contrasting F-ratio of, F (5,70) = 2.49, $p > .05$.

Summary of Sport-Confidence

Tests to compare differences in confidence between high and low rated officials resulted in some statistical significance. Trait sport-confidence, which indicated each groups' general feeling of confidence regarding their officiating ability, revealed that HROs were significantly more confident than lower rated officials. This result confirmed the hypothesis that HROs would be more confident. This significance disappeared in the evaluation of baseline confidence although both groups reported baseline confidence to be greater than trait confidence.

The hypothesis which suggested that HROs would express greater levels of state confidence was also confirmed. Test results on pre- and post-game confidence found group differences to be significant. These results are supported by a larger number of subjects in both groups. A visual check of the means found HROs and LROs both reported slight increases in confidence over their trait and baseline levels. The trend of significant findings was

interrupted when the games were broken down by player gender. Significant differences were found in boys' games but not in girls' games. These results led to an examination of the data by school size. Test results found significant differences in pre-game confidence for 1A games and both pre- and post-game confidence for 2A games. Post hoc comparisons found no significant differences in the six pre-game and six post-game means.

Despite the significant results, both the HROs and LROs confidence levels were as high or higher than those expressed by Vealey's (1986) elite athletes. Both groups of officials were consistently more confident after games than before, and higher rated officials experienced a decline in confidence as the schools got larger while the LROs did not.

The lack of subjects not only prohibited any further breakdown of the data, but also hindered the validity of those tests that were done using player gender and school size. While most tests were conducted with a small and unequal number of subjects, a similiar ratio of subjects in individual tests does account for some consistency throughout the analyses.

ANXIETY

While the study of sport-confidence resulted in some statistical significance, it was apparent that each official's level of confidence was constantly fluctuating. This vacillation can be traced to numerous elements. Among these factors are sex of the players, size of the schools, crowd size,

ability level of the official, officiating experience, as well as familarity with the environment. However, in spite of these obvious influences, nothing may be more relevant to an official's confidence than how well he is able to cope with his own level of anxiety. In an effort to assess these emotions and their potential impact, the SCAT and CSAI-2 were administered to each subject. The SCAT was used as the trait measure and the CSAI-2 served as the baseline and pre- and post-game inventory. T tests were used in the evaluation of these tests as well as the Scheffe´ method for post hoc comparisons.

Trait and Baseline Anxiety

The hypothesis concerning trait anxiety advanced the idea that high ability officials would generally be less anxious about officiating than LROs. Analysis found this hypothesis to be false as t tests reported no significant differences between groups. A closer visual look at the means confirmed that even though both groups were lower in trait anxiety than Martens (1977) normative samples (see Table 3), HROs had a slightly lower combined trait anxiety score than LROs. Means and standard deviations are presented in Table 16.

Just as there was no hypothesis regarding baseline confidence, there was no proposed theory for baseline anxiety. However, analyses of the three CSAI-2 subscales found no differences in baseline cognitive or somatic anxiety but did find a statistical difference in the vaiable self-confidence.

This significance is a reflection of a large variance in confidence within the LROs as well as HROs reporting a greater quantity of confidence (see Table 16). Both groups of officials appeared to experience anxiety levels equal to, or less than, those experienced by the normative samples (see Table 4). Group means were in closer proximity to those subjects participating in team sports rather than those in individual sports (Martens et al., 1983).

Table 16

Trait and Baseline Anxiety t Tests, Means and Standard Deviations

TRAIT ANXIETY

	High Ranked[a]		Low Ranked[b]			
Measure	M	SD	M	SD	t	probability
SCAT	16.00	4.28	17.09	5.01	0.58	p > .05

BASELINE ANXIETY

	High Ranked[c]		Low Ranked[d]			
Measure	M	SD	M	SD	t	probability
cognitive	13.50	5.27	13.23	5.18	-0.35	p > .05
somatic	12.86	3.57	12.54	5.49	-0.47	p > .05
confidence	31.93	4.32	28.62	9.36	2.93	p < .01

[a] n=14. [b] n=11. [c] n=14. [d] n=13.

State Anxiety

The hypothesis regarding state anxiety proposed that HROs would be less susceptible to pre- and post-game anxiety than LROs. Analyses of pre- and post-game means found two variables that varied significantly, specifically, pre-game cognitive anxiety and pre-game self-confidence (see Table 17). There were no differences in post-game anxiety. These results confirmed the hypothesis for pre-game anxiety but not for post-game anxiety. The larger number of subjects in both groups helped to validate the findings. Group means found both HROs and LROs to be relatively low in anxiety. Also, both pre- and post-game somatic anxiety was lower than cognitive anxiety.

Table 17

State Anxiety t Tests, Means and Standard Deviations

		High Ranked[a]		Low Ranked[b]			
Measure		M	SD	M	SD	t	probability
Pre	cognitive	13.05	4.56	14.70	3.52	1.78	$p < .05$
	somatic	12.62	4.37	11.70	2.25	-1.15	$p > .10$
	confidence	31.48	4.28	29.84	4.36	1.69	$p < .05$
Post	cognitive	12.36	4.05	12.68	3.98	0.35	$p > .10$
	somatic	11.17	3.68	11.56	3.12	0.50	$p > .10$
	confidence	32.05	3.86	31.03	4.30	1.11	$p > .10$

[a] $n=42$. [b] $n=37$.

Both groups continued to express anxiety levels equivalent to their baseline means and the means of Martens et al. (1983) normative samples. Because of the pre-game significance it became necessary to examine the possible effects of player gender and school size on state anxiety.

State Anxiety by Player Gender - Boys' Games

T tests used in the examination of pre- and post-game anxiety in boys' games revealed no significant differences between the two groups on any of the anxiety variables (see Table 18). Both groups reported levels of anxiety and confidence that were equivalent to both the normative samples and their group state anxiety scores although lower ability officials reported slightly more cognitive anxiety than their baseline measurement.

Table 18

State Anxiety t Tests, Means and Standard Deviations for Boys' Games

		High Ranked[a]		Low Ranked[b]			
Measure		M	SD	M	SD	t	probability
Pre	cognitive	12.88	4.51	14.61	4.13	1.35	p > .05
	somatic	12.48	3.89	13.39	2.30	0.91	p > .10
	confidence	31.91	3.73	30.67	4.91	1.02	p > .05
Post	cognitive	12.67	4.16	12.94	3.92	0.23	p > .10
	somatic	11.61	4.01	11.61	3.52	0.01	p > .10
	confidence	31.97	4.14	30.11	4.86	1.46	p > .05

[a] n=33. [b] n=18.

