

2007

## The role of religion in coping with competitive anxiety

James M. Bennett  
*University of Dayton*

Follow this and additional works at: [https://ecommons.udayton.edu/graduate\\_theses](https://ecommons.udayton.edu/graduate_theses)

---

### Recommended Citation

Bennett, James M., "The role of religion in coping with competitive anxiety" (2007). *Graduate Theses and Dissertations*. 1495.  
[https://ecommons.udayton.edu/graduate\\_theses/1495](https://ecommons.udayton.edu/graduate_theses/1495)

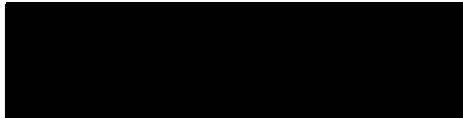
This Thesis is brought to you for free and open access by the Theses and Dissertations at eCommons. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of eCommons. For more information, please contact [mschlangen1@udayton.edu](mailto:mschlangen1@udayton.edu), [ecommons@udayton.edu](mailto:ecommons@udayton.edu).

APPROVED BY:



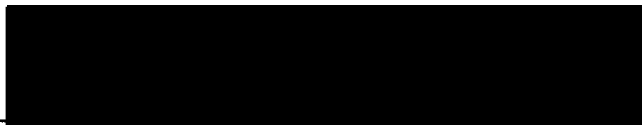
---

Rye, Mark Ph.D.  
Committee Advisor



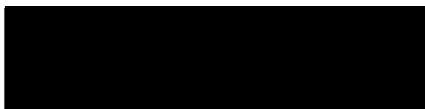
---

Beeb, Roger Ph.D.  
Committee Member



---

Kimble, Charles Ph.D.  
Committee Member



---

Biers, David Ph.D.  
Chair, Department of Psychology

## ABSTRACT

### THE ROLE OF RELIGION IN COPING WITH COMPETITIVE ANXIETY

Name: Bennett, James

University of Dayton, 2007

Advisor: Dr. Mark Rye

This study investigated the role of religion in coping with competitive anxiety. Specifically, it addressed the following questions: (1) To what extent do athletes use religious strategies to cope with competitive anxiety? (2) How do different religious coping strategies relate to competitive anxiety? (3) What combination of variables best predicts competitive anxiety? Participants ( $N = 142$ ) from a variety of intercollegiate sports programs at the University of Dayton completed a packet of questionnaires that assessed demographic and background information, religious and nonreligious coping strategies, and competitive anxiety. A majority of student athletes reported utilizing religious coping strategies when directly asked but only a small percentage spontaneously listed them in response to an open-ended question. Contrary to hypotheses, the Collaborative and Deferring styles were positively related to competitive anxiety. As expected, Self-Directing religious coping was negatively related to competitive anxiety. All three components of competitive anxiety were negatively related to confidence and positively related to nonreligious coping. Limitations and implications for clinicians are discussed.

## ACKNOWLEDGEMENTS

There are so many people that have contributed to help make this work possible. I first want to thank my advisor, Dr. Mark Rye, for his time, guidance, and support throughout this process. I also want to thank my committee members, Dr. Roger Reeb and Dr. Charles Kimble, for their expertise. The efforts of Julie Steinke and the athletic department at the University of Dayton also were vital in making this study a reality and are much appreciated. I also want to acknowledge the hard work by Will Soto and Amy Lyons in the research process. Finally, to my fiancé, family, and friends who have supported and encouraged me along the way, I am truly grateful. Without the assistance of all these amazing people in my life, none of this would be possible.

## TABLE OF CONTENTS

ABSTRACT .....	iii
ACKNOWLEDGEMENTS.....	iv
LIST OF TABLES .....	vi
I. INTRODUCTION.....	2
II. METHOD .....	25
III. RESULTS.....	36
IV. DISCUSSION .....	50
REFERENCES.....	58
APPENDICES	
A. Demographics/Background Information.....	73
B. Intrinsic Religious Motivation Scale .....	74
C. Sport Anxiety Scale (SAS) .....	75
D. Modified-COPE (MCOPE).....	77
E. Superstitious Beliefs Measure .....	80
F. Religious Problem-Solving Scale (RPS) .....	82
G. Additional Items .....	84
H. Cover Letter .....	86
I. Informed Consent .....	88
J. E-mail Reminder .....	90
K. Debriefing Form.....	91

## LIST OF TABLES

1. Demographic/Background Characteristics of Participants.....	26
2. Athletic Background Characteristics of Participants.....	27
3. Descriptive Statistics and Cronbach Alphas for Study Variables.....	37
4. Zero-Order Correlations Between Continuous Demographic/Background Variables and Competitive Anxiety Subscales .....	38
5. ANOVA Results for Categorical Demographic/Background Variables and Competitive Anxiety Subscales .....	40
6. Zero-Order Correlations Between Nonreligious and Religious Coping.....	41
7. Zero-Order Correlations Between Competitive Anxiety Subscales .....	43
8. Self-Reported Use of Religious Coping to Deal with Competitive Anxiety.....	45
9. Frequency of Open-Ended Competitive Anxiety Coping Strategies .....	46
10. Zero-Order Correlations Between Competitive Anxiety and Coping Scales .....	47
11. Stepwise Multiple Regression Analyses Predicting Competitive Anxiety Subscales .....	49

Persistent competitive anxiety (i.e., anxiety related to competitive sport) can have adverse consequences for athletes. For instance, competitive anxiety has been linked to psychological problems such as depression (Schofield, Dickson, Mummery, & Street, 2002), lower self-confidence (Koivula, Hassmen, & Fallby, 2002), perfectionism (Koivula, Hassmen, & Fallby, 2002), and substance abuse (Merikangas et al., 1998). Adverse physiological changes (Martens, Vealey, & Burton, 1990) and greater risk for injury (Hardy & Crace, 1993) also accompany competitive anxiety in athletes. For some athletes, competitive anxiety can negatively affect performance (Jones, 1995).

Given that competitive anxiety relates to a variety of problems for athletes, researchers have tried to identify effective coping strategies. Athletes report using a myriad of strategies to cope with competitive anxiety such as seeking social support (Campen & Roberts, 2001), performing set routines (Gould, Eklund, & Jackson, 1992), and employing mental imagery and relaxation techniques (Gould, Eklund, & Jackson, 1992).

One type of coping that has often been overlooked in the research is religious coping. Religion plays a significant role in the lives of athletes (e.g., Balague, 1999). Many professional and collegiate teams incorporate prayer into competition, and some players believe it to be more important than physical preparation (Czech, Wrisberg, Fisher, Thompson, & Hayes, 2004). Athletes also frequently express their religious beliefs in other ways, such as discussing the importance of religion in media interviews and performing particular religious rituals before, during, or after competition.

This study seeks to further scientific knowledge on the role of religion in coping with competitive anxiety. Specifically, this study will address the following questions:

- (1) To what extent do athletes use religious strategies to cope with competitive anxiety?  
 (2) How do different religious coping strategies relate to competitive anxiety? (3) What combination of variables best predicts competitive anxiety?

A review of the literature will be organized in the following manner. First, a general conceptualization of competitive anxiety will be provided. Second, the consequences of competitive anxiety will be explored. Third, factors that may contribute to competitive anxiety will be presented. Fourth, strategies for coping with competitive anxiety will be examined. Finally, the possible role of religion in coping with competitive anxiety will be addressed.

#### Definition of Competitive Anxiety

Competitive anxiety has been defined as "an individual's tendency to perceive competitive situations as threatening and to respond to these situations with state anxiety" (Martens et al., 1990, p. 11). Competitive anxiety involves both cognitive symptoms (e.g., worry, rumination) and somatic symptoms (e.g., increased autonomic arousal). Competitive anxiety can occur prior to, during, or after competition (Cratty, 1989). Sometimes the term competitive anxiety is erroneously used interchangeably with performance anxiety. Competitive anxiety is a type of performance anxiety that is prevalent in athletic competition. In contrast, performance anxiety can occur in a variety of other contexts (e.g., stage performance, public speaking).

Extreme cases of competitive anxiety may meet criteria for a diagnosis of Social Phobia. According to the Diagnostic and Statistical Manual of Mental Disorder, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000), Social Phobia involves "a marked and persistent fear of one or more social or performance



situations in which the person is exposed to unfamiliar people or to possible scrutiny by others" (p. 456). In Social Phobia, "avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine, occupational (academic) functioning, or social activities or relationships, or there is marked distress about having the phobia" (p. 456).

As with other forms of anxiety, competitive anxiety can be considered a trait or state. Trait anxiety persists across situations (Spielberger, 1972). As a relatively stable part of one's personality structure, trait anxiety is often undetectable until a stressor is presented (Cratty, 1989). For example, an athlete may generally appear to be calm and collected throughout competition, but high levels of trait anxiety may become evident under a pressure situation.

State anxiety, on the other hand, is situationally specific, usually occurring before and during competition (Martens et al., 1990). In other words, it is a temporary, short-term experience of distress in reaction to a certain stressor (Cratty, 1989). Some athletes have high levels of both trait and state competitive anxiety, whereas others experience only one type of competitive anxiety. Spielberger (1966) posited that individual differences in trait anxiety factor into an athlete's cognitive appraisal of a competitive situation. High levels of trait anxiety cause an athlete to perceive more situations as threatening, create more intense levels of state anxiety, or both.

#### Consequences of Competitive Anxiety

In his book on competitive anxiety, Rainer Martens (Martens et al., 1990) describes a high school wrestler he once coached named Jim, who exhibited great ability and superb knowledge of wrestling but performed below his capabilities. Martens

discovered that Jim struggled mightily to control his anxiety before every match. He would become withdrawn and appeared as if he were physically ill. During matches Jim was atypically passive, leading to mediocre performances that were far below his ability. Moreover, immediately after his matches, Jim would remain isolated from teammates and coaches. Martens et al. (1990) observed, "Jim was not enjoying himself due to this enormous competitive stress..." (p. 3). Ultimately, the competitive anxiety that Jim routinely experienced caused him to consider withdrawal from the sport. Only through lengthy conversations with Martens was he convinced to remain with the team, though his performance never matched his ability level.

This case example illustrates some of the ways in which competitive anxiety can adversely affect athletes. In particular, competitive anxiety can adversely affect an athlete's physical health, mental health, and level of performance.

#### *Physiological Consequences of Competitive Anxiety*

Competitive anxiety produces physiological changes that can interfere with an athlete's physical health. A useful model for understanding physiological responses to stressors is Selye's General Adaptation Syndrome (GAS; Selye, 1975). According to this model, the stressor is first detected by the body in the alarm stage. Although there are individual differences with respect to how competitive anxiety affects physiology in the alarm stage, there are several commonalities (Cratty, 1989). Arousal of the autonomic nervous system results in rapid heart rate, shortness of breath, clammy hands, and tense muscles (Martens et al., 1990; Morris, Davis, & Hutchings, 1981).

When the body is under stress, the Hypothalamic-Pituitary-Adrenal (HPA) Axis is activated (Taylor et. al, 2000). With prolonged stress, secretion of the adrenal hormone

cortisol increases blood sugar and metabolism, which sustains endurance during activity. However, immune system activity is decreased during this process (i.e., immunosuppression), in which white blood cell reactivity and proliferation is suppressed and tumor growth occurs at a more rapid pace.

Next, the body engages in defensive measures to counter the stressor during the resistance stage (Selye, 1975). Hormones allow the body to endure ongoing stressors, such as pain, fatigue, or injury, often for long periods of time. Finally, during the exhaustion stage, the body begins to run out of defenses and becomes more susceptible to illness (Selye, 1975). Consistent with Selye's exhaustion stage, the presence of prolonged competitive stress can lead to psychosomatic illness, such as ulcers (Cratty, 1989). Moreover, athletes may suffer from Effort Syndrome as a result of excessive anxiety. Effort Syndrome consists of fatigue, muscle soreness, and heavy breathing without any physical causes (Cratty, 1989).

Competitive anxiety poses an increased risk for injuries (Hardy & Crace, 1993). While injuries can happen to any athlete, it is important to note that athletes who do not train or attend well are at a much greater risk to suffer an injury. No formal survey of national sports injuries has been done, but there are estimates that approximately 10% of the 35-40 million annual emergency room visits are sport-related (American Sports Data Inc., 2004). Minor injuries not requiring hospital treatment are likely to be nearly five times as numerous.

Injuries can be frustrating to an athlete for several reasons. First, a competitive athlete has the desire to actively participate in competition, and injuries often preclude participation. Injured athletes may also feel a sense of letting down the team, as they

are not actively able to help their team succeed. Finally, the awareness of suffering injury may have negative psychological consequences. Athletes who actively think about the possibility of injury are more likely to become anxious during competition (Wilson & Eklund, 1998).

#### *Psychological Consequences of Competitive Anxiety*

Competitive anxiety is also associated with adverse psychological consequences. Studies in the general anxiety literature show anxiety is often accompanied by depression (e.g., Zimmerman, McDermut, & Mattia, 2000). One study specific to sport psychology assessed the relationship between anxiety, depression, and linking in ultra-endurance athletes (Schofield et al., 2002). Linking is defined as conditional goal-setting where the athlete feels the need to win in order to achieve happiness. The authors found that linking is positively correlated with competitive anxiety and depressive symptoms. In particular, they concluded that depression in athletes is likely to occur largely as a result of high levels of somatic anxiety.