State Anxiety by Player Gender - Girls' Games

Girls' games continued to follow the same innocuous pattern as boys' games with one exception, there was a significant difference found in post-game somatic anxiety (see Table 19). This appeared to be a consequence of the HROs feeling virtually no post-game anxiety whatsoever. Continuing the trend found in boys' games, both groups appeared to be influenced less by somatic anxiety than cognitive. Both groups of officials reported equivalent or lower levels of anxiety than the normative samples.

Table 19

State Anxiety t Tests, Means and Standard Deviations for Girls' Games

		High Ranked[a]		Low Ranked[b]			
Measure		M	SD	M	SD	t	probability
Pre	cognitive	13.67	4.97	14.78	3.02	0.72	$p > .10$
	somatic	13.11	6.07	12.06	2.26	-0.66	$p > .10$
	confidence	29.89	5.90	29.11	3.82	0.42	$p > .10$
Post	cognitive	11.22	3.60	12.33	4.37	0.66	$p > .10$
	somatic	9.56	1.13	11.39	2.85	1.84	$p < .05$
	confidence	32.33	2.78	32.06	3.64	0.20	$p > .10$

[a] $n=9$. [b] $n=18$.

State Anxiety by School Classification

Despite the few statistical differences in state anxiety between HROs

and LROs, school classification was explored to determine what impact, if any, school size had on anxiety. Analyses uncovered statistical significance on only two variables, cognitive anxiety prior to 1A games and somatic anxiety after 2A games. These differences, in both cases, appeared to be the result of the high ability officials feeling less anxious than low ability officials (see Table 20).

Generally, although not in all cases, HROs expressed more pre-game anxiety and less confidence as the schools got larger. These feelings were accompanied by favorable decreases in anxiety following games in almost all cases regardless of school size.

Lower ability officials established no distinguishable pattern of increases or decreases in cognitive or somatic anxiety as school size grew larger although their highest level of pre-game anxiety was found prior to 1A games. Before 1A games was the only time when cognitive anxiety was much higher than their baseline level. In addition, LROs pre-game confidence steadily grew as the schools got larger.

Generally both groups expressed anxiety levels lower than those found for persons involved in individual sports and equal to or lower than the team sports normative sample (see Table 4). Means and standard deviations are presented in Table 20.

Post Hoc Comparisons by School Classifications

Very little statistical significance was found when the groups were

Table 20

State Anxiety t Tests, Means and Standard Deviations by School Size

1A Games

		High Ranked[a]		Low Ranked[b]			
Measure		M	SD	M	SD	t	probability
Pre	cognitive	11.71	3.55	15.67	4.30	2.16	p < .05
	somatic	12.57	4.24	11.94	2.29	-0.48	p > .10
	confidence	31.43	2.94	28.78	4.80	1.36	p > .05
Post	cognitive	11.86	3.48	13.00	4.35	0.17	p > .10
	somatic	12.29	4.07	11.17	2.90	-0.92	p > .10
	confidence	31.57	3.05	30.50	3.94	0.64	p > .10

2A Games

		High Ranked[c]		Low Ranked[d]			
Measure		M	SD	M	SD	t	probability
Pre	cognitive	12.29	3.72	13.50	2.74	0.73	p > .10
	somatic	12.47	4.56	11.00	1.79	-0.76	p > .10
	confidence	32.08	4.67	29.83	5.19	0.98	p > .10
Post	cognitive	11.29	3.27	11.83	2.48	0.37	p > .10
	somatic	9.76	1.44	11.33	2.88	1.75	p < .05
	confidence	32.59	3.37	30.17	3.49	1.50	p > .05

3 & 4A Games

		High Ranked[e]		Low Ranked[f]			
Measure		M	SD	M	SD	t	probability
Pre	cognitive	14.59	5.46	13.91	2.43	-0.39	p > .10
	somatic	13.00	4.51	11.64	2.66	-0.90	p > .10
	confidence	31.29	4.36	31.55	3.11	-0.17	p > .10
Post	cognitive	13.00	4.23	12.64	4.54	-0.21	p > .10
	somatic	11.24	3.15	12.36	3.85	0.84	p > .10
	confidence	32.71	2.08	32.09	5.38	0.43	p > .10

[a] $n=7$. [b] $n=18$. [c] $n=17$. [d] $n=6$. [e] $n=17$. [f] $n=11$.

compared using school size. To secure a more thorough and powerful comparison, the Scheffe´ method of multiple comparison was administered as a post hoc test to determine if there were any statistical differences between the six pre- and six post-game means regardless of class.

The comparison of HROs and LROs extreme high and low pre-game cognitive anxiety means found no significant differences. This was determined by the contrasting F-ratio, F (5,70) = 2.04, $p > .05$. Differences in the extreme pre-game somatic anxiety means were also not significant as indicated by the contrasting F-ratio, F (5,70) = 1.13, $p > .05$. Confidence continued the pattern of non-significance by revealing an F-ratio of, F (5,70) = 2.11, $p > .05$.

Post-game cognitive anxiety was also not significant. This was exhibited by the F-ratio, F (5, 70) = 1.24, $p > .05$. Differences in post-game somatic anxiety were also not significant, F (5, 70) = 2.15, $p > .05$, as was post-game self-confidence, F (5, 70) = 1.42, $p > .05$.

Anxiety Summary

Distinguishing levels of trait, baseline, and state anxiety between high and low ability officials resulted in few statistical differences. Trait anxiety, which was measured by the SCAT and indicated each groups' general feelings of anxiety regarding their officiating ability, found no statistical significance. This finding was contrary to the hypothesis which proposed

that HROs would be significantly less anxious than LROs. Both groups registered lower amounts of anxiety than the normative samples. Baseline anxiety was significanct on the CSAI-2 subscale self-confidence. Cognitive anxiety was slightly lower than somatic anxiety in all measurable cases and was equal to or slightly lower than the normative samples.

The state anxiety hypothesis suggested that HROs would express less state anxiety than LROs. The data offered conflicting results as it was generally shown to be true for pre-game measurements and false for post-game measurements. Test results found significant differences on the pre-game CSAI-2 subscales cognitive anxiety and self-confidence and no significance on the post-game variables. The cognitive anxiety significance may be related to HROs feeling less anxiety prior to games than after and LROs generally feeling more anxious than HROs. Despite the significance found in self-confidence, the value of the pre-game confidence means was actually closer together than their baseline means. In general, both groups experienced less anxiety than Martens et al. (1983) normative samples and reported anxiety levels equivalent to those found in athletes invloved in team sports.

The pre-game significance disappeared when the groups were broken down by player gender. Boys' games uncovered no statistical differences whatsoever, while group means continued to be equal to those found for participants in team sports. Girls' games found only post-game somatic

anxiety to be significant. This difference may be a result of the HROs feeling virtually no post-game somatic anxiety.