Research also shows that there is comorbidity between anxiety and substance use in athletes, and the onset of anxiety typically precedes the substance use (Merikangas et al., 1998). Indeed, a number of studies indicate that college athletes drink more frequently and in larger quantities than non-athlete college students (e.g., Leichliter, Meilman, Presley, & Cashin, 1998). The stress and pressure from maintaining a balance between athletics and academics, as well as their elevated status on campuses, put student athletes at a greater risk (Watson, 2002).

### Competitive Anxiety and Performance

Competitive anxiety can have negative consequences on performance. One possible reason is that competitive anxiety makes it difficult for an athlete to concentrate. Not surprisingly, research has found that anxious rumination involving negative self-defeating thoughts (i.e., failure expectancies) is related to poor performance (Eklund, 1996; Rodrigo, Lusiardo, & Pereira, 1990). Poor performance due to competitive anxiety can have serious adverse consequences for the career prospects of professional and collegiate athletes.

However, not all athletes experience negative consequences as a result of competitive anxiety. Indeed, some athletes report that they welcome anxiety and are concerned if they are not anxious when entering competition (Cratty, 1989). Interestingly, elite athletes exhibit less anxiety over failure or outcome than other athletes (McGregor & Abrahamson, 2000). Elite athletes appear to employ more adaptive strategies for coping with anxiety (Gould, Eklund, & Jackson, 1992). This may also be true for athletes engaged in extreme sports, which involve a higher risk of injury.

Given that competitive anxiety can either impair or enhance performance, researchers have concluded that anxiety and performance may be related in a non-linear fashion. Initially, performance was thought to follow an inverted U-shaped pattern (Yerkes & Dodson, 1908; as cited in McNally, 2002). According to this hypothesis, optimal performance is achieved at moderate levels of anxiety. Moreover, performance is the poorest when arousal is too high or too low. However, various conceptual and methodological concerns led sport psychologists to question the validity of this model. For one, the model did not account for differences in performance among athletes

exposed to the same stressor (Humara, 1999). Based upon contemporary research, more complex models were developed to explain this interaction.

One such theory is the Catastrophe Model of Anxiety and Performance (Hardy & Fazey, 1987). This model posits that performance is affected by two interacting subcomponents of anxiety: cognitive and physiological. When cognitive anxiety is low, physiological arousal relates to performance in an inverted-U pattern (Fazey & Hardy, 1988). Alternatively, when high levels of cognitive anxiety are present, there is a negative, linear relationship between performance and physiological anxiety. Thus, cognitive and physiological anxiety appear to affect performance differently.

The Multidimensional Theory of Anxiety (Martens et al., 1990) has arguably become the most widely accepted theory in the sport psychology literature. Similar to the Catastrophe Theory, the Multidimensional Theory posits that the cognitive anxiety and performance operate in a negative linear relationship (Burton, 1988). The somatic component appears to operate in an inverted U-shaped relationship with performance, where optimal performance occurs at a moderate level of somatic anxiety. However, unlike the Catastrophe Model, the cognitive and somatic components of competitive anxiety are believed to function somewhat independently of one another (Burton, 1988; Heide & Borkovec, 1984; Humara, 1999; McNally, 2000). This theory adopts the position that cognitive state anxiety is likely to have a greater impact on performance than somatic state anxiety (Burton, 1988). Multidimensional Theory also takes into account the role of self-confidence. Self-confidence is a separate cognitive component that has been shown to have a positive linear relationship with performance (Koivula, Hassmen,

& Fallby, 2002; Martens et al., 1990). It is posited that self-confidence moderates the relationship between competitive anxiety and performance (Martens et al., 1990).

### Contributing Factors to Competitive Anxiety

Given that competitive anxiety can lead to a variety of problems for athletes, researchers have tried to identify factors that contribute to competitive anxiety. Research suggests that there are biological, psychological, and situational contributors. Each of these factors is briefly described below.

#### *Biological factors*

Twin and family history studies suggest there may be a genetic basis for anxiety (Crowe, Noyes, Pauls, & Sylmen, 1983, as cited in Schmidt et al., 2000; Torgerson, 1983). Genetics may influence anxiety through nervous system reactivity. Barlow (1988) argues that a "vulnerability" to develop anxiety is inherited through many genes (i.e., "polygenic"). Specifically, Eysenck (1967) posited that high levels of anxiety are associated with a more responsive sympathetic nervous system. Research has suggested that susceptibility to anxiety is based on reactivity of the behavioral inhibition system (BIS; e.g., McNaughton & Gray, 2000). The BIS is a complex set of neural networks within the septo-hippocampal system, a region comprised of the hippocampus and septal areas of the brain as well as their connections. This system is postulated to be central to anxiety regulation (Gray, 1982).

Anxiety also has been associated with several neurotransmitter systems (Charney et al., 1990). Gamma-aminobutyric acid (GABA) is an inhibitory neurotransmitter that is linked with anxiety (e.g., Bremner et al., 2000). Specifically, anxiety is associated with low levels of GABA. Schmidt and colleagues (2000) report

that converging lines of evidence support a strong connection between serotonin (5-HT) dysregulation and anxiety. Specifically, decreased levels of serotonin transmission are linked to increased symptoms of anxiety (Wise, Berger, & Stein, 1972). Moreover, low levels of norepinephrine have been linked to high levels of anxiety (Gray, 1982).

*Psychological/Cognitive factors*

Several psychological factors may contribute to competitive anxiety. For instance, Martens and colleagues (1990) emphasized the importance of cognitive appraisal of the competitive situation. They posit that competitive anxiety is related to perceived threats to self-esteem and expectations of success. Perception of a threat is a key antecedent of failure and feelings of inadequacy, external control and guilt, and social evaluation (Wilson & Eklund, 1998). If an athlete's perception of environmental demands does not match response capability, the athlete may feel threatened and competitive anxiety can result (Martens et al., 1990; Weinberg & Gould, 1995). This occurs when perceived environmental demands exceed perceived ability or, paradoxically, when the perception is that the environment does not demand enough to stimulate the athlete.

*Self appraisal.* An important type of self-appraisal which influences competitive anxiety is self-efficacy. Self-efficacy is the perception of one's own capabilities in performing a behavior to attain a desired outcome (Bandura, 1977). According to Bandura (1977), these perceptions are derived from four main sources: (1) enactive mastery experiences (past successes and failures in the situation); (2) vicarious experiences (past observations of how others cope in the situation); (3) verbal persuasion (influence of others); and (4) anticipatory arousal (emotional or



physiological). For this reason, less experienced athletes tend to suffer from more anxiety than those who are more experienced (Corcoran, 1989). Research also indicates that, as a result, perceived effectiveness is inversely related to anxiety during performance (Bandura, 1997).

As noted earlier, self-confidence also influences an athlete's expectations of success and subsequent experience of anxiety. Research has associated high levels of competitive anxiety with low levels of self-confidence (Koivula, Hassmén, & Fallby, 2002). Jones (1995) defines direction of competition-related cognitions as whether an athlete feels that the anxiety is facilitative or debilitating to his or her performance. Hanton, Mellalieu, and Hall (2003) found that athletes with lower levels of self-confidence viewed their anxiety as debilitating and outside of their control, whereas athletes with high levels of self-confidence reported facilitative interpretations and positive assessments of control.

*Expectations of success.* Athletes' expectations of success are hypothesized to be antecedents of cognitive anxiety (Martens et al., 1990). Athletes often place undue pressure upon themselves. Some athletes may feel that if they do not succeed to their fullest potential, then they are a failure. Indeed, self-presentational concerns can account for 62% of variance in competitive anxiety (Wilson & Eklund, 1998). Concerns may include performance or composure inadequacies, appearing fatigued or lacking energy, physical appearance, and appearing athletically untalented. Self-presentation has been found to have more of an effect on cognitive than somatic anxiety. A study by Koivula, Hassmén, and Fallby (2002) found that negative patterns of perfectionism were related to higher levels of cognitive anxiety and lower levels of self-confidence.

Individuals with low self-esteem and negative patterns of perfection are believed to possess a high need to succeed and strive to build their self-esteem through constant demands on themselves and needs from others (Forsman & Johnson, 1996; Johnson & Forsman, 1995).

Some athletes experience a fear of success (Cratty, 1989). That is, athletes may consciously or unconsciously hold back in their performance in order to avoid social consequences and responsibilities, such as the common dislike of the champion by peers. Little research has been done to address the specific issues in this paradoxical area.

*Fear of failure.* While some athletes may fear success, a fear of failure is much more common. A fear of failure may lead an athlete to use self-handicapping strategies. Self-handicapping refers to the proactive use of excuses and reduced effort prior to a socially evaluative event in order to protect and/or enhance self-esteem in the face of potential failure (Jones & Berglas, 1978). Athletes with a strong tendency to self-handicap reported higher levels of competitive anxiety prior to competition than those who used less self-handicapping (Prapavessis & Grove, 1994; Prapavessis, Grove, Maddison, & Zillmann, 2003). A two-part study by Rhodewalt, Saltzman, and Wittmer (1984) assessed individual differences in behavioral self-handicapping among competitive golfers and swimmers. The authors discovered that high self-handicapping individuals did not decrease their preparation for competition but also did not increase their preparation like low self-handicapping individuals.

Prapavessis et al. (2003) believe that self-esteem mediates the relationship between self-handicapping and competitive anxiety, as levels of self-esteem strongly

influence both constructs. However, an alternate explanation may be that athletes use competitive state anxiety as a self-handicapping strategy (Smith, Snyder, & Handelsman, 1982; Snyder, Smith, Augelli, & Ingram, 1985).

*Social and situational factors*

Sport lends itself to a great deal of social evaluation due its substantial visibility in the public domain (Jones, 1995; Wilson & Eklund, 1998). Many athletes experience tremendous pressure to win. Fans expect nothing short of winning even though most competitions only have one champion. In the case of professional sports, athletes may be run out of town if they do not perform and justify their progressively larger contracts. College athletes face similar scrutiny from external sources, particularly in high profile, upper-division universities. In addition to fan expectations, social pressures come from coaches, owners (i.e., employers), teammates, family and friends, media outlets, scouts, agents, and other athletes.

*Sport/Environmental characteristics.* Certain characteristics of a sport competition can make an athlete more prone to competitive anxiety. For example, athletes in individual competition have higher anxiety than those in team competition (Flowers & Brown, 2002; Simon & Martens, 1977). With team sports, responsibility for the outcome is shared by others, whereas an athlete in an individual sport has sole responsibility for the outcome. Furthermore, individuals in contact sports report more competitive anxiety than those in non-contact sports (Lowe & McGrath, 1971). Contact sports pose a greater risk for injury and, thus, an increased perception of threat. Athletes involved in sports with subjective scoring, such as diving and figure skating, experience higher levels of cognitive anxiety and lower levels of self-confidence than

athletes in sports with objective scoring (Hammermeister & Burton, 1995; Krane & Williams, 1987; Martens et al., 1990). Finally, the location of the event appears to be important, as one study showed that away games were associated with increased somatic anxiety and lower self-confidence (Thuot, Kavouras, & Kenefick, 1998).

*Gender differences.* Research has revealed gender differences in competitive anxiety. Females report higher overall levels of competitive anxiety than males at or above the high school level (Martens et al., 1990). Jones and Cale (1989) found temporal differences in male and female competitive anxiety patterns. Females experienced gradual increases in cognitive and somatic precompetitive anxiety as competition approached. Females also suffered a decrease in self-confidence during this time. In contrast, males experienced no changes in cognitive and somatic precompetitive anxiety until the day of competition, when only somatic anxiety increased. There was no decrease in self-confidence for males.

A study by Flowers and Brown (2002) showed a gender by sport context interaction. Males in individual sports scored higher on levels of cognitive anxiety than males in team competition. Females, on the other hand, reported higher levels of somatic anxiety in individual sports than those in team competition. These authors argue that gender differences may be explained by social desirability on self-report measures of competitive anxiety. That is, females may be more likely to report somatic symptoms, such as sweating, shakiness, shortness of breath, and increased heart rate, than males, who may try to conceal any gender role weakness.

### Coping with Competitive Anxiety

Coping is defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). Lazarus and Folkman (1984) have identified two basic approaches: emotion-focused coping and problem-focused coping. Emotion-focused coping refers to strategies used to regulate emotional arousal and distress without changing the stressful situation. For example, athletes may use humor, denial, or wishful thinking in response to a perceived poor call by an official (Giacobbi & Weinberg, 2000). In contrast, problem-focused coping consists of active cognitive and behavioral efforts to change the distressing problem (Lazarus & Folkman, 1984). Common problem-focused strategies used by athletes include changing equipment, studying film, increasing training regimens, and increasing effort during competition. A significant majority (75.8%) of athletes report using problem-focused strategies for coping (Gould, Finch, & Jackson, 1993).

There are a number of factors that seem to influence the way in which one deals with competitive anxiety. Personal characteristics, such as trait anxiety, seem to influence an athlete's use of a particular coping method (Carver, Scheier, & Weintraub, 1989). Trait anxiety is inversely related to active coping. Although anxious athletes report a greater number of overall coping strategies (Campen & Roberts, 2001), high trait anxious athletes utilize more maladaptive and emotion-focused coping strategies in stressful situations than low trait anxious athletes (Finch, 1994).

Gender also seems to influence an athlete's use of a particular coping method (Carver et al., 1989). In particular, females prefer the use of social coping strategies

(Anshel, Porter, & Quek, 1998; Astor-Dubin & Hammen, 1984; Campen & Roberts, 2001; Crocker & Graham, 1995), whereas males are more likely to cope by seeking feedback on their performance (Anshel et al., 1998). Anshel and colleagues (1998) also discovered that males tend to use more problem-focused coping strategies to deal with stressors, even those that are out of their control. Moreover, males have been linked to coping methods that attempt to enhance controllability of a stressful situation (Miller, 1989; Ptacek, Smith, & Dodge, 1994; Stone & Neale, 1984).