An examination of the data by school size continued to find no substantial differences between groups. Only 1A, pre-game, cognitive anxiety and 2A, post-game, somatic anxiety were significant. High ability officials reported more pre-game anxiety as schools got larger while LROs did not. LROs highest levels of anxiety were prior to 1A games. Both groups expressed less somatic anxiety than cognitive and were usually less anxious after games than before. Post hoc comparisons found no significant differences in the six pre-game means and the six post-game means.

The lack of subjects not only prohibited any further breakdown of the data, but also hindered the validity of those tests that were done. However, while a small number of subjects appeared in both groups, a similiar ratio of subjects in the individual tests does account for a moderate level of consistency throughout the analyses.

CHAPTER 5

DISCUSSION, CONCLUSIONS, RECOMMENDATIONS and IMPLICATIONS

Discussion

Results of the analyses revealed statistically significant differences in trait and state sport-confidence and pre-game state anxiety between high and low ability high school basketball officials. While these findings served as the basis of this study, it was equally important to indicate that individual levels of anxiety and confidence were constantly fluctuating. Individual perceptions of anxiety and confidence seemed to be transformed with each new game depending on the circumstances (Suinn, 1980). The sources behind these changes are no doubt numerous and probably vary from official to official. These alterations may be a reflection of each official's perceived competence and his/her ability to handle upcoming situations. This study anticipated that those officials who had learned to cope with their anxieties and sudden losses in confidence would be perceived as the better officials. Moreover, it was expected that elite officials had encountered large fluctuations in anxiety and confidence, but through years of experience had learned coping strategies that enabled them to handle any situation. The four proposed hypotheses followed these lines of reasoning.

Trait and Baseline Sport-Confidence

The first hypothesis suggested that high ability officials would experience greater levels of trait sport-confidence than low ability officials. This premise was derived from the idea that better officials would have a wider range of successful experiences and would therefore feel more confident about their officiating (Suinn, 1980). Statistically, this hypothesis was confirmed. A visual comparison of the means between trait, baseline, and state sport-confidence revealed that HROs trait confidence represented a relatively consistent view of their confidence while LROs trait confidence symbolized their lowest level of confidence of any time during the study. Group means revealed that both HROs and LROs had trait confidence levels equivalent to Vealey's (1986) elite athlete sample.

The statistical difference found in trait sport-confidence was the by-product of HROs feeling significantly more confident than LROs. While this analysis offered a singular conclusion, the sources behind these results were no doubt numerous. One explanation proposed that LROs viewed their comparison mates as more confident because they saw them receiving the most coveted assignments, being selected to officiate tournaments, providing direction to new officials as well as providing leadership to local, state and/or national associations. Another reason may stem from the HROs having more officiating experience. Having been involved with officiating

longer, HROs may have been exposed to more difficult situations and developed a more confident attitude about officiating and their ability to handle potential problems.

Despite there being no hypothesis regarding baseline sport-confidence, analysis of the basal data disclosed no statistical significance between the groups. Group means showed increased confidence over trait levels as well as group confidence levels being drawn closer together. This lack of significance and sudden increase in LROs confidence is difficult to explain considering both instruments were completed at approximately the same time. With all data being collected during the season, and all of the subjects officiating three or four days a week, it was difficult for each official to have a two day time period available to complete the Trait Sport-Confidence Inventory. With such compact scheduling, in many instances, the baseline data was collected no more than one day after the trait data. This result is interesting and established a trend that generally both high ability and low ability officials expressed slight increases in confidence as game time got closer.

State Sport-Confidence

The second hypothesis suggested that high ability officials would possess greater levels of state sport-confidence than low ability officials. Analyses found HROs expressing more confidence than LROs and enough

statistical evidence to support this hypothesis for both pre- and post-game confidence. Both groups' post-game confidence were found to be slightly higher than pre-game and the confidence levels of both groups were equivalent to Vealey's (1986) elite athletes.

In assessing the differences in state-confidence, player gender proved to have a significant impact. Even though no hypothesis was formulated concerning the possible effect of player gender on confidence, it was anticipated that injecting gender into the analyses would localize the results and uncover some statistical significance. Results achieved the desired effect as group confidence levels were found to be statistically different in boys' games. This significance was anticipated because of the potential influence of perceived pressures that are often associated with boys' games. Because HROs had more varsity officiating experience they would be better equipped to deal with larger and more vocal crowds as well as the criticism that comes from them. Their experience would allow them to be more relaxed and confident about their games regardless of the perceived pressures. Even though these results were expected, a visual examination of the means uncovered an unexpected finding, HROs and LROs were less confident prior to girls' games than before boys' games. Reasons for this may stem from the classification of the schools, officiating partners, prior games involving the participating schools, or perhaps a

previous poor performance. In any event, additional analyses were required to uncover reasons why girls' games would promote less confidence than boys' games. HROs post-game confidence was found to be fairly consistent despite player gender while LROs were slightly more confident after girls' games than boys' games. HROs consistent confidence levels may have been the result of a series of uneventful games or the development of a routine attitude about officiating. Lower ability officials may have expressed more confidence because they considered girls' games routine, they felt they had officiated very well, they found their games easier to officiate than boys' games, or they were developing an inflated opinion about their ability.

An underlying cause of these unexpected levels and fluctuations in confidence may be school size. It was anticipated that school size would significantly impact confidence as schools grew larger and that confidence would generally decrease as school size increased. Results varied significantly prior to 1A games and before and after 2A games. In each case the significance resulted from HROs expressing more confidence than LROs. These substantial differences were not suprising, but the location of the significance was. It was anticipated that HROs and LROs would report less confidence in games involving larger schools. However, HROs were found to be consistently less confident as school size grew whereas LROs were more confident in games with larger schools than smaller schools. LROs high level

of confidence in 3 &4A games was difficult to explain but may be due to an unrealistic opinion of their ability. They may have believed that they are better than they actually are because they had been assigned to work larger schools.

It was anticipated that because the trait confidence data would be gathered in a relaxed non-basketball environment it would reveal trait confidence to be greater than state confidence. Lower levels of state confidence would result from the officials feeling slightly less confident as game time approached. The analyses confirmed the hypotheses but the group means did not follow the anticipated pattern. A tenable explanation may lie within the testing instrument. Knowing that the officials were required to make their comparisons with the most confident official they knew, the LROs may have made their trait comparisons imagining someone under circumstances LROs had rarely experienced (boy's 3 and 4A games). Lack of knowledge about these circumstances may have led to a reduction in confidence. On the other hand, when it came time for the LROs to complete the state measures, they either found themselves in an environment that was familiar to them or they were working with a partner whom they trusted to take charge of difficult situations, thus boosting their confidence.