Assessing the type of coping used by an athlete is challenging because coping often involves multiple strategies that are employed simultaneously (Gould, Eklund, & Jackson, 1992; Gould, Finch, & Jackson, 1993). In addition, there is disagreement as to whether coping behaviors are stable over time. Some authors believe that individuals have preferred coping behaviors that remain stable across time and situation (e.g., Carver et al., 1989). However, others argue that coping is a dynamic process that constantly changes as a function of the person-environment relationship (e.g., Gould, Finch, & Jackson, 1993). The demands of the stressful situation, amount of time before competition, and level of competition are important in determining type of coping response implemented by athletes. Crocker and Isaak (1997) showed that coping responses are relatively stable during training sessions, with less consistency during competition. These researchers concluded that coping strategies were modified in response to the increased demands of competition.

A case study by Holt (2003) examined the coping strategies of an experienced cricket player. The player reported use of evaluation and planning (i.e., studying opponents and understanding conditions), proactive psychological skills (i.e., confidence

building and sustaining concentration), and reactive psychological skill (i.e., resilience and self-talk). The author specified that different situational appraisals appeared to be met by qualitatively different coping strategies: proactive problem-solving strategies seemed to be employed when a threat was perceived by the athlete, while reactive emotion-focused strategies seemed to be utilized following perceived harm or loss.

There are a plethora of coping strategies that are readily accessible for athletes and sport psychologists. Three commonly used techniques, relaxation, imagery, and rituals, are described below.

#### *Relaxation*

Relaxation techniques are used extensively by athletes to manage competitive anxiety. Fletcher and Hanton (2001) discovered that non-elite swimmers with high usage of relaxation strategies demonstrated lower intensity of competitive anxiety, more adaptive interpretations of their anxiety, and more self-confidence compared to athletes with low usage of relaxation strategies. However, Hardy et al. (1996) noted "whilst the findings have generally shown reductions in state anxiety, the findings related to performance have not always shown improvements" (p. 15).

#### *Imagery*

Athletes such as golfer Tiger Woods reportedly find imagery to be beneficial during competition (Vealey & Greenleaf, 1998). Imagery involves visualization of a successful outcome prior to the task. An example of imagery is a baseball player who closes his or her eyes and visualizes hitting a home run out of the park prior to approaching home plate. Similarly, a skier may close his or her eyes and visualize successfully completing every gate in record time before leaving the starting block.

Jones and colleagues (2002) found that motivational imagery decreased negative stress levels experienced by novice rock climbers during intense athletic activity.

### *Rituals*

Rituals are commonplace in athletes from all sports and across cultures (Womack, 1992). Some rituals are superstitious in nature. Superstitious rituals can be defined as "actions which are repetitive, formal, sequential, distinct from technical performance and which the athletes believe to be powerful in controlling luck or other external factors" (Bleak & Frederick, 1998, p. 2). Examples of superstitions among athletes range from abstention of sex prior to competition (Fischer, 1997) to rituals involving food, clothing, or other behaviors before, during, and after competition (Buhrmann, Brown, & Zaugg, 1982).

The use of superstition rituals appears to relate to athletes' sense of personal control. For instance, Van Raalte and colleagues (1991) assessed superstitious behavior in a laboratory-based golf putting task. They found that participants who reported an internal locus of control (i.e., a perceived ability to control events) were more likely to exhibit superstitious behavior during the task. These same authors contend that ego-involved athletes (i.e., those who tend to feel more anxiety) are more likely to use rituals as a way to reduce their anxiety. Similarly, a study of ice hockey players indicated that prevalence of sport superstitions increased with ego-involvement of the athletes (Neil, Anderson, & Sheppard, 1981).

Another type of ritual commonly employed by athletes, preperformance rituals, are learned, intentional behavioral and cognitive strategies designed to facilitate physical performance (Cohn, 1990). An example of a preperformance ritual is a basketball player



who dribbles the ball three times prior to shooting a free throw in order to relax or focus. Preperformance rituals differ from superstitions in a couple important ways (Bleak & Frederick, 1998). First, preperformance rituals are taught by an expert source, whereas superstitions are sometimes generated spontaneously at random. Second, while preperformance routines seek cognitive self-control and have a direct effect on performance outcomes, superstitions involve a wide range of behaviors that may lower anxiety levels but do not directly affect performance outcomes. Interestingly, the prevalence of superstitions among athletes does not correspond with ratings of perceived effectiveness in performance (Bleak & Frederick, 1998).

### Religious Coping

#### *Prevalence of religious coping in sport*

Religion is an important part of athletes' lives (e.g., Balague, 1999; Storch, Storch, Kolsky, & Silvestri, 2001). According to Czech and colleagues (2004), nearly every team in American professional sports holds Sunday worship services prior to games. Athletes express their religious beliefs in a myriad of ways, from addressing religion in media interviews to performing a particular spiritual ritual before, during, or after an athletic competition.

Religiosity tends to intensify during critical, stressful situations (Pargament, 2002). Athletes often rely upon religious coping strategies during slumps in performance and injuries, both of which are commonplace in the world of sports. Storch and colleagues (2001) assert that religion may serve a protective function against psychological distress and maladaptive behaviors (e.g., substance use). Despite these realities, there is a dearth of research on the role of religion in competitive anxiety.

Insight into this relationship can have important implications for understanding and treating competitive anxiety in athletes.

### *Prayer*

Individual and group prayer is a common occurrence before, during, and after athletic events. According to Coakley (2001), athletes use prayer to cope with ambiguous stressful situations, to seek assistance for living a moral life, to sanctify the commitment to sport, to put sport into perspective, to establish a strong bond with teammates, and to maintain social control (i.e., regulating individual and group behavior among athletes). In fact, one study found that athletes believe that prayer affects performance as much as physical preparation (Czech et al., 2004).

Czech and colleagues (2004) discovered that athletes use a variety of types of prayer, including performance prayers and thankfulness prayers. Performance prayers involve athletes' direct appeals to God to perform to the best of their ability. Athletes who use performance prayers believe that God has a direct role in the competition (Czech et al., 2004). Making an external attribution for outcome may help decrease one's sense of personal responsibility, thereby reducing anxiety.

Thankfulness is described as the athletes' appreciation toward God for abilities, performances, and opportunities (Czech et al., 2004). An example of thankfulness prayer comes from Kurt Warner, a professional football quarterback and devout Christian. Immediately following his Most Valuable Player performance in SuperBowl XXXIV, Warner answered a reporter's question about a play during the game by saying, "Well, first things first. I've got to thank my Lord and Savior up above. Thank you, Jesus!" (Eads Home Ministries, 2004).

### *Religious coping styles*

Research shows evidence for three distinct religious coping styles: deferring, self-directing, and collaborative (Pargament et al., 1988). These styles vary in locus of responsibility and level of activity in problem-solving.

An individual with a deferring religious coping style passively places responsibility for performance with a higher power. For instance, an athlete may not prepare or train for competition, instead assuming that the outcome is predetermined by a higher power. In a study by Pargament and colleagues (1988), one participant exemplified the deferring approach by saying, "I let God decide and waited for a sign from him about what I should do" (p. 91-92). The deferring approach is linked with decreased self-esteem, increased intolerance for differences and sense of control by chance, and poorer problem-solving strategies.

In self-directing religious coping, one is completely reliant on his or her own resources (Pargament et al., 1988). An athlete who enters an event feeling full control over the outcome best exemplifies this approach. Another participant in the Pargament et al. (1988) study stated, "God put me here on this earth and gave me the skills and strengths to solve problems myself" (p. 91). This approach is related to higher levels of self-esteem and a higher sense of competence. Although this style is associated with more negative outcomes of physical health (Pargament & Brant, 1998), mental health (e.g., Bickel et al., 1998; Pargament & Brant, 1998), and religion (Pargament & Brant, 1998), the self-directing style may be beneficial under specific controllable situations due to the problem-solving nature of the approach (Pargament et al., 1988).

The collaborative approach involves sharing responsibility with a higher power in order to deal with a stressful event (Pargament et al., 1988). One interviewee in the Pargament and colleagues (1988) study offered the following example: "God is my partner. He works with me and strengthens me" (p. 92). There is evidence that the collaborative coping style is associated with increased self-esteem, a greater sense of personal control, and more adaptive intrinsic (i.e., internally motivated) religiosity. Overall, it is considered the most adaptive style, particularly in uncontrollable situations (Pargament, 2002).

#### *Religious Rituals*

Athletes often engage in rituals that are religious in nature (Buhrmann & Zaugg, 1983). Some religious rituals involve performing an action that is symbolic of their religious commitment such as painting crosses on their footwear, shaving crosses in the back of their head, printing scripture verses on t-shirts, performing the sign of the cross before free throws, and kneeling in the end zone following a touchdown (Hoffman, 1992).

Prayer routines are among the most common religious rituals. These prayers are used in a ritualistic fashion and are seldom deviated from or changed (Czech et al., 2004). These routines are practiced before, during, and after performance. Womack (1992) reports that many athletes employ prayer as a preparatory ritual. Indeed, Bleak and Frederick (1998) found that athletes surveyed across three sports (football, gymnastics, and track) perceived prayer routines as the most effective ritual or superstition.

### Present Study

This study will address the following primary questions: (1) To what extent do athletes use religious strategies to cope with competitive anxiety? It is hypothesized that athletes utilize religious strategies extensively in coping with competitive anxiety. (2) How do different religious coping strategies relate to competitive anxiety? It is hypothesized that competitive anxiety will be negatively correlated with collaborative and self-deferring styles and unrelated to the deferring approach. (3) What combination of variables best predicts competitive anxiety? No *a priori* hypotheses were made.

## Method

### *Participants*

Participants were 142 student-athletes recruited from intercollegiate sports programs at the University of Dayton (see Table 1). Student-athletes were eligible to participate if they were on an athletic roster and at least 18 years of age at the time of the study. Out of the 319 questionnaires distributed, 143 were returned, a 45% response rate. One participant was eliminated due to incomplete data.

The sample was predominantly female (62%) and Caucasian (90.8%). Other races in the sample included African-American (5.7%), Latino(a) (2.1%), and "other" (1.4%). Ages of the participants ranged from 18 to 22 years old ( $M = 19.77$ ,  $SD = 1.22$ ). Participants reported their religious affiliation as Catholic (68.3%), Protestant (16.9%), or "other" (14.8%).

The participants were involved in various individual (29.6%) and team (70.4%) varsity sports (see Table 2). The most common sports for female participants included rowing (22.7%), soccer (17%), and softball (13.6%), whereas the most common sports for male participants included baseball (31.5%), golf (20.4%), and soccer (20.4%).

Participants reported that their athletic year was as follows: "red-shirt freshman" (students who are on the team but inactive to preserve an extra year of athletic eligibility) - 9.9%; first-year - 37.3%; sophomore - 23.2%, junior - 18.3%, senior - 11.3%). Years of experience in the sport ranged from 0 to 18 years ( $M = 10.16$ ,  $SD = 5.01$ ). Participants reported on the number of hours spent training during the season (range = 6 to 45,  $M = 18.36$ ,  $SD = 6.26$ ) and offseason (range = 0 to 40,  $M = 11.66$ ,  $SD = 5.64$ ).

Table 1

*Demographic/Background Characteristics of Participants*

Variable	<i>n</i>	(%)	Mean	SD
Age				
Range = 18 to 22			19.77	1.22
Gender				
Male	54	(38.0%)		
Female	88	(62.0%)		
Race				
African American	8	(5.7%)		
Caucasian	128	(90.8%)		
Latino/a	3	(2.1%)		
Other	2	(1.4%)		
Religion				
Catholic	97	(68.3%)		
Protestant	24	(16.9%)		
Other	21	(14.8%)		
Year in School				
First Year	61	(43.0%)		
Sophomore	34	(23.9%)		
Junior	25	(17.6%)		
Senior	20	(14.1%)		
Other	2	(1.4%)		
Intrinsic Religiousness			25.07	6.36

Table 2

*Athletic Background Characteristics of Participants*

	<i>Men</i>		<i>Women</i>		<i>Total</i>	
<i>Variable</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Athletic Year</i>						
Red-Shirt Freshman	11	(20.4%)	3	(3.4%)	14	(9.9%)
Freshman	13	(24.1%)	40	(45.5%)	53	(37.3%)
Sophomore	9	(16.7%)	24	(27.3%)	33	(23.2%)
Junior	12	(22.2%)	14	(15.9%)	26	(18.3%)
Senior	9	(16.7%)	7	(8.0%)	16	(11.3%)
<i>Name of Sport</i>						
Baseball/Softball	17	(31.5%)	12	(13.6%)	29	(20.4%)
Basketball	1	(1.9%)	5	(5.7%)	6	(4.2%)
Cross Country	6	(11.1%)	7	(8.0%)	3	(9.2%)
Football	8	(14.8%)			8	(5.6%)
Golf	11	(20.4%)			11	(7.7%)
Rowing	20	(22.7%)			20	(14.1%)
Soccer	11	(20.4%)	15	(17.0%)	26	(18.3%)
Tennis	9	(10.2%)			9	(6.3%)
Track and Field	9	(10.2%)			9	(6.3%)
Volleyball	11	(12.5%)			11	(7.7%)
<i>Type of Sport</i>						
Team	37	(68.5%)	63	(71.6%)	100	(70.4%)
Individual	17	(31.5%)	25	(28.4%)	42	(29.6%)
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
<i>Years Experience</i>						
Range = 0 to 18	11.89	4.51	9.10	5.03	10.16	5.01
<i>Offseason Training Hours</i>						
Range = 0 to 40	11.65	6.66	11.66	4.95	11.66	5.60
<i>Season Training Hours</i>						
Range = 0 to 48	18.51	6.11	18.25	6.39	18.36	6.26
Confidence	3.83	0.72	3.56	0.62	3.66	0.67



## *Measures*

Participants completed a packet of self-report questionnaires that assessed demographic and background information, religiosity, competitive anxiety, and coping strategies (i.e., religious and nonreligious). These measures are described below.