The trait and state sport-confidence results revealed that both HROs and LROs were more confident than Vealey's normative adult sample and very

close to the confidence levels of elite athletes. Discovering officials' confidence levels equal to elite athletes was not anticipated. Top caliber athletes must work many years to refine the skills necessary to compete at an elite level. Countless hours of practice and innumerable games have resulted in enough success to breed high levels of confidence. In many ways officials may follow a similiar path. Unlike high school basketball teams that may play 20 to 25 games a season, officials in this study may work as many as 50 to 60 games a year. By making countless appearances in a competitive environment and having experienced enough intrinsic success to continue officiating, officials may begin to take on many of the same psychological characteristics as elite athletes. This abundance of confidence was unexpected but may be a reflection of the determination and persistence required to cope with the pressures associated with officiating.

Trait and State Anxiety

The third hypothesis suggested that the high ability officials would endure less trait anxiety than lower rated officials. Unlike trait confidence, the trait anxiety data revealed no statistical significance. Both groups of officials experienced less trait anxiety than the normative adult sample.

Baseline anxiety revealed significance only on the CSAI-2 variable self-confidence (this does not correspond with the lack of significance found in baseline sport-confidence). Cognitive and somatic anxiety mirrored the

non-significance of trait anxiety. These results would indicate that unlike sport-confidence, reports of anxiety did not deviate as game time drew closer.

The final hypothesis proposed that high rated officials would report less state anxiety than LROs. Statistical analyses found this hypothesis generally to be true for pre-game anxiety and false for post-game anxiety. The pre-game significance may be attributable to HROs expressing less anxiety and more confidence than LROs. This trend was maintained following games despite the lack of significance. Both groups reported relatively low amounts of cognitive anxiety and high levels of confidence when compared to the normative sample. The largest discrepency between officials and the normative data occurred in somatic anxiety. Both groups of officials indicated far less somatic anxiety, both pre- and post-game, than the normative sample.

Following the pattern of analyses used for sport-confidence, player gender was examined to determine its' potential influence on anxiety, to localize the results, and to pinpoint areas of significance. The analyses resulted in an unexpected development as the earlier pre-game significance disappeared. Only post-game somatic anxiety experienced during girls' games was now significantly different. Lower ranked officials reported consistent anxiety levels regardless of player gender.

It was further anticipated that school size would have a significant impact on anxiety and that both groups would experience less anxiety in games with smaller schools. Results found very little statistical evidence to support this. Analyses found statistical significance only in 1A, pre-game cognitive anxiety and 2A, post-game somatic anxiety. In each case the results were based on HROs being less anxious than LROs. High ability officials appeared to become more anxious as school size increased while LROs displayed consistent levels of anxiety and no discernible pattern despite school size. This consistency in LROs anxiety is difficult to explain. Unlike HROs, LROs may experience an unwarranted ease concerning their games. Having been selected to work larger schools with possibly a high ranked partner, they may have reported a suppressed and unrealistic view of their anxiety.

Differences in trait, baseline and state anxiety were generally confined to the CSAI-2 variable self-confidence. Both groups of officials reported anxiety levels equivalent to the normative sample. This result was not unexpected after considering each official's high self-ranking and high level of confidence. Results would have appeared contradictory if the officials were extremely confident and highly anxious at the same time. Logic would propose that those officials who were continuously subjected to detrimental amounts of trait and/or state anxiety would probably not be officials very

long. Research indicates that officiating can be a very stressful activity (Conti & McClintock, 1983; Taylor & Daniel, 1987) and a strong overdose of anxiety would in all likelihood lead most officials to resign. Fenz and Epstein (1967) suggested that the lack of significance could be due to actual feelings of anxiety being supressed. In other words, anxiety does not disappear with experience, it is just inhibited better. Aresu, Bucarelli and Marongiu (1979) followed the same reasoning by suggesting that referees attempt to reduce anxiety by denying that it exists. Lower rated officials may be working many of their games with HROs and are unwilling to admit outwardly, or to themselves, their true feelings. While it is possible that they are not feeling anxious, it is more likely that they are attempting to supress their true feelings in an attempt to not to worry themselves or their partner.

Player Gender and School Classification

To more accurately assess the impact player gender and school size may have had on confidence and anxiety, it would have been beneficial to combine the two variables within the analyses. Unfortunately, because of the small number of subjects and the uneven distribution of games, the results would have been meaningless. Frequencies clearly show the discrepancies in the data. High ability officials worked more boys' games in larger schools than smaller schools (see Table 21). Chi-square analysis found this difference to

be significant, χ^2 (2, N = 41) = 6.48, p < .05. However, these results are hampered by a lack of subjects in each cell so the results should be viewed with caution. Lower ability officials indicated they worked more games with smaller schools but, generally, there was an even distribution of games between the sexes and school class (see Table 22). Contrary to the high ability officials, chi-square analyses uncovered no statistical differences with LROs between player gender and school size, χ^2 (2, N = 35) = 0.066, p > .10. Again, because of a lack of subjects in each cell these results should be viewed with caution.

Rankings

The individual rankings and the position where each subject rated him/herself may offer the most valuable lesson of the study. Of the 31 subjects who took part in the ratings, 28 rated themselves higher than, or equal to, their rating by the group. These high self-rankings suggest a great deal of self-confidence and that the majority of officials in this study may have an inflated and/or unrealistic view of their abilities. While these perceptions may be accurate, both HROs and LROs may have reported more confidence than they actually have. They may have become accustomed to expressing themselves in a confident manner to avoid being questioned (Rainey, Larson & Williard, 1987). Large quantities of perceived self-confidence may be required for someone to remain an official, however

Table 21

High Ability Officials - Boys' and Girls' Games Officiated in Each Class

Classification	Boys' Games[a]	Girls' Games[b]
1A	6	1
2A	10	7
3 & 4A	16	1

Note. Missing data regarding school classification and/or player gender resulted in a fewer number of boys' games than the 33 that were previously reported.

[a]n=32. [b]n=9.

Table 22

Low Ability Officials - Boys' and Girls' Games Officiated in Each Class

Classification	Boys' Games[a]	Girls' Games[b]
1A	9	9
2A	3	3
3 & 4A	5	6

Note. Missing data regarding school classification and/or player gender resulted in a fewer number of boys' games than the 18 that were previously reported.

[a]n=17. [b]n=18.

this large dosage of confidence may also prove detrimental. If one's enhanced perception of ability is reflective of self-confidence, then an individual's propensity for improving may be negated. If the official feels he/she is already one of the best they may not take the necessary steps to improve their skills. The tendency may be to focus on the skills they do well leading to an overestimation of their abilities (Bandura & Schunk, 1981).