### *Demographic/Background Information*

Participants completed demographic questions pertaining to age, gender, race, religious affiliation, and year in school. Participants also completed background information regarding their athletic involvement, including year of athletic eligibility, type of sport, overall experience in the sport, amount of training for competition, and perceived controllability over performance outcome (Appendix A).

### *Religiosity*

*Intrinsic Religious Motivation Scale.* The Intrinsic Religious Motivation Scale (Hoge, 1972; Appendix B) was employed to assess intrinsic religiousness. This scale consists of 10 Likert-type items with response possibilities ranging from 1 (*Strongly agree*) to 4 (*Strongly disagree*). Sample items include, "My faith involves all of my life" and "Nothing is as important to me as serving God as best I know how."

Hoge and Carroll (1978) examined the internal consistency of the scale and found the Cronbach's alpha to be .84. Correlations between the Intrinsic Religious Motivation Scale and other measures of religiosity such as Allport and Ross (1967) and the Feagin (1964) intrinsic scales, range from .71 to .87. Furthermore, Benson et al. (1980) discovered that Hoge's scale was one of the best predictors of nonspontaneous helping. Scores can range from 10 to 40, with higher scores indicating greater intrinsic religiousness. In this study, Cronbach's alpha was .77.

### *Competitive Anxiety*

*Sport Anxiety Scale (SAS).* Levels of competitive trait anxiety were assessed using the Sport Anxiety Scale (Smith, Smoll, & Schutz, 1990; Appendix C). The SAS consists of 21 total items rated and scored on a 4-point Likert scale from 1 (*Not at all*) to 4 (*Very much so*). This test contains three subscales, including Somatic Anxiety (e.g., "my body feels tense"), Worry (e.g., "I have self doubts"), and Concentration Disruption (e.g., "My mind wanders during sport competition").

Smith and colleagues (1990) found test-retest reliability over an 18-day period to be .77 for the full scale, .71 for the Somatic Anxiety subscale, .71 for the Worry Scale, and .68 for the Concentration Disruption subscale. Wilson and Eklund (1998) found that the scales had adequate internal consistency (Somatic = .88, Worry = .89, Concentration = .76). Research reveals that the SAS is highly correlated (.81) with the SCAT (Smith et al., 1990). The Somatic Anxiety subscale had a 0.80 correlation with the SCAT, which is not surprising considering the SCAT is essentially a measure of somatic trait anxiety (Skelton, 2002). Similarly, the lower correlations of the Worry and Concentration Disruption subscales, 0.66 and 0.47, respectively, represent the SCAT's inattention to the cognitive anxiety component. Scores on the SAS range from 9 to 36 for the Somatic Anxiety subscale, 7 to 28 on the Worry (cognitive anxiety) subscale, and 5 to 20 on the Concentration Disruption (cognitive anxiety) subscale. Higher scores indicate greater levels of anxiety. In this study, Cronbach's alphas for the subscales were as follows: Somatic Anxiety - .92; Worry - .89; Concentration Disruption - .80.

### *Nonreligious Coping*

*Modified-COPE.* In order to assess nonreligious coping strategies in sport settings, this study employed the Modified-COPE scale (MCOPE; Crocker & Graham, 1995; Appendix D). This scale was adapted from the original COPE scale designed by Carver et al. (1989). The MCOPE consists of 48 total items in Likert format. Responses range from 1 (*Not used*) to 5 (*Used very much*).

The 12 subscales of the MCOPE include Seeking Social Support for Instrumental Reasons (e.g., "I asked my teammates what they did or would do"), Seeking Social Support for Emotional Reasons (e.g., "I talked to someone about how I felt"), Behavioral Disengagement (e.g., "I stopped trying to perform my best"), Self-Blame (e.g., "I blamed myself for the situation"), Planning (e.g., "I made a plan of action"), Suppression of Competing Activities (e.g., "I dealt only with my performance difficulties, even if I had to forget other things a little"), Venting of Emotions (e.g., "I got upset and let my feelings out"), Humor (e.g., "I made fun of my performance"), Denial (e.g., "I acted as though I was not having performance difficulties"), Effort (e.g., "I tried to increase the quality of my performance"), Wishful Thinking (e.g., "I had fantasies or wishes about how things might turn out"), and Active Coping (e.g., "I tried real hard to do something about my performance").

Two separate studies demonstrated the internal consistency of the MCOPE (Gaudreau et al., 2001; Gaudreau & Blondin, 2002). Exploratory (Ntoumanis et al., 1999) and confirmatory factor analyses (Eklund, Grove, & Heard, 1998) show reasonable support for the factor structure of the MCOPE. However, for purposes of this study, all of the subscales were combined to form a total non-religious coping score.

Scores can range from 48 to 240, with higher scores signifying a greater use of nonreligious coping strategies. In this study, Cronbach's alpha for the MCOPE was .88.

*Superstitious Beliefs Measure.* Athletes' use of rituals was measured using a modified version of the Superstitious Beliefs Measure (Bleak & Frederick, 1998; Appendix E). This scale assesses the amount of superstitious behavior, beliefs, and rituals practiced by athletes before or during competition. The scale examines several categories of superstitions including Clothing and Appearance (e.g., "Good luck markings on shoes"), Fetish (e.g., "Wearing lucky charm on game/meet days"), Pre-game/meet (e.g., "Music during warm-up"), Game/Meet (e.g., "Gum chewing"), Team Rituals (e.g., "Team cheer"), Prayer (e.g., "Pray for success before each game/meet"), and Coach (e.g., "Coach is superstitious"). Participants were instructed to mark each superstition that is used with an "x". On their original measure, Buhrmann, Brown, and Zaugg (1982) found a test-retest reliability coefficient of .95.

For this study, the religious superstitions and the nonreligious superstitions were added separately to form two subscale scores. Nonreligious superstition scores can range from 0 to 39, with higher scores indicating greater use of nonreligious superstitions. Religious superstition scores can range from 0 to 5, with higher scores indicating greater use of religious superstitions. In this study, Cronbach's alpha was .77 for nonreligious superstitions and .69 for religious superstitions.

### *Religious Coping*

*Religious Problem-Solving Scale (RPS).* The short form of the Religious Problem-Solving Scale (Pargament et al., 1988; Appendix F) was used to assess participants' use of religious coping strategies and explore the role that religion plays in

the problem-solving process. The scale consists of three subscales (6 items each) which pertain to the following religious coping style subscales: collaborative (e.g., "When I have a problem, I talk to God about it and together we decide what it means"), self-directing ("When faced with trouble, I deal with my feelings without God's help"), and deferring ("When a situation makes me anxious, I wait for God to take those feelings away"). Responses were scored on a 5-point Likert scale, ranging from 1 (*Never*) to 5 (*Always*).

The short form demonstrated high internal consistency, with Cronbach's alpha at .93 for collaborative, .91 for self-directing, and .87 for deferring (Pargament et al., 1988). As the authors hypothesized, the three styles were correlated with measures of religiousness and psychosocial competence (Pargament et al., 1988). The deferring subscale was related to high religious involvement and reliance on external rules. This subscale was negatively related to aspects of competence, such as personal control, self-esteem, and tolerance of ambiguity. The self-directing subscale was not associated with traditional religious beliefs and practices, but was positively associated with a quest orientation to religion. It also was associated with high levels of competence. The collaborative subscale was correlated with an intimate, internalized form of religion. There was also a positive link between this subscale and levels of competence.

A separate score for each subscale was calculated, yielding a possible range of 6 to 30 per subscale, with higher scores representing a greater use of that particular religious coping style. For the present study, Cronbach's Alpha was found to be .96 for the collaborative subscale, .93 for the self-directing subscale, and .89 for the deferring subscale.

### *Additional Items*

Participants were given four additional questions on constructs related to competitive anxiety (Appendix G). The first question asked the participants to list the three most common strategies that they have used to cope with competitive anxiety. After reporting each strategy, they indicated, on a 5-point Likert scale, the effectiveness 1 (*Not at all helpful*) to 5 (*Extremely helpful*) and frequency 1 (*Never*) to 5 (*Almost every competition*) of each strategy.

On the second question, participants were asked how frequently the participant draws upon religious or spiritual beliefs to deal with competitive anxiety. Possible responses ranged from 1 (*Never*) to 5 (*Almost always*).

The last two questions asked, "In general, how confident are you about your athletic abilities?" and "How frequently do you use relaxation strategies to cope with anxiety prior to or during athletic competition?" Both questions were rated on a 5-point Likert scale, with the former question ranging from 1 (*Not at all confident*) to 5 (*Extremely confident*), and the latter ranging from 1 (*Never*) to 5 (*Almost every competition*). Each question was scored individually.

### *Procedure*

The researcher coordinated data collection efforts with a University of Dayton athletic department staff member. Individuals were eligible for participation if they were 1) over the age of 18 and 2) currently a member of a varsity athletic roster at the university. The athletic department staff member discussed the project with coaches and distributed packets to athletes following team practices. To avoid order effects,

participants were randomly assigned to complete one of six versions of the questionnaires based on a Balanced Latin Square design.

The cover letter (Appendix H) and informed consent forms (Appendix I) noted that the study assessed anxiety during competition and use of coping strategies, such as religion. The letter also explained that participants' responses would remain confidential and would not be shared with their coaches or anyone else outside of the research team. Confidentiality was maintained by assigning each participant a code number. Names or other identifying information were not placed on the surveys. A list of names and code numbers were kept in a secure and separate location from the study surveys.

Furthermore, the cover letter noted that participation is voluntary. Participants were asked to return completed packets through campus mail within two weeks. An e-mail reminder (Appendix J) was sent to all athletes approximately one week after distribution. Contact information was provided to participants in the event they had questions.

Student athletes, particularly those whose sport is in season, have considerable demands on their time. Thus, in order to obtain an adequate sample size for purposes of analyses, incentives for returning completed packets were provided. Participants who were enrolled in Psychology 101 at the time of the study received one experimental credit. In addition, the athletic department credited participants who returned completed packets with one athletic study hour. Finally, teams with the highest return rate received a free pizza party. All incentives were approved by the athletic department compliance office.

Upon completion and return of the survey, participants were e-mailed a debriefing form (Appendix K) that explained the purpose of the study and provided resources for athletes who wished to learn more about coping with competitive anxiety.



## Results

The results section will be organized as follows. First, preliminary analyses will be presented. Means, standard deviations, and Cronbach alphas were computed for major study variables. Correlations and ANOVAs were computed to determine the relationship between demographic/background variables and competitive anxiety subscales. Additionally, correlations were computed between nonreligious coping measures (MCOPE, Nonreligious Superstitions, and Relaxation), between religious coping measures (Religious Superstitions, Collaborative, Deferring, Self-Directing), and between competitive anxiety measures (Somatic Anxiety, Worry, and Concentration Disruption).

Next, results from major study questions will be presented. First, frequencies were computed on a question assessing use of religious coping strategies. Responses to the open-ended question about ways participants cope with competitive anxiety were also examined. Then, correlations between religious coping strategies (Collaborative, Deferring, and Self-Directing) and competitive anxiety were computed. Finally, stepwise multiple regression analyses were computed to determine which combination of variables best predicts competitive anxiety.

### *Preliminary Analyses*

Means, standard deviations, and Cronbach alphas were computed for all predictor and outcome measures (see Table 3).

The relationships between continuous demographic/background variables and competitive anxiety were examined by computing correlations (see Table 4). Somatic Anxiety was negatively correlated with Years of Experience in sport ( $r = -.26, p < .01$ )

Table 3

*Descriptive Statistics and Cronbach Alphas for Study Variables*

Variable	Possible Range	Mean	SD	Cronbach Alpha
<u>Competitive Anxiety</u>				
Somatic Anxiety	9 to 36	18.74	6.45	.92
Worry	7 to 28	16.87	5.10	.89
Concentration Disruption	5 to 20	8.75	3.04	.80
<u>Nonreligious Coping</u>				
Modified-COPE Scale	48 to 240	145.23	20.05	.88
Nonreligious Superstitions	0 to 39	9.47	4.57	.77
Relaxation	1 to 5	3.62	0.95	--
<u>Religious Coping</u>				
Collaborative	6 to 30	14.53	5.87	.96
Deferring	6 to 30	12.92	5.12	.93
Self-Directing	6 to 30	18.97	5.56	.89
Religious Superstitions	0 to 5	1.37	1.41	.69
Frequency of Religious Coping	1 to 5	2.83	1.25	--

Table 4

*Zero-Order Correlations Between Continuous Demographic/Background Variables and Competitive Anxiety Subscales*

Variable	Somatic Anxiety	Worry	Concentration Disruption
Age	-.06	-.11	.01
Years Experience	-.26**	-.09	-.01
Offseason Training Hours	-.18*	-.01	-.03
Season Training Hours	-.02	-.07	-.03
Confidence	-.25**	-.45***	-.27***
Intrinsic Religiousness	.19*	.12	.18*

\*  $p < .05$ .    \*\*  $p < .01$ .    \*\*\*  $p < .001$ .

and Offseason Training Hours ( $r = -.18, p < .05$ ). Meanwhile, Confidence in athletic ability was negatively related to all three components of competitive anxiety: Somatic ( $r = -.25, p < .01$ ), Cognitive Worry ( $r = -.45, p < .001$ ), and Concentration Disruption ( $r = -.27, p < .001$ ). Intrinsic Religiousness was positively correlated with both Somatic Anxiety ( $r = .19, p < .05$ ) and Concentration Disruption ( $r = .18, p < .05$ ).

ANOVAs were computed to examine the relationship between categorical demographic/background variables and competitive anxiety (see Table 5). Gender was significantly related to Somatic Anxiety,  $F(1,141) = 17.32, p < .001$ , with females ( $M = 20.41, SD = 6.34$ ) scoring higher than males ( $M = 16.01, SD = 5.72$ ). Similarly, females ( $M = 17.84, SD = 5.07$ ) scored higher than males ( $M = 15.28, SD = 4.78$ ) on Cognitive Worry,  $F(1,141) = 8.93, p < .01$ .

Type of Sport (i.e., team or individual) was significantly related to all competitive anxiety subscales, including Somatic,  $F(1,141) = 6.38, p < .05$ , Cognitive Worry,  $F(1,141) = 12.02, p < .001$ , and Concentration Disruption,  $F(1,141) = 25.87, p < .001$ . Individual athletes ( $M = 20.81, SD = 6.88$ ) revealed more Somatic Anxiety than team athletes ( $M = 17.87, SD = 6.09$ ). Similarly, scores on Cognitive Worry were higher in individual athletes ( $M = 19.07, SD = 4.72$ ) than in team athletes ( $M = 15.94, SD = 4.99$ ). Concentration Disruption was also found to be greater among individual athletes ( $M = 10.60, SD = 3.37$ ) than team athletes ( $M = 7.97, SD = 2.54$ ).

Correlations were computed between predictor variables to verify that the measures were related as expected (see Table 6). First, the relationship between nonreligious variables was analyzed. A significant positive association was found between the MCOPE and Nonreligious Superstitions ( $r = .20, p < .05$ ).

Table 5

*ANOVA Results for Categorical Demographic/Background Variables and Competitive Anxiety Subscales*

<i>F-Values</i>			
Variable	Somatic Anxiety	Worry	Concentration Disruption
Gender	17.32***	8.93**	3.87
Religion	0.32	0.07	0.36
School Year	1.21	0.78	2.41
Athletic Year	1.13	1.74	1.54
Sport Type	6.38*	12.02***	25.87***

Note: Race was not included in these analyses because the majority of the sample was Caucasian

\*  $p < .05$ .    \*\*  $p < .01$ .    \*\*\*  $p < .001$ .

Table 6

*Zero-Order Correlations Between Nonreligious and Religious Coping*

Variable	1	2	3	4	5	6	7	8
<u>Nonreligious Coping</u>								
1. MCOPE	--							
2. Nonreligious Superstitions	.20*	--						
3. Relaxation	.01	.07	--					
<u>Religious Coping</u>								
4. Religious Superstitions	.19*	.38***	-.02	--				
5. Collaborative	.16	.12	.04	.33***	--			
6. Deferring	.15	.05	.03	.27***	.87***	--		
7. Self-Directing	-.08	-.08	-.02	-.22**	-.68***	-.63***	--	
8. Frequency of Religious Coping	.16	.07	-.02	.40***	.84***	.77***	-.59***	--

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Next, the relationships between religious coping variables were examined.

Significant positive correlations were found between Religious Superstitions and the Collaborative ( $r = .33, p < .001$ ) and Deferring ( $r = .27, p < .001$ ) approaches.

Conversely, a negative association was found between Religious Superstitions and the Self-Directing approach ( $r = -.22, p < .01$ ). The Self-Directing approach also was negatively correlated with both the Collaborative ( $r = -.68, p < .001$ ) and Deferring ( $r = -.63, p < .001$ ) approaches. The relationship between Collaborative and Deferring ( $r = .87, p < .001$ ) was positive. Frequency of Religious Coping had a positive association with Religious Superstitions ( $r = .40, p < .001$ ), Collaborative Religious Coping ( $r = .84, p < .001$ ), and Deferring Religious Coping ( $r = .77, p < .001$ ), as well as a negative association with Self-Directing Religious Coping ( $r = -.59, p < .001$ ).

Correlations also were computed between religious and nonreligious coping measures. Religious Superstitions was positively associated with Nonreligious Coping ( $r = .19, p < .05$ ) and Nonreligious Superstitions ( $r = .38, p < .001$ ).

Finally, the relationships between the competitive anxiety subscales were examined (see Table 7). Somatic Anxiety was positively linked with both Cognitive Worry ( $r = .66, p < .001$ ) and Concentration Disruption ( $r = .52, p < .001$ ). Cognitive Worry and Concentration Disruption also had a positive association ( $r = .59, p < .001$ ).

#### *Analyses of Major Study Questions*

The first major study question pertained to the extent to which athletes use religious strategies to cope with competitive anxiety. This question was addressed in several ways. First, frequencies were computed on a question directly asking participants how often they engage in religious coping strategies when experiencing

Table 7

*Zero-Order Correlations Between Competitive Anxiety Subscales*

Variable	1	2	3
1. Somatic Anxiety	--		
2. Worry	.66***	--	
3. Concentration Disruption	.52***	.59***	--

\*\*\*  $p < .001$ .



competitive anxiety. Consistent with hypotheses, the majority of student athletes reported using religious strategies to cope with competitive anxiety (see Table 8). Specifically, 27% of participants indicated that they often or almost always draw upon religious strategies to help deal with competitive anxiety, while 30.5% indicated that they sometimes use religious coping. In contrast, 42.6% of participants indicated they rarely or never used religious strategies to cope with competitive anxiety. A *t*-test revealed no significant differences between male and female athletes regarding usage of religious strategies.

In addition, responses to the open-ended question about ways participants cope with competitive anxiety were examined (see Table 9). Strategies were placed into religious and nonreligious categories. Relaxation strategies were cited most often (25.9%), followed by superstitions/rituals (19.5%), imagery (10.7%), social interaction (9.5%), and religious responses/prayer (7.8%), which was the fifth most popular approach. A *t*-test revealed there that were no significant gender differences in the number of religious strategies listed.

The second study question pertained to how different religious coping strategies relate to competitive anxiety. We computed correlations to examine the relationships between various types of religious coping and competitive anxiety subscales (see Table 10). Consistent with hypotheses, the Self-Directing approach was negatively related to Cognitive Worry ( $r = -.18, p < .05$ ) and Concentration Disruption ( $r = -.19, p < .05$ ). However, contrary to hypotheses, Concentration Disruption was positively related to both the Collaborative ( $r = .23, p < .01$ ) and Deferring ( $r = .28, p < .001$ ) approaches.

Table 8

*Self-Reported Use of Religious Coping to Deal with Competitive Anxiety*

	<i>Men</i>		<i>Women</i>		<i>Total</i>	
<i>Coping Frequency</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Never	13	(24.1%)	9	(10.3%)	22	(15.6%)
Rarely	11	(20.4%)	27	(31.0%)	38	(27.0%)
Sometimes	16	(29.6%)	27	(31.0%)	43	(30.5%)
Often	8	(14.8%)	10	(11.5%)	18	(12.8%)
Almost Always	6	(11.1%)	14	(16.1%)	20	(14.2%)

Table 9

*Frequency of Open-Ended Competitive Anxiety Coping Strategies*

Coping Strategy	<i>Men</i>		<i>Women</i>		<i>Total</i>	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Prayer/Religion	14	(9.1%)	18	(7.0%)	32	(7.8%)
Superstition/Ritual	30	(19.5%)	50	(19.5%)	80	(19.5%)
Relaxation Strategy	43	(27.9%)	63	(24.6%)	106	(25.9%)
Imagery	15	(9.7%)	29	(11.3%)	44	(10.7%)
Physical Preparation/Practice	10	(6.5%)	16	(6.3%)	26	(6.3%)
Social Interaction	8	(5.2%)	31	(12.1%)	39	(9.5%)
Isolation	10	(6.5%)	16	(6.3%)	26	(6.3%)
Study Competition/Strategize	6	(3.9%)	5	(2.0%)	11	(2.7%)
Rest/Sleep	6	(3.9%)	7	(2.7%)	13	(3.2%)
Other	12	(7.8%)	19	(7.4%)	31	(7.6%)

Note: Table reflects number and percentages of participants who listed each coping strategy as being among their top three.

Table 10

*Zero-Order Correlations Between Competitive Anxiety and Coping Scales*

Variable	Somatic Anxiety	Worry	Concentration Disruption
<u>Nonreligious Coping</u>			
MCOPE	.33***	.41***	.34***
Nonreligious Superstitions	.01	-.01	-.07
Relaxation	.13	.05	-.03
<u>Religious Coping</u>			
Religious Superstitions	.02	.02	.05
Collaborative	.13	.16	.23**
Deferring	.11	.14	.28***
Self-Directing	-.02	-.18*	-.19*
Frequency of Religious Coping	.16	.19*	.27***

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Surprisingly, Frequency of Religious Coping also was positively related to Cognitive Worry ( $r = .19, p < .05$ ) and Concentration Disruption ( $r = .27, p < .001$ ). None of the religious coping measures were related to Somatic Anxiety.

Interestingly, Nonreligious Coping was positively related to all three measures of competitive anxiety (Somatic Anxiety-  $r = .33, p < .001$ ; Cognitive Worry-  $r = .41, p < .001$ ; Cognitive Disruption-  $r = .34, p < .01$ ).

Finally, stepwise multiple regressions were computed to determine which combination of variables (i.e., demographic/background, nonreligious coping, religious coping) best predicts competitive anxiety subscales (see Table 11). Somatic Anxiety was best predicted as follows: MCOPE ( $\beta = .33, p < .001$ ), Gender ( $\beta = .24, p < .01$ ), Offseason Training Hours ( $\beta = -.18, p < .05$ ), Years Experience ( $\beta = -.17, p < .05$ ), and Confidence ( $\beta = -.15, p < .05$ ). Cognitive Worry was best predicted as follows: Confidence ( $\beta = -.37, p < .001$ ), MCOPE ( $\beta = .33, p < .001$ ), Sport Type ( $\beta = .19, p < .01$ ), and Gender ( $\beta = .16, p < .05$ ). Concentration Disruption was best predicted as follows: Sport Type ( $\beta = .31, p < .001$ ), MCOPE ( $\beta = .25, p < .001$ ), Deferring Religious Coping ( $\beta = .21, p < .01$ ), and Confidence ( $\beta = -.20, p < .01$ ).

#### *Additional Analysis*

Since Confidence significantly related to all competitive anxiety subscales, its relationship with demographic/background variables was explored. Confidence correlated positively with season training hours ( $r = .17, p < .05$ ). Gender was also related to Confidence, with male athletes ( $M = 3.83, SD = 0.72$ ) reporting a higher level of Confidence than female athletes ( $M = 3.56, SD = 0.62$ ). No other background/demographic variables were significantly related to Confidence.

Table 11

*Stepwise Multiple Regression Analyses Predicting Competitive Anxiety Subscales*

Variable	$\beta$	$t$	Sig. Level
Somatic Anxiety			
MCOPE	.33	4.53	.000
Gender	.24	3.07	.003
Offseason Training Hours	-.18	-2.45	.016
Years Experience	-.17	-2.19	.031
Confidence	-.15	-2.03	.044
Cognitive Worry			
Confidence	-.37	-5.33	.000
MCOPE	.33	4.79	.000
Sport Type	.19	2.77	.006
Gender	.16	2.30	.023
Concentration Disruption			
Sport Type	.31	4.29	.000
MCOPE	.25	3.39	.001
Deferring	.21	2.90	.004
Confidence	-.20	-2.85	.005

## Discussion

### *Major Study Questions*

#### *Self-reported Use of Religious Strategies to Deal with Competitive Anxiety.*

When asked directly, a majority of student-athletes (57.5%) reported that they utilize religious strategies at least sometimes in order to cope with competitive anxiety. This is consistent with hypotheses and research showing that religion is an important part of athletes' lives (e.g., Balague, 1999; Buhrmann & Zaug, 1983). However, when responding to an open-ended question about strategies used to cope with competitive anxiety, only a small percentage of participants (7.8%) listed a religiously based strategy. Similarly, a study by Harisim-Piper (2006) revealed that many college students reported using religious coping strategies when directly asked, but a much smaller percentage spontaneously listed religious coping strategies in response to an open-ended question.

There may be several reasons why athletes generally reported using religious coping strategies upon direct questioning but not in response to an open-ended question. First, it is possible that nonreligious strategies were cited more often in response to an open-ended question because athletes do not typically think of religion as a coping strategy. Another possibility is that athletes who use religious coping strategies might use nonreligious alternatives more often. It is also important to note that the athletes were not asked to complete surveys immediately prior to an athletic competition. Research shows that religiosity tends to intensify during critical, stressful situations (Pargament, 2002).

No significant gender differences were discovered in the use of religious coping despite research showing that women tend to be more religious than men (Gallup & Lindsay, 1999) and are more likely to use religious coping strategies (Koenig, George, & Seigler, 1988). Some have argued that females are socialized differently and raised to develop personality traits (e.g., passive, nurturing) that are conducive to higher levels of religiousness (Mol, 1985; Suziedelis & Potvin, 1981; cited in Miller & Hoffman, 1995). However, the subset of women who engage in competitive sport at the collegiate level might have different socialization histories than other women such that traits including competitiveness and assertiveness may be valued.