TSCI and SSCI

In assessing differences in confidence between high ability and low ability officials, Vealey's (1986) trait and state sport-confidence inventories may have unintentionally biased the data and diminished the value of the results. Both the TSCI and SSCI required each subject to equate their own level of confidence to the most confident official they know. This type of unstructured comparison forces a question fundamental to this study; with whom did the officials compare themselves? Did they compare themselves with someone in the local association? Did they compare themselves with someone they knew personally, an official they saw on television, or someone they had only heard about? Did they compare themselves with another basketball official or with an official from a different sport? In attempting to supply answers to these questions the possibility exists that the majority of subjects may have made their comparisons with someone they were familiar with and who may have

belonged to the local association. If these assumptions are accurate, it is also likely that individual comparisons were made with the official they ranked number one. This led to the polling of the individual ratings to detect which officials received number one rankings (see Table 23).

Table 23

Subjects Ranked Number One by High and Low Ability Officials

ID number of subject receiving number one ranking	Frequency of number one ranking	Overall group ranking
High Ranked Officials[a]		
#32	8	1
#25	2	2
#44	2	4
#36	1	5
#18	1	6
Low Ranked Officials[b]		
#32	7	1
#44	1	4
#34	1	8
#31	1	10
#21	1	17

Note. Only 11 of 13 subjects in the lower ranked group participated in the ratings.

[a] $n=14$. [b] $n=11$.

The inquiry found that eight different subjects received a number one ranking. Fifteen of the 25 high and low rated officials (60%) rated subject #32 as the best. All of the officials who received a number one ranking were high ability officials. These findings encouraged the notion that at least 15 subjects may have compared themselves to the same person. Further examination of the overall group rankings (see Table 5) revealed that only four LROs ranked themselves high enough to be in the uppermost group while all of the HROs rated themselves one of the best.

With the TSCI and SSCI asking for comparisons to the most confident official they know, lower scores for the LROs were not unexpected. Lower scores were a natural result of HROs making comparisons to officials within their group while LROs made comparisons between groups. Despite this flaw, and the fact that the individual group rankings (Table 5) revealed possible inflated and/or unrealistic views of their ability, it could indicate that the LRO's simply realized that they are not as competent or confident as their higher rated counterparts.

Officiating Experience

Years of officiating experience, despite it's obvious value and statistical significance, is a variable that can not be easily measured. Experience is more abstract than counting the number of years or games officiated. It is conceivable that the better officials had received more

adequate instruction, learned more from their games by being better prepared mentally and physically, conducted better pre-game conferences, better post-game evaluations and worked with higher quality partners. If officials falsely believe they were better than they really are, the tendency could be not to take full advantage of their experiences. They may transfer their responsibilities on to someone else or attribute their failures to outside influences. If officials refuse to accept his/her shortcomings or fails to learn from his/her encounters, then their experience will be minimized.

Coaches, Players, Spectators and Daily Stress

Many other variables may prove to have a significant impact on pre-game confidence and anxiety. These variables may include attitudes officials generate about their partner, coaches, teams, past experience in a particular environment, and the amount of non-basketball related stress the day of the game. An official may encounter increased confidence and lower anxiety when working with an excellent partner and decreased confidence and higher anxiety when working with a weaker partner. Anticipating a coach being considerate or hysterical, a crowd being friendly or frenzied, or inadequately recovering from a stressful workday may cause fluctuations in anxiety and confidence. These impressions can be difficult to overcome and unknowingly skew test results.

Data Collection

While state anxiety and confidence measurements supplied meaningful information, it was possible that much of the post-game anxiety data may have been misleading. Sanderson and Ashton (1981) proposed that post-game anxieties may persist for some time and it is not known how long it takes for state anxiety to dissipate. The persistence of post-game anxiety was often associated with an unexpected outcome. Officiating, on the other hand, has no outcome, unexpected or otherwise. An official's own evaluation of his/her judgement, mechanics, and effort are often used to determine if an official's efforts were successful. Unlike athletes who often find it difficult to cope with unexpected outcomes, even under the most stressful game conditions, when the game is finished the officials are free to relax. Decreased feelings of state anxiety may stem from relief that the ordeal is over (Sanderson & Ashton, 1981). Once they are inside the locker room officials can vent their frustrations and/or get a verbal boost in confidence from a complimentary partner. It is also a time when an official can compare his/her anxiety and confidence with his/her colleague. The discovery of mutual opinions could result in a false presentation of their feelings and allow them to think that their emotions are normal. A wiser course may have been to have the officials recall their feelings during the final moments of the game. This would provide the subjects with a different

reference point as well as eliminate the relaxation/confidence building factor. The most accurate measure, although impractical, would have been for the data to be gathered during the game. This would result in a more precise measure and direct knowledge of the events leading to lapses or increases in anxiety and confidence.

Conclusions

Within the limitations of this study, trait and state sport-confidence were found to vary significantly between high and low ability officials. These results were based on high ability officials reporting greater levels of confidence than low ability officials. Confidence levels for both groups were equivalent to elite athletes.

Analyses of trait anxiety found no significant differences between groups and both groups were less anxious than the normative samples. Pre-game state anxiety was substantially different on the CSAI-2 subscales of cognitive anxiety and self-confidence. These results were based on HROs being less anxious than LROs. Post-game state anxiety was not statistically significant on any variables. Both HROs and LROs reported anxiety levels equal to those found in athletes involved in team sports.

Group means revealed that both groups of officials experienced continuous fluctuations in confidence and anxiety, apparently depending on

the game situation. High confidence levels were not unexpected because through the group rankings both high and low ability officials expressed high perceived ability, even though their perceptions may not have been accurate. The study was hindered by an inadequate number of subjects, particularly when the analyses included player gender and school size. Group state confidence levels were significantly influenced by player gender and school size while there was little evidence to suggest that state anxiety was influenced by player gender and school size.

Recommendations for Future Study

The development of more precise measuring instruments is critical before there can be accurate research into confidence. Vealey's (1986) attempt at developing the TSCI and SSCI to assess confidence in a sport setting should be commended. However, the inventories would be more appropriate if they were sport and situation specific. Vealey attempted to evaluate both trait and state confidence, but without the inventories being situationally specific the results from both instruments take on a trait flavor. More accurate assessments would result if Vealey's sport oriented inventories were combined with Bandura's (1977) theory of self-efficacy. Future research needs to take better advantage of the theory that past performance accomplishments, vicarious experiences, verbal persuasion, and

physiological states influence efficacy expectations. Bandura's suggestion that self-efficacy is situationally specific needs be expanded. For the most accurate assessments of confidence, Vealey's method of comparing someone's confidence to the most confident person they know should be replaced by questioning subjects directly about their pre-game expectations for performing in critical situations. How confident are they about making the crucial block/charge call late in a close game, about calling traveling, inside post-play, goaltending, or dealing with coaches and spectators? Post-game evaluations should request information about current levels of confidence as well as recalling the events that created changes in confidence. By developing an awareness of the specific situations responsible for increases or decreases in confidence and anxiety, officials can anticipate these situations and prepare the appropriate strategy.