*Relationship Between Coping and Competitive Anxiety.* Contrary to hypotheses, the Collaborative approach was positively related to Concentration Disruption. That is, athletes who view problem-solving as a responsibility they share with God experienced higher levels of concentration difficulties. This contrasts with previous research in which the Collaborative approach is generally considered the most adaptive style of religious coping (Pargament, 2002). Specifically, research has linked the Collaborative approach with positive outcomes such as increased self-esteem, a greater sense of personal control, and more adaptive intrinsic (i.e., internally motivated) religiosity (Pargament et al., 1988).

The Deferring approach was also positively related to Concentration Disruption. Previous research similarly has linked the Deferring approach to poor outcomes such as decreased self-esteem, increased intolerance for differences, sense of control by chance, and poorer problem-solving strategies (Pargament et al., 1988). However, it contradicts the assertion by Czech and colleagues (2004) that making an external



attribution for outcome may help reduce anxiety by decreasing one's sense of personal responsibility.

The positive relationship between competitive anxiety and the Collaborative and Deferring approaches also seems to contradict the assertion that religion may serve a protective function for athletes against psychological distress (Storch et al., 2001; Koenig, McCullough, & Larson, 2001). However, unlike most previous studies concerning religious coping, this study examines stress in the context of a performance situation. As compared to other types of life stressors, performance situations have unique social evaluation and competitive demands. In addition, the stressor lasts for a discrete period of time and one knows in advance when the performance situation is going to occur.

Performance situations are also somewhat controllable. Previous research suggests that the Deferring approach may be most useful when faced with uncontrollable stressors (Pargament, 2002). However, Deferring approaches may be less helpful with controllable stressors because the person is less likely to take personal ownership of the problem and take necessary steps to alleviate the problem. While individuals who use Collaborative coping do assume some responsibility, it is possible that sharing the responsibility for coping with another entity (e.g., God) in the context of a performance-based stressor is less helpful than taking full responsibility.

Consistent with this idea is the fact that the Self-Directing approach was inversely related to measures of cognitive anxiety (i.e., Cognitive Worry and Concentration Disruption). Thus, those athletes who are fully reliant on their own resources experienced lower levels of cognitive anxiety. Previous research has found

the Self-Directing approach to be associated with higher levels of self-esteem and a higher sense of competence (Pargament et al., 1988). However, this style has also been associated with negative mental health outcomes (e.g., Bickel et al., 1998; Pargament & Brant, 1998). It appears that the Self-Directing style may be most beneficial under somewhat controllable situations (Pargament et al., 1988), such as athletic competitions. Maybe the use of problem-focused coping strategies in performance situations, in general, leads to lower cognitive trait anxiety levels.

Interestingly, higher scores on the MCOPE, a measure of nonreligious coping usage, were also related to higher levels of competitive anxiety (Somatic Anxiety, Cognitive Worry, and Concentration Disruption). A study by Campen and Roberts (2001) similarly found that anxious athletes report a greater number of overall coping strategies.

Although the direction of causal relationships cannot be determined due to the correlational design used in this study, it is interesting to speculate about possible causal factors. One possibility is that the experience of competitive anxiety causes individuals to use more religious and nonreligious coping strategies. If true, it would appear as though the strategies assessed in this study are not particularly effective at reducing their anxiety. Interestingly, research has shown that athletes who use coping strategies frequently are not necessarily using effective strategies. For instance, Finch (1994) showed that high trait anxious athletes utilize more maladaptive and emotion-focused coping strategies in stressful situations than low trait anxious athletes. Although it is possible that the nonreligious and religious strategies are causing higher levels of the competitive anxiety, this seems unlikely given the large body of research showing

benefits of religious (e.g., Pargament et al., 1988) and nonreligious (e.g., Fletcher & Hanton, 2001) coping in other contexts.

What combination of factors best predicts competitive anxiety? Stepwise regressions revealed that Somatic Anxiety is predicted by somewhat different variables than cognitive based anxiety. Only Somatic Anxiety was best predicted by Offseason Training Hours and Years of Experience. Perhaps extensive time participating in the sport strengthens procedural memory, which in turn reduces sympathetic nervous system arousal. Variables that predicted both Somatic Anxiety and cognitive based anxiety (Cognitive Worry, Concentration Disruption) were nonreligious coping (MCOPE) and Confidence.

*Confidence and Competitive Anxiety.* As expected, Confidence was negatively related to each component of competitive anxiety. This corresponds with previous research linking high levels of competitive anxiety with low levels of self-confidence (Koivula, Hassmén, & Fallby, 2002). Hanton and colleagues (2003) found that athletes with lower levels of self-confidence viewed their anxiety as debilitating and outside of their control, whereas athletes with high levels of self-confidence reported facilitative interpretations and positive assessments of control.

Confidence also appears to relate to level of training. Specifically, higher hours of training during the season were associated with higher levels of Confidence. In a study by Wilson and colleagues (2004), factor analyses showed physical/mental preparation as the highest ranked source of confidence among athletes. A subsequent hierarchical multiple regression analysis found that physical/mental preparation was a significant predictor of trait confidence among master athletes. Zervas and Kakkos

(1991) revealed no difference in confidence levels between a mental relaxation and imagery rehearsal program and a physical practice control group. Therefore, both physical and psychological preparation appear to be useful in increasing confidence levels of athletes.

Consistent with previous research of non-elite athletes (e.g., Mahoney, Gabriel, & Perkins, 1987; Vealey, 1988; Mills & Gehlsen, 1996), women reported lower levels of confidence than their male counterparts. Moreover, Swain and Jones (1991) found that masculine males (i.e., those with a high number of common male-associated traits) exhibited greater levels of self-confidence than feminine males (i.e., those who demonstrate traits more characteristic of females). Thus, it appears that traits consistent with a masculine belief system promote higher confidence in the realm of competitive sport. One caveat noted by Vealey (1988) suggested that participation level of athletes should be taken into account when assessing gender differences in confidence, as research has shown no significant gender differences among elite athletes (Mahoney et al., 1987; Vealey, 1988; Mills & Gehlsen, 1996).

#### *Limitations and Suggestions for Future Research*

This study has several limitations. To begin, this study assessed competitive anxiety at a single point in time, irrespective of proximity to the athlete's next game/match. An athlete in offseason training would have to rely more heavily on retrospective memory, which is prone to error. A more accurate assessment of competitive anxiety might be obtained by assessing participants shortly before upcoming athletic events. Moreover, researchers employing longitudinal designs would be able to examine how change in coping strategies relates to change in competitive anxiety levels

over time. It also might be beneficial to include a measure of social desirability because athletes, particularly males, may be motivated to underreport levels of competitive anxiety.

Furthermore, the sample comprised only undergraduate student-athletes. It is not clear how well these results would generalize to athletes at different levels of competition. Moreover, the sample was fairly homogeneous regarding ethnicity and religion. Over 90% of the participants were Caucasian and most (68.3%) were Catholic. Future research should include greater diversity with respect to age, ethnicity, socioeconomic status, and religion.

Finally, the measure of competitive anxiety in this study was restricted to anxiety intensity. However, Jones (1995) emphasized the importance of assessing anxiety direction (i.e., whether an athlete feels that the anxiety is facilitative or debilitating to his or her performance). Research in this area shows that athletes' assessments of competitive anxiety direction is directly linked with self-confidence (Hanton et al., 2003).

#### *Implications for Clinicians*

Despite these limitations, this study found that various subgroups are more prone to experience competitive anxiety and should be targeted for intervention. Higher risk groups include athletes who are females, less experienced, less confident, and involved in individual sports. Clinicians should recognize these risk factors and their potential effect on competitive anxiety.

Clinicians also should be aware that cognitive-behavioral psychotherapy may be beneficial to reduce competitive anxiety in athletes. Martens and colleagues (1990) emphasized the importance of cognitive appraisal of the competitive situation. These

authors posit that competitive anxiety is related to perceived threats to self-esteem and expectations of success. They suggest that athletes may feel threatened and experience competitive anxiety when perceptions of environmental demands do not match response capability. Therefore, it might be useful to utilize therapeutic techniques that challenge the cognitions that contribute to competitive anxiety by helping athletes reduce perceived threats in their environment by building confidence.

This research highlights the important role of confidence in athletes' experience of competitive anxiety. The more confidence athletes have, the less anxiety they are likely to experience. Thus, clinicians should look to utilize confidence-building interventions, such as mental training programs (e.g., Savoy & Beitel, 1997; Garza & Feltz, 1998), imagery (Evans, Jones, & Mullen, 2004), covert modeling (Rushall, 1988), development of self-talk (Landin & Hebert, 1999), Personal-Disclosure Mutual Sharing (PDMS) Team Building (Holt & Dunn, 2006), self-efficacy enhancement, and cognitive-behavioral strategies (Prapavessis, Grove, McNair, & Cable, 1992). Perhaps intervention studies which utilize multiple assessment points could be run in order to assess the effectiveness of these interventions.

Finally, the results provide evidence that many college athletes rely upon religious strategies to cope with competitive anxiety. While there is a lack of evidence that Collaborative and Deferring religious coping strategies effectively reduce competitive anxiety, it is important that clinicians respect the religious values of athletes. Future research using experimental designs should explore whether interventions involving Self-Directing Religious Coping and confidence enhancement can lead to reduced competitive anxiety.

## REFERENCES

- Allport, G. W. & Ross, J. M. (1976). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology*, 5, 447-457.
- American Sports Data Inc. (2004). A comprehensive study of sports injuries in the U.S. Retrieved October 23, 2004, from [http://www.americansportsdata.com/sports\\_injury1.asp](http://www.americansportsdata.com/sports_injury1.asp)
- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4<sup>th</sup> ed.). Washington D.C.: American Psychiatric Association.
- Anshel, M. H., Porter, A., & Quek, J. (1998). Coping with acute stress in sport as a function of gender: An exploratory study. *Journal of Sport Behavior*, 21, 363-376.
- Astor-Dubin, L. & Hammen, C. (1984). Cognitive versus behavioral coping responses of men and women: A brief report. *Cognitive Therapy and Research*, 8, 85-90.
- Balague, G. (1999). Understanding identity, value, and meaning when working with elite athletes. *Sport Psychologist*, 13, 89-98.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York, NY: W.H. Freeman/Times Books/Henry Holt & Co.
- Barlow, D. H. (1988). *Anxiety and its disorders: The nature and treatment of anxiety and panic*. New York: London.

- Benson, P. L., Dehority, J., Garman, L., Hanson, E., Hochschwender, M., Lebold, C., et al. (1980). Interpersonal correlates of non-spontaneous helping behavior. *Journal of Social Psychology, 110*, 87-95.
- Bickel, C. Ó., Ciarrocchi, J. W., Sheers, N. J., Estadt, B. K., Powell, D. A., & Pargament, K. I. (1998). Perceived stress, religious coping styles, and depressive affect. *Journal of Psychology and Christianity, 17*, 33-42.
- Bleak, J. L. & Frederick, C. M. (1998). Superstitious behavior in sport: Levels of effectiveness and determinants of use in three collegiate sports. *Journal of Sport Behavior, 21*, 1-15.
- Bremner, J. D., Innis, R. B., Southwick, S. M., Staib, L., Zoghbi, S., & Charney, D. S. (2000). Decreased benzodiazepine receptor binding in prefrontal cortex in combat-related posttraumatic stress disorder. *American Journal of Psychiatry, 157*, 1120-1126.
- Buhrmann, H., Brown, B., & Zaugg, M. (1982). Superstitious beliefs and behavior: A comparison of male and female basketball players. *Journal of Sport Behavior, 5*, 175-185.
- Buhrmann, H. G. & Zaugg, M. K. (1983). Religion and superstition in the sport of basketball. *Journal of Sport Behavior, 6*, 146-157.
- Burton, D. (1988). Do anxious swimmers swim slower? Reexamining the elusive anxiety-performance relationship. *Journal of Sport & Exercise Psychology, 10*, 45-61.



- Campen, C. & Roberts, D. C. (2001). Coping strategies of runners: Perceived effectiveness and match to precompetitive anxiety. *Journal of Sport Behavior*, 24, 144-161.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality & Social Psychology*, 56, 267-283.
- Charney, D. S., Woods, S. W., Price, L. H., Goodman, W. K., Glazer, W. M., & Heninger, G. R. (1990). Noradrenergic dysregulation in panic disorder. In J. Ballenger (Ed.), *Neurobiology of Panic Disorder* (pp. 91-105). New York, NY: Wiley-Liss.
- Coakley, J. J. (2001). *Sport in Society*. Boston, MA: Irwin, McGraw, and Hill.
- Cohn, P. J. (1990). Preperformance routines in sport: Theoretical support and practical applications. *Sport Psychologist*, 4, 301-312.
- Corcoran, K. J. (1989). Is competitive anxiety an observable behavior? A sociometric validity study of the SCAT. *Journal of Personality Assessment*, 53, 677-684.
- Cratty, B. J. (1989). *Psychology in contemporary sport*. Englewood Cliffs, New Jersey: Prentice Hall, Inc.
- Crocker, P. R. E. & Graham, T. R. (1995). Coping by competitive athletes with performance stress: Gender differences and relationships with affect. *Sport Psychologist*, 9, 325-338.
- Crocker, P. R. E. & Isaak, K. (1997). Coping during competitions and training sessions: Are youth swimmers consistent? *International Journal of Sport Psychology*, 28, 355-369.