To gain better insight into the psychological characteristics of officials, research should be conducted with those who drop out of officiating, those who referee college sports, and those who officiate professional sports. Results would help in understanding the qualitites that make good sports officials and serve as the foundation for officials' training programs.

Implications

The implications arising from this study are numerous. It was obvious that all of the officials in this study were very confident about their ability. However, the group and self-rankings demonstrated that these officials may have overestimated their ability. Because of these false perceptions and the possibility that these impressions may be common outside the study sample, most officials should be advised to progress slowly and be required to take advantage of the opportunities available to them for continued training. All officials, regardless of their stature, should periodically consider attending officiating camps, review videotapes of their past performances, join a local association, watch other officials work, and conduct extensive and honest pre- and post-game evaluations. It may be necessary to begin training officials in the psychological skills needed to deal with anxiety, tension, and sudden losses of confidence. Relaxation training may help officials recognize when they are feeling anxious, help them deal with the constant fluctuations in anxiety, and provide them with the necessary psychological tools to combat it. Lost confidence may be regained by reviewing positive experiences with game tapes or mental imagery, having a fellow official critique a performance, talking with other officials about unusual situations, or anticipating events before they occur.

Albeit, this study leaves many unanswered questions, it begins to take

a closer look at officiating. The time has come for the ideas and theories in sports psychology to be applied to sports officials. With the outcome of athletic competitions taking on increased importance, improvements in officiating are necessary.. More help should be given to the officials who, despite all the outside influences, pressures, and constant scrunity, must remain calm and confident to insure that each team is given an equal opportunity to win.

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APPENDICES

APPENDIX A

LETTER TO SUBJECTS

APPENDIX A

Dear Referee,

It has been quite a while since I have seen most of you and I hope this letter finds you with a full schedule of games.

During the past couple of years I have been pursuing a Master's degree in sport psychology at Michigan State University. Part of the requirements to complete the program are to plan, implement and analyze a research project. With my interest in basketball officiating, it seemed to be an appropriate place for me to conduct a study. I am writing you this letter to ask if you would assist me in this project.

As you well know, basketball officials can be subjected to a tremendous amount of harassment. It may be possible that this abuse can cause an increase in stress as well as having a negative impact on an official's confidence, both of which may be detrimental to performance. With this idea in mind, I have begun work on my project.

As a former member of CSBOA, I know that the association and its members are dedicated to improving the quality of basketball officiating. As a current member of CSBOA, I know that you too are interested in finding out more about what may affect an official's performance.

You have been selected because your varsity experience allows you to meet the necessary requirements for participating in the study. I would greatly appreciate your assistance and support although you are under no obligation to participate. However, without your cooperation the study has little chance of obtaining a valid result.

Your role in the study would consist of filling out questionnaires at various times which would include just prior to and after three different games. Each questionnaire should require about 5 to 10 minutes to complete. It would require you to attend a meeting of about 30-40 minutes so I can distribute the materials, further explain the study and answer any questions you may have. I would like to stress to you that total confidentiality will be kept in this study. No one within the association will ever see or know about your responses except on a group basis.

Thank you for taking the time to read this letter and giving your participation some thought. If you are unable to attend one of the meetings listed below, I will contact you considering your participation following the Sunday meeting. Hope to see you soon.

Sincerely,

Todd D. Schultz

APPENDIX B

TRAIT SPORT-CONFIDENCE INVENTORY (TSCI) AND SCORING PROCEDURES

APPENDIX B

TRAIT SPORT-CONFIDENCE INVENTORY

Think about how self-confident you are when you compete in sport. Answer the questions below based on how you generally feel when you officiate your sport. Compare your self-confidence to the most self-confident sports official you know. Please answer as you really feel, not how you would like to feel. Your answers will be kept completely confidential.

When you officiate, how confident do you generally feel? (circle one)

1. Compare your confidence in YOUR ABILITY TO EXECUTE THE SKILLS NECESSARY TO BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

2. Compare your confidence in YOUR ABILITY TO MAKE CRITICAL DECISIONS DURING COMPETITION to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

3. Compare your confidence in YOUR ABILITY TO PERFORM UNDER PRESSURE to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

4. Compare your confidence in YOUR ABILITY TO EXECUTE SUCCESSFUL STRATEGY to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

5. Compare your confidence in YOUR ABILITY TO CONCENTRATE WELL ENOUGH TO BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

6. Compare your confidence in YOUR ABILITY TO ADAPT TO DIFFERENT GAME SITUATIONS AND STILL BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

7. Compare your confidence in YOUR ABILITY TO ACHIEVE YOUR OFFICIATING GOALS to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

8. Compare your confidence in YOUR ABILITY TO BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

9. Compare your confidence in YOUR ABILITY TO CONSISTENTLY BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

10. Compare your confidence in YOUR ABILITY TO THINK AND RESPOND SUCCESSFULLY DURING COMPETITION to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

11. Compare your confidence in YOUR ABILITY TO MEET THE CHALLENGE OF COMPETITION to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

12. Compare your confidence in YOUR ABILITY TO BE SUCCESSFUL EVEN WHEN THE ODDS ARE AGAINST YOU to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

13. Compare your confidence in YOUR ABILITY TO BOUNCE BACK FROM PERFORMING POORLY AND BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

TSCI Scoring Procedures

The TSCI is scored on a 9-point Likert scale. Responses range from: 1 = low confidence to 9 = high confidence. The TSCI score is obtained by summing the 13 responses.

APPENDIX C

STATE SPORT-CONFIDENCE INVENTORY (SSCI) AND SCORING PROCEDURES

APPENDIX C

STATE SPORT-CONFIDENCE INVENTORY

Think about how confident you feel right now about officiating successfully in the upcoming competition. Compare your self-confidence to the most self-confident sports official you know. Please answer as you really feel, not how you would like to feel. Your answers will be kept completely confidential.