- Crowe, R., Noyes, R., Jr., Pauls, D. L., & Sylmen, D. (1983). A family study of panic disorder. *Archives of General Psychiatry*, 40, 1065-1069.
- Czech, D. R., Wrisberg, C. A., Fisher, L. A., Thompson, C. L., & Hayes, G. (2000). The experience of Christian prayer in sport: An existential phenomenological investigation. *Journal of Psychology and Christianity*, 23, 3-11.
- Eads Home Ministries (2004). Kurt Warner: Christian. Retrieved August 17, 2004, from <http://www.eadshome.com/KurtWarner.htm>
- Eklund, R. C. (1996). Preparing to compete: A season-long investigation with collegiate wrestlers. *Sport Psychologist*, 10, 111-131.
- Eklund, R. C., Grove, R. J., & Heard, P. N. (1998). The measurement of slump-related coping: Factorial validity of the COPE and the modified-COPE inventories. *Journal of Sport and Exercise Psychology*, 20, 157-175.
- Evans, L., Jones, L., & Mullen, R. (2004). An imagery intervention during the competitive season with an elite rugby player. *Sport Psychologist*, 18, 252-271.
- Eysenck, H. J. (1967). *The Biological Basis of Personality*. Springfield, Ill: Thomas.
- Fazey, J. & Hardy, L. (1988). The inverted-U hypothesis: Catastrophe for sport psychology. *British Association of Sports Sciences Monograph No. 1*. Leeds: The National Coaching Foundation.
- Feagin, J. R. (1964). Prejudice and religious types: A focused study of southern fundamentalists. *Journal for the Scientific Study of Religion*, 4, 3-13.
- Finch, L. M. (1994). The relationships among coping strategies, trait anxiety, and performance in collegiate softball players. *Dissertation Abstracts International Section A: Humanities & Social Sciences*, 54, 3369.

- Fischer, G. (1997). Abstinence from sex and other pre-game rituals used by college male varsity athletes. *Journal of Sport Behavior*, 20, 176-184.
- Fletcher, D. & Hanton, S. (2001). The relationship between psychological skills usage and competitive anxiety responses. *Psychology of Sport and Exercise*, 2, 89-101.
- Flowers, R. A. & Brown, C. (2002). Effects of sport context and birth order on state anxiety. *Journal of Sport Behavior*, 25, 41-56.
- Forsman, L. & Johnson, M. (1996). Dimensionality and validity of two scales measuring different aspects of self-esteem. *Scandinavian Journal of Psychology*, 37, 1-15.
- Gallup, G. J. & Lindsay, D. M. (1999). *Surveying the religious landscape: Trends in US beliefs*. Harrisburg, PA: Morehouse Publishing.
- Garza, D. L. & Feltz, D. L. (1998). Effects of selected mental practice on performance, self-efficacy, and competition confidence of figure skaters. *Sport Psychologist*, 12, 1-15.
- Gaudreau, P., Lapierre, A. M., & Blondin, J. P. (2001). Coping at three phases of a competition: Comparison between pre-competitive, competitive, and post-competitive utilization of the same strategy. *International Journal of Sport Psychology*, 32, 369-385.
- Gaudreau, P. & Blondin, J. P. (2002). Development of a questionnaire for the assessment of coping strategies employed by athletes in competitive sport situations. *Psychology of Sport and Exercise*, 3, 1-34.

- Giacobbi Jr., P. R. & Weisberg, R. S. (2000). An examination of coping in sport: Individual trait anxiety differences and situational consistency. *Sport Psychologist*, 14, 42-62.
- Gould, D., Eklund, R. C., & Jackson, S. A. (1992). 1988 U.S. Olympic wrestling excellence: I. Mental preparation, precompetitive cognition, and affect. *Sport Psychologist*, 6, 358-382.
- Gould, D., Finch, L. M., & Jackson, S. A. (1993). Coping strategies used by national champion figure skaters. *Research Quarterly for Exercise and Sport*, 64, 453-468.
- Gray, J. A. (1982). *The Neuropsychology of Anxiety*. New York, NY: Oxford University Press.
- Hammermeister, J. & Burton, D. (1995). Stress, appraisal, and coping revisited: Examining the antecedents of competitive state anxiety with endurance athletes. *Sport Psychologist*, 15, 66-90.
- Hanton, S., Mellalieu, S. D., & Hall, R. (2003). Re-examining the competitive anxiety trait-state relationship. *Personality & Individual Differences*, 33, 1125-1136.
- Hardy, C. J. & Crace, R. K. (1993). The dimensions of social support when dealing with sport injuries. In D. Pargman (Ed.), *Psychological Bases of Sport Injuries* (pp. 121-144). Morgantown, WV: Fitness Information Technology.
- Hardy, L. & Fazey, J. (1987, June). *The inverted-U hypothesis: A catastrophe for sport psychology?* Paper presented at the Annual Conference of the North American Society for the Psychology of Sport and Physical Activity, Vancouver, BC.

- Hardy, L., Jones, J. G., & Gould, D. (1996). *Understanding Psychological Preparation for Sport: Theory and Practice of Elite Performers*. Hoboken, NJ: John Wiley & Sons, Inc.
- Harisim-Pieper, M. A. (2006). *The relationship between religious coping and psychological adjustment to college*. Unpublished master's thesis, University of Dayton, Dayton, Ohio.
- Heide, F. J. & Borkovec, T. D. (1984). Relaxation-induced anxiety: Mechanisms and theoretical implications. *Behaviour Research and Therapy*, 22, 1-12.
- Hoffman, S. J. (1992). *Sport and Religion*. Champaign, IL: Human Kinetics Books.
- Hoge, D. R. (1972). A validated intrinsic religious motivation scale. *Journal for the Scientific Study of Religion*, 11, 369-376.
- Hoge, D. R. & Carroll, J. W. (1978). Determinants of commitment and participation in suburban Protestant churches. *Journal for the Scientific Study of Religion*, 4, 107-127.
- Holt, N. L. (2003). Coping in professional sport: A case study of an experienced cricket player. *Athletic Insight: Online Journal of Sport Psychology*, 5, NP.
- Holt, N. L. & Dunn, J. G. H. (2006). Guidelines for delivering personal-disclosure mutual-sharing team building interventions. *The Sport Psychologist*, 20, 348-367.
- Humara, M. (1999). The relationship between anxiety and performance: A cognitive-behavioral perspective. *Athletic Insight: Online Journal of Sport Psychology*, 1, NP.

- Johnson, M. & Forsman, L. (1995). Competence strivings and self-esteem: An experimental study. *Personality and Individual Differences*, 19, 417-430.
- Jones, E. E. & Berglas, S. (1978). Control of attributions about the self through self-handicapping strategies: The appeal of alcohol and the role of underachievement. *Personality and Social Psychology Bulletin*, 4, 200-206.
- Jones, J. G. & Cale, A. (1989). Precompetition temporal patterning of anxiety and self-confidence in males and females. *Journal of Sport Behavior*, 12, 183-195.
- Jones, G. (1995). More than just a game: Research developments and issues in competitive anxiety in sport. *British Journal of Psychology*, 86, 449-478.
- Jones, G. & Swain, A. (1995). Predispositions to experience debilitating and facilitative anxiety in elite and nonelite performers. *Sport Psychologist*, 9, 201-211.
- Jones, M. V., Mace, R. D., Bray, S. R., MacRae, A. W., & Stockbridge, C. (2002). The impact of motivational imagery on the emotional state and self-efficacy levels of novice climbers. *Journal of Sport Behavior*, 25, 57-73.
- Koenig, H. G., George, L. K., & Siegler, I. C. (1988). The use of religion and other emotion-regulating coping strategies among older adults. *Gerontologist*, 28, 303-310.
- Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of Religion and Health*. New York, NY: Oxford University Press.
- Koivula, N., Hassmen, P., & Fallby, J. (2002). Self-esteem and perfectionism in elite athletes: Effects on competitive anxiety and self-confidence. *Personality and Individual Differences*, 35, 865-875.

- Krane, V. & Williams, J. (1987). Performance and somatic anxiety, cognitive anxiety, and confidence changes prior to competition. *Journal of Sport Behavior*, 10, 47-56.
- Landin, D. & Hebert, E. P. (1999). The influence of self-talk on the performance of skilled female tennis players. *Journal of Applied Sport Psychology*, 11, 263-282.
- Lazarus, R. S. & Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York, NY: Springer.
- Leichliter, J. S., Meilman, P. W., Presley, C. A., & Cashin, J. R. (1998). Alcohol use and related consequences among students with varying levels of involvement in college athletics. *Journal of American College Health*, 46, 257-262.
- Lowe, R. & McGrath, J. E. (1971). Stress arousal and performance: Some findings calling for a new theory. Project Report, AF, 1161-1167.
- Mahoney, M. J., Gabriel, T. J., & Perkins, T. J. (1987). Psychological skills and exceptional athletic performance. *Sport Psychologist*, 1, 181-199.
- Martens, R., Vealey, R. S., & Burton, D. (1990). *Competitive anxiety in sport*. Champaign, IL: Human Kinetic Publishers.
- McGregor, H., & Abrahamson, E. (2000). The psychological effects of pre-competitive stress on elite divers - a review. *South African Journal of Psychology*, 30, 38-44.
- McNally, I. M. (2002). Contrasting concepts of competitive state-anxiety in sport: Multidimensional anxiety and catastrophe theories. *Athletic Insight: Online Journal of Sport Psychology*, 4, NP.

- McNaughton, N. & Gray, J. A. (2000). Anxiolytic action on the behavioural inhibition system implies multiple types of arousal contribute to anxiety. *Journal of Affective Disorders*, 61, 161-176.
- Merikangas, K. R., Mehta, R. L., Molnar, B. E., Walters, E. E., Swendsen, J. D., Aulair-Gaziola, S., et al. (1998). Comorbidity of substance use disorders with mood and anxiety disorders: Results of the international consortium in psychiatric epidemiology. *Addictive Behaviors*, 23, 893-908.
- Miller, S. M. (1989). Cognitive informational styles in the process of coping with threat and frustration. *Advances in Behaviour Research & Therapy*, 11, 223-234.
- Miller, A. S. & Hoffman, J. P. (1999). The growing divisiveness: Culture wars or a war of words? *Social Forces*, 78, 721-745.
- Mills, B. D. & Gehlsen, G. (1996). A multidisciplinary investigation of the relation of state sport confidence with preference and velocity of swimming starts. *Perceptual and Motor Skills*, 83, 207-210.
- Mol, H. (1985). *The Faith of Australians*. Sydney: George, Allen, and Unwin.
- Morris, L. W., Davis, M. A., & Hutchings, C. H. (1981). Cognitive and emotional components of anxiety: Literature review and a revised worry-emotionality scale. *Journal of Educational Psychology*, 73, 541-555.
- Neil, G., Anderson, B., & Sheppard, W. (1981). Superstitions among male and female athletes at various levels of involvement. *Journal of Sport Behavior*, 4, 137-148.
- Ntoumanis, N., Biddle, S. J., & Haddock, G. (1999). The mediating role of coping strategies on the relationship between achievement motivation and affect in sport. *Anxiety, Stress & Coping: An International Journal*, 12, 299-327.



- Pargament, K. I. (2002). The bitter and the sweet: An evaluation of the costs and benefits of religiousness. *Psychological Inquiry*, 13, 168-181.
- Pargament, K. I. & Brant, C. R. (1998). Religion and coping. In H. Koenig (Ed.), *Handbook of Religion and Mental Health* (pp. 111-128). San Diego, CA, Academic Press, Inc.
- Pargament, K. I., Kennell, J., Hathaway, W., Grevengeod, N., Newman, J., & Jones, W. (1988). Religion and the problem-solving process: Three styles of coping. *Journal for the Scientific Study of Religion*, 27, 90-104.
- Prapavessis, H. & Grove, J. R. (1994). Personality variables as antecedents of precompetitive mood state temporal patterning. *International Journal of Sport Psychology*, 25, 347-365.
- Prapavessis, H., Grove, J. R., Maddison, R., & Zillmann, N. (2003). Self-handicapping tendencies, coping, and anxiety responses among athletes. *Psychology of Sport and Exercise*, 4, 357-375.
- Prapavessis, H., Grove, J. R., McNair, P. J., & Cable, N. T. (1992). Self-regulation training, state anxiety, and sport performance: A psychophysiological case study. *Sport Psychologist*, 6, 213-229.
- Ptacek, J. T., Smith, R. E., & Dodge, K. L. (1994). Gender differences in coping with stress: When stressor and appraisals do not differ. *Personality and Social Psychology Bulletin*, 20, 421-430.
- Rhodewalt, F., Saltzman, A. T., & Wittmer, J. T. (1984). Self-handicapping among competitive athletes: The role of practice in self-esteem protection. *Basic and Applied Social Psychology*, 5, 197-209.

- Rodrigo, G., Lusiardo, M., & Pereira, G. (1990). Relationship between anxiety and performance in soccer players. *International Journal of Sport Psychology*, 21, 112-120.
- Rushall, B. S. (1988). Covert modeling as a procedure for altering an elite athlete's psychological state. *Sport Psychologist*, 2, 131-140.
- Savoy, C. & Beitel, P. (1997). The relative effect of a group and group/individualized program on state anxiety and state self-confidence. *Journal of Sport Behavior*, 20, 364-376.
- Schmidt, N. B., Storey, J., Greenberg, B. D., Santiago, H. T., Li, Q., & Murphy, D. L. (2000). Evaluating gene x psychological risk factor effects in the pathogenesis of anxiety: A new model approach. *Journal of Abnormal Psychology*, 109, 308-320.
- Schofield, G., Dickson, G., Mummery, K., & Street, H. (2002). Dysphoria, linking, and pre-competitive anxiety in triathletes. *Athletic Insight: Online Journal of Sport Psychology*, 4, NP.
- Selye, H. (1975). Stress without distress. *Vie medicale au Canada francais*, 4, 964-968.
- Simon, J. A. & Martens, R. (1977). S.C.A.T. as a predictor of A-states in varying competitive situations. In D.M. Landers & R.W. Christina (Eds.), *Psychology of Motor Behaviour and Sport* (pp. 146-156). Champaign, IL: Human Kinetics Publishing.