How confident are you right now about officiating in the upcoming contest? (circle number)

1. Compare the confidence you feel right now in YOUR ABILITY TO EXECUTE THE SKILLS NECESSARY TO BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

2. Compare the confidence you feel right now in YOUR ABILITY TO MAKE CRITICAL DECISIONS DURING COMPETITION to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

3. Compare the confidence you feel right now in YOUR ABILITY TO PERFORM UNDER PRESSURE to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

4. Compare the confidence you feel right now in YOUR ABILITY TO EXECUTE SUCCESSFUL STRATEGY to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

5. Compare the confidence you feel right now in YOUR ABILITY TO CONCENTRATE WELL ENOUGH TO BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

6. Compare the confidence you feel right now in YOUR ABILITY TO ADAPT TO DIFFERENT COMPETITIVE SITUATIONS AND STILL BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

7. Compare the confidence you feel right now in YOUR ABILITY TO ACHIEVE YOUR COMPETITIVE GOALS to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

8. Compare the confidence you feel right now in YOUR ABILITY TO BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

9. Compare the confidence you feel right now in YOUR ABILITY TO THINK AND RESPOND SUCCESSFULLY DURING COMPETITION to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

10. Compare the confidence you feel right now in YOUR ABILITY TO MEET THE CHALLENGE OF COMPETITION to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

11. Compare the confidence you feel right now in YOUR ABILITY TO BE SUCCESSFUL BASED ON YOUR PREPARATION FOR THIS EVENT to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

12. Compare the confidence you feel right now in YOUR ABILITY TO PERFORM CONSISTENTLY ENOUGH TO BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

13. Compare the confidence you feel right now in YOUR ABILITY TO BOUNCE BACK FROM PERFORMING POORLY AND BE SUCCESSFUL to the most confident official you know.

Low				Medium				High
1	2	3	4	5	6	7	8	9

SSCI Scoring Procedures

The SSCI is scored on a 9-point Likert scale. Responses range from: 1 = low confidence to 9 = high confidence. The SSCI score is obtained by summing the 13 responses.

APPENDIX D

SPORT COMPETITION ANXIETY TEST (SCAT) AND SCORING PROCEDURES

APPENDIX D

SPORT COMPETITION ANXIETY TEST (SCAT)

Below are some statements about how persons feel when they officiate in sports. Read each statement and decide if you HARDLY EVER, SOMETIMES, or OFTEN feel this way when you officiate basketball. There are no right or wrong answers. Do not spend to much time on any one statement. Remember to choose the word that describes how you usually feel when officiating basketball.

		hardly ever	sometimes	often
1.	Officiating with others is socially enjoyable.	1	2	3
2.	Before I officiate I feel uneasy.	1	2	3
3.	Before I officiate I worry about not performing well.	1	2	3
4.	I am a good sportsman when I officiate.	1	2	3
5.	When I officiate I worry about making mistakes.	1	2	3
6.	Before I officiate I am calm.	1	2	3
7.	Setting a goal is important when officiating.	1	2	3
8.	Before I officiate I get a queasy feeling in my stomach.	1	2	3
9.	Just before officiating I notice my heart beats faster than usual.	1	2	3
10.	I like to officiate in games that demand considerable physical energy.	1	2	3
11.	Before I officiate I feel relaxed.	1	2	3
12.	Before I officiate I am nervous.	1	2	3
13.	Team sports are more exciting than individual sports.	1	2	3
14.	I get nervous waiting to start the game.	1	2	3

15. Before I officiate I usually get uptight. 1 2 3

SCAT Scoring Procedures

All SCAT itmes are scored 1= Hardly Ever; 2 = Sometimes; 3 = Often. An overall SCAT score is computed by omitting items 1,4,7,10, and 13, reverse scoring items 6 and 11 and summing the item scores.

APPENDIX E

COMPETITIVE STATE ANXIETY INVENTORY - 2 (CSAI-2) AND SCORING PROCEDURES

APPENDIX E

COMPETITIVE STATE ANXIETY INVENTORY - 2

A number of statements which officials have used to describe their feelings before officiating are given below. Read each statement and circle the appropriate number to the right of the statement to indicate how you feel right now- at this moment. There are no right or wrong answers. Do not spend too much time on any one statement, but choose the answer which describes your feelings right now.

		not at all	somewhat	moderately so	very much so
1.	I am concerned about this game	1	2	3	4
2.	I feel nervous	1	2	3	4
3.	I feel at ease	1	2	3	4
4.	I have self-doubts	1	2	3	4
5.	I feel jittery	1	2	3	4
6.	I feel comfortable	1	2	3	4
7.	I am concerned that I may not do as well in this game as I could	1	2	3	4
8.	My body feel tense	1	2	3	4
9.	I feel self-confident	1	2	3	4
10.	I am concerned about losing	1	2	3	4
11.	I feel tense in my stomach	1	2	3	4
12.	I feel secure	1	2	3	4
13.	I am concerned about choking under pressure	1	2	3	4
14.	My body feels relaxed	1	2	3	4
15.	I'm confident I can meet the challenge	1	2	3	4
16.	I'm concerned about performing poorly	1	2	3	4
17.	My heart is racing	1	2	3	4
18.	I'm confident about performing well	1	2	3	4
19.	I'm worried about reaching my goal	1	2	3	4
20.	I feel my stomach sinking	1	2	3	4

21. I feel mentally relaxed ..... 1 ..... 2 ..... 3 ..... 4 ....

22. I'm concerned others will be disappointed in my performance ..... 1 ..... 2 ..... 3 ..... 4 ....

23. My hands are clammy ..... 1 ..... 2 ..... 3 ..... 4 ....

24. I'm confident because I mentally picture myself reaching my goal ..... 1 ..... 2 ..... 3 ..... 4 ....

25. I'm concerned I won't be able to concentrate ..... 1 ..... 2 ..... 3 ..... 4 ....

26. My body feels tight ..... 1 ..... 2 ..... 3 ..... 4 ....

27. I'm confident of coming through under pressure ..... 1 ..... 2 ..... 3 ..... 4 ....

CSAI-2 Scoring Instructions

Items 1, 4, 7, 10, 13, 16, 19, 22 and 25 are included in the "cognitive" anxiety subscale. Itmes 2, 5, 8, 11, 14, 17, 20, 23, and 26 are included in the "somatic" anxiety subscale. Items 3, 6, 9, 12, 15, 18, 21, 24 and 27 are contained "confidence" subscale. Only item 14 (somatic subscale) is reverse scored. The score of each subscale is obtained by summing the items.

APPENDIX F

INSTRUCTION SHEET

APPENDIX F

INSTRUCTION SHEET

When completing the questionnaires, it is essential that you not communicate your responses to anyone. Please answer the questions in reference to how you really feel and not how you think you are supposed to feel. There are no right or wrong answers. All your responses will be kept completely confidential.

Consent Form **Demographic** **SCAT** **Trait sport-confidence** **Rating Sheet**	These five are to be completed at the meeting site. The SCAT and Trait sport-confidence are asking how you usually feel in regards to the items listed below. When all five forms are completed, please return them to the investigator. If you are unable to complete them at the meeting, complete them at your convenience, put them back in the packet and return them after completing all other forms.
State sport-confidence **CSAI-2**	These are to be completed a minimum of 24 hour prior to a game. After completing, insert them along with your Game 1 packet, into an envelope and mail to _____ .
Individual game packets*	Each game packet contains five forms. The first two are labeled BEFORE and are to be completed not more than 30 minutes prior to the game. The last three are labeled AFTER and are to be completed not more than 30 minutes after the game. After completing the forms, insert the game packet into one of the business envelopes and mail to _____ . You will repeat this procedure for three games.
Labeled: Game 1 Game 2 Game 3 **	

* Each individual game packet contains the same questionnaires. Although it may become reduntant answering the same questions, it is necessary to assess each individual under different circumstances.

** Following the completion of the third game, please make sure all the forms are completed and return them to _____ . He is going to collect them and return them all at the same time. Thank you for your help.

APPENDIX G

DEMOGRAPHIC QUESTIONNAIRE

APPENDIX G

DEMOGRAPHIC QUESTIONNAIRE

ID# _____
Date _____

1) Age: _____

2) Occupation: _____

3) Highest Education Degree:

_____ Less than high school
_____ High school
_____ Jr. College
_____ College (4 year)
_____ Master's
_____ Doctorate
_____ Other _____

4) Years of basketball officiating experience (including this year): _____

5) Years of officiating high school varsity basketball (including this year): _____

6) Have you ever officiated any level of college basketball? _____
(Jr. College, JV, Varsity, Women)

7) Did you ever participate in high school sports? yes _____ no _____

If yes, what sports _____
_____
_____
_____

8) Did you ever participate in college sports? yes _____ no _____

If yes, what sports _____
_____
_____
_____

9) On an average, how many times do you tell yourself to relax during a game. _____

10) On an average, how many times do you mentally replay games or situations you have encountered? _____

APPENDIX H

POST-GAME SUMMARY

APPENDIX H

POST-GAME SUMMARY

ID# _____
Date _____
Time _____

1) This game involved: boys ____ girls ____

2) Home team _____ Score _____

   Visiting team _____ Score _____

   Overtime _____

3) Technical fouls:

   Number on home team coach _____

   Number on visiting team coach _____

4) How difficult was this game to officiate?

1	2	3	4	5
very easy	easy	moderate	difficult	very difficult

5) How well do you think you officiated this game?

1	2	3	4	5
very poor	poor	OK	good	very good

6) Prior to the game, how would you rate the amount of stress you experienced today.

1	2	3	4	5
none	a little bit	moderate	very stressful	extremely stressful

APPENDIX I

INFORMED CONSENT FORM

APPENDIX I

INFORMED CONSENT FORM

Michigan State University

School of

Health Education, Counseling Psychology and Human Performance

Investigator: Todd D. Schultz

I, _____, hereby agree to participate as a volunteer in a study examining the effects of confidence and anxiety on basketball officials as an authorized part of a master's study at Michigan State University under the supervision of Dr. Martha Ewing.

The study and my part in the study has been defined and fully explained to me and I understand this explanation. I have been given an opportunity to ask questions and inquiries have been answered to my satisifaction. I understand that my participation in this study does not guarantee any beneficial results to me. I understand that any data or answers to questions will remain confidential with regard to my identity. Within these restrictions, results of the study will be made available to me at my request. I further understand that I am free to withdraw my consent and discontinue my participation at any time.

_____ _____

Date Subject's Signature

APPENDIX J

DATA DICTIONARY / RAW DATA

APPENDIX J

DATA DICTIONARY / RAW DATA

CARD	COLUMN	VARIABLE	CODE
1	1-2	Subject ID	01-55
	3-4	Subject Age	Age in years
	5-6	Occupation	
	7	Highest Education Degree	1 Less than high school 2 High school 3 Jr. College 4 College (4 yr.) 5 Master's 6 Doctorate 7 Other
	8-9	Basketball Officiating Experience	01-99
	10-11	Varsity Officiating Experience	01-99
	12	Ever officiated college basketball	1 yes 2 no
	13	Ever participate in high school sports	1 yes 2 no
	14-17	High school sports participated in	1 basketball 2 football 3 baseball/softball 4 track/cross country 5 tennis 6 volleyball 7 swimming

	18	Ever participate in college sports	1 yes 2 no
	19-22	College sports participated in	1 basketball 2 football 3 baseball/softball 4 track/cross country 5 tennis 6 volleyball 7 swimming
	23-24	Tell self to relax during game	01-99
	25-26	Mentally replay games	01-99
	27-41	SCAT	1 Hardly Ever 2 Sometimes 3 Often
	42-54	TSCI	1 Low 5 Medium 9 High
	55-67	SSCI (baseline)	1 Low 5 Medium 9 High
	68-80	CSAI-2 (baseline)	1 Not at all 2 Somewhat 3 Moderately so 4 Very much so
2	1-14	CSAI-2 (baseline)	1 Not at all 2 Somewhat 3 Moderately so 4 Very much so
3	15-80	Group Rankings	01-55

4	1-44	Group Rankings	01-55
5	1	Game number	1
	2	Pre-game	1
	3-29	CSAI-2 (pretest)	1 Not at all 2 Somewhat 3 Moderately so 4 Very much so
	30-42	SSCI (pretest)	1 Low 5 Medium 9 High
	43	Post-game	2
	44-70	CSAI-2 (posttest)	1 Not at all 2 Somewhat 3 Moderately so 4 Very much so
	71-80	SSCI (posttest)	1 Low 5 Medium 9 High
6	1-3	SSCI (posttest)	1 Low 5 Medium 9 High
	4	Player gender	1 boys 2 girls
	5	Classification of teams	1 1A 2 2A 3 3 & 4A
	6	Winning team	1 Home team 2 Visiting team
	7-8	Winning margin	01-99

	9	Technical fouls on home team	1-9
	10	Technical fouls on visiting team	1-9
	11	Difficulty of game to officiate	1 very easy 2 easy 3 moderate 4 difficult 5 very difficult
	12	How well did subject think they officiated	1 very poor 2 poor 3 OK 4 good 5 very good
	13	Level of stress prior to game	1 none 2 a little bit 3 moderate 4 very stressful 5 extremely stressful
7	1	Game number	2
	2-80	Same as Card 5	
8	1-13	Same as Card 6	
9	1	Game number	3
	2-80	Same as Card 5	
10	1-13	Same as Card 6	

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