- Skelton, N. (2002). Sport Anxiety Scale (SAS). *SPORTSPSYC Unpublished* [Online Source, edited by S. Burke & A. Szabo]. Retrieved July 7, 2004, from <http://dlibrary.acu.edu.au/staffhome/stburke/su02p50.htm>
- Smith, R., Smoll, F., & Schutz, R. (1990). Measurements and correlates of sport specific cognitive and somatic trait anxiety: The Sport Anxiety Scale. *Anxiety Research*, 2, 263-280.
- Smith, T. W., Snyder, C. R., & Handelsman, M. M. (1982). On the self-serving function of an academic wooden leg: Test anxiety as a self-handicapping strategy. *Journal of Personality and Social Psychology*, 42, 314-321.
- Snyder, C. R., Smith, T. W., Augelli, R. W., & Ingram, R. E. (1985). On the self-serving function of social anxiety: Shyness as a self-handicapping strategy. *Journal of Personality and Social Psychology*, 48, 970-980.
- Spielberger, C. D. (1966). Theory and research on anxiety. In C.D. Spielberger (Ed.), *Anxiety and Behavior* (pp. 3-20). New York, NY: Academic Press.
- Spielberger, C. D. (1972). Conceptual and methodological issues in anxiety research. In C.D. Spielberger (Ed.), *Anxiety: Current Trends in Theory and Research* (Vol. 1, pp. 23-49). New York, NY: Academic Press.
- Stone, A. A. & Neale, J. M. (1984). New measure of daily coping: Development and preliminary results. *Journal of Personality and Social Psychology*, 46, 892-906.
- Storch, E. A., Storch, J. B., Kolsky, A. R., & Silverstri, S. M. (2001). Religiosity of elite college athletes. *Sport Psychologist*, 15, 346-351.
- Suziedelis, A. & Potvin, R. H. (1981). Sex differences in factors affecting religiousness among Catholic adolescents. *Journal for Scientific Study of Religion*, 20, 38-50.

- Swain, A. & Jones, G. (1991). Gender role endorsement and competitive anxiety. *International Journal of Sport Psychology*, 22, 50-65.
- Taylor, S. E., Klein, L. C., Lewis, B. P., Gruenewald, T. L., Garung, R. A. R., Updegraff, J. A. (2000). Biobehavioral responses to stress in females: Tend-and-befriend, not fight-or-flight. *Psychological Review*, 107, 411-429.
- Thuot, S. M., Kavouras, S. A., & Kenefick, R. W. (1998). Effect of perceived ability, game location, and state anxiety on basketball performance. *Journal of Sport Behavior*, 21, 311-321.
- Torgerson, J. K. (1983). Genetic factors in anxiety disorders. *Archives of General Psychiatry*, 40, 1085-1089.
- Van Raalte, J. L., Brewer, B. W., Nemeroff, C. J., & Linder, D. E. (1991). Chance orientation and superstitious behavior on the putting green. *Journal of Sport Behavior*, 14, 41-50.
- Vealey, R. S. (1988). Sport-confidence and competitive orientation: An addendum on scoring procedures and gender differences. *Journal of Sport & Exercise Psychology*, 10, 471-478.
- Vealey, R. S. & Greenleaf, C. A. (1998). Seeing is believing: Understanding and using imagery in sport. In J.M. Williams (Ed.), *Applied Sport Psychology* (pp. 237-269). Mountain View, CA: Mayfield Publishing Co.
- Watson, J. C. (2002). Assessing the potential for alcohol-related issues among college student-athletes. *Athletic Insight*, 4, 1-12.
- Weinberg, R. S. & Gould, D. (1995). *Foundations of Sport and Exercise Psychology*. Champaign, IL: Human Kinetic Publishers.

- Wilson, P. & Eklund, R. C. (1998). The relationship between competitive anxiety and self-presentational concerns. *Journal of Sport and Exercise Psychology*, 20, 81-97.
- Wilson, R. C., Sullivan, P. J., Myers, N. D., & Feltz, D. L. (2004). Sources of sport confidence of master athletes. *Journal of Sport & Exercise Psychology*, 26, 369-384.
- Wise, C. D., Berger, B. D., & Stein, L. (1972). Benzodiazepines: Anxiety-reducing activity by reduction of serotonin turnover in the brain. *Science*, 177, 180-183.
- Womack, M. (1992). Why athletes need ritual. In S. Hoffman (Ed.), *Sport and Religion* (pp. 191-202). Champaign, IL: Human Kinetics Publishers.
- Yerkes, R. M. & Dodson, J. D. (1908). The Relation of Strength of Stimulus to Rapidity of Habit Formation. *Journal of Comparative Neurology & Psychology*, 18, 459-482.
- Zervas, Y. & Kakkos, V. (1991). Visuomotor behavior rehearsal in archery shooting performance. *Perceptual and Motor Skills*, 73, 1183-1190.
- Zimmerman, M., McDermut, W., & Mattia, J. I. (2000). Frequency of anxiety disorders in psychiatric outpatients with major depressive disorder. *American Journal of Psychiatry*, 157, 1337-1340.



### APPENDIX B

Directions: Please use the following scale to indicate your response to each statement listed below. Write the corresponding number in the blank next to each statement.

	Strongly Disagree (1)	Moderately Disagree (2)	Moderately Agree (3)	Strongly Agree (4)
1. My faith involves all of my life.	1	2	3	4
2. One should seek God's guidance when making every important decision.	1	2	3	4
3. In my life I experience the presence of the divine.	1	2	3	4
4. My faith sometimes restricts my actions.	1	2	3	4
5. Nothing is as important to me as serving God as best I know how.	1	2	3	4
6. I try hard to carry my religion over into all my other dealings in life.	1	2	3	4
7. My religious beliefs are what really lie behind my whole approach to life.	1	2	3	4
8. It doesn't matter so much what I believe as long as I lead a moral life.	1	2	3	4
9. Although I am a religious person, I refuse to let religious considerations influence my everyday affairs.	1	2	3	4
10. Although I believe in my religion, I feel there are many more important things in life.	1	2	3	4

### APPENDIX C

Directions: A number of statements that athletes have used to describe their thoughts and feelings before and during competition are listed below. Read each statement and circle the appropriate number to the right of the statement to indicate how you feel prior to competition. Some athletes feel that they should not admit to feelings of nervousness or worry, but such reactions are actually quite common, even among professional athletes. To help better understand reactions to competition, please share your true reactions with us. There are, therefore, no right or wrong answers. Do not spend too much time on any one statement, but choose the answer which describes how you commonly react.

	Not at all (1)	Somewhat (2)	Moderately so (3)	Very much so (4)
1. I feel nervous	1	2	3	4
2. During competition I find myself thinking about unrelated things	1	2	3	4
3. I have self doubts	1	2	3	4
4. My body feels tense	1	2	3	4
5. I am concerned that I may not do as well in competition as I could	1	2	3	4
6. My mind wanders during competition	1	2	3	4
7. While performing, I often do not pay attention to what is going on	1	2	3	4
8. I feel tense in my stomach	1	2	3	4
9. Thoughts of doing poorly interfere with my concentration during competition	1	2	3	4
10. I'm concerned about choking under pressure	1	2	3	4
11. My heart races	1	2	3	4
12. I feel my stomach sinking	1	2	3	4
13. I'm concerned about performing poorly	1	2	3	4
14. I have lapses of concentration during competition because of nervousness	1	2	3	4
15. I sometimes find myself trembling before or during a competitive event	1	2	3	4
16. I'm worried about reaching my goal	1	2	3	4



17. My body feels tight	1	2	3	4
18. I'm concerned that others will be disappointed in my performance	1	2	3	4
19. My stomach gets upset before or during a competitive event	1	2	3	4
20. I'm concerned I won't be able to concentrate	1	2	3	4
21. My heart pounds before competition	1	2	3	4

### APPENDIX D

Directions: Think about a stressful situation you have faced during a recent sport competition. For each item, indicate how much you used each strategy during the stressful performance situation. Circle the best response.

	Not Used (1)		Used Very Much (5)		
1. I asked teammates what they did or would do.	1	2	3	4	5
2. I talked to my coaches or teammates to find out more about my performance.	1	2	3	4	5
3. I tried to get help from someone about what to do.	1	2	3	4	5
4. I talked to someone who could do something about my performance.	1	2	3	4	5
5. I talked to someone about how I felt.	1	2	3	4	5
6. I got support and understanding from someone.	1	2	3	4	5
7. I talked about my feelings with someone.	1	2	3	4	5
8. I tried to get help from my coach or teammates to deal with my feelings.	1	2	3	4	5
9. I could not deal with my performance and stopped trying.	1	2	3	4	5
10. I decreased the amount of effort I put into my performance.	1	2	3	4	5
11. I gave up trying to get what I want out of my performance.	1	2	3	4	5
12. I stopped trying to perform my best.	1	2	3	4	5
13. I blamed myself for the situation.	1	2	3	4	5
14. I criticized or lectured myself.	1	2	3	4	5
15. I decided I was at fault for my performance.	1	2	3	4	5
16. I took responsibility for what had happened.	1	2	3	4	5
17. I made a plan of action.	1	2	3	4	5

18. I thought hard about what steps to take to manage this situation.	1	2	3	4	5
19. I thought about how I could best handle my performance.	1	2	3	4	5
20. I tried to think about a plan about what to do.	1	2	3	4	5
21. I dealt only with my performance difficulties, even if I had to forget other things a little.	1	2	3	4	5
22. I didn't let myself think about anything except my performance.	1	2	3	4	5
23. I stopped doing other things in order to concentrate on my performance.	1	2	3	4	5
24. I tried hard not to let other things get in my way of dealing with my performance.	1	2	3	4	5
25. I felt a lot of upset feelings, and I showed these feelings a lot.	1	2	3	4	5
26. I got upset and let my feelings out.	1	2	3	4	5
27. I lost my cool and got upset.	1	2	3	4	5
28. I let my negative feelings out.	1	2	3	4	5
29. I kidded around about my performance.	1	2	3	4	5
30. I made fun of my performance.	1	2	3	4	5
31. I made jokes about my performance.	1	2	3	4	5
32. I laughed about my performance.	1	2	3	4	5
33. I tried to increase the quality of my performance.	1	2	3	4	5
34. I put more effort into my play.	1	2	3	4	5
35. I tried to improve my effort.	1	2	3	4	5
36. I worked harder.	1	2	3	4	5
37. I daydreamed about a better performance.	1	2	3	4	5

38. I had fantasies or wishes about how things might turn out.	1	2	3	4	5
39. I wished the situation would go away or somehow be over.	1	2	3	4	5
40. I wished I could change what was happening or had happened.	1	2	3	4	5
41. I tried real hard to do something about my performance.	1	2	3	4	5
42. I did what had to be done, one step at a time.	1	2	3	4	5
43. I took direct action to overcome the performance challenge.	1	2	3	4	5
44. I tried different things to improve.	1	2	3	4	5
45. I acted as though I was not having performance difficulties.	1	2	3	4	5
46. I didn't believe I was performing like I was.	1	2	3	4	5
47. I pretended it was not happening or hadn't really happened.	1	2	3	4	5
48. I told myself, "This performance isn't real."	1	2	3	4	5

**APPENDIX E**

Directions: Listed below are a variety of rituals athletes may use before or during games (competitions). For each ritual you use, place an "x" in the space given.

**A. Clothing and Appearance**

1. Check appearance in mirror \_\_\_\_\_
2. Good luck markings on shoes \_\_\_\_\_
3. Dressing well to feel better prepared \_\_\_\_\_
4. Dressing sloppily to feel better prepared \_\_\_\_\_
5. Wear socks inside out for luck \_\_\_\_\_
6. Haircut on game/meet day \_\_\_\_\_
7. No shaving on game/meet day \_\_\_\_\_
8. Take ice bath morning of game \_\_\_\_\_
9. Face painting (e.g., black under eyes) \_\_\_\_\_
10. Get tattoo before season \_\_\_\_\_
11. Carve number in flesh \_\_\_\_\_
12. Eat same pre-game/meet meal on game/meet day \_\_\_\_\_
13. Tape shoes identically before game/meet \_\_\_\_\_
14. Wear same clothing under pads/uniform \_\_\_\_\_
15. No socks under spikes/shoes \_\_\_\_\_

**B. Fetish**

1. Have lucky item of clothing \_\_\_\_\_
2. Team mascots help cause \_\_\_\_\_
3. Wearing lucky charm on game/meet days \_\_\_\_\_
4. Wearing lucky charm so that it can be seen \_\_\_\_\_
5. Wearing lucky charm so that it can't be seen \_\_\_\_\_
6. Kiss/Touch lucky charm before game/race \_\_\_\_\_

**C. Pre-game/meet**

1. Taping body, even if not injured \_\_\_\_\_
2. Music during warm-up \_\_\_\_\_
3. Eat snacks to energize before contest \_\_\_\_\_

4. Need silence/seclusion before game/meet \_\_\_\_\_
5. Same trainer does taping job \_\_\_\_\_
6. Warm-up using same routine \_\_\_\_\_
7. Engage in sexual activity prior to game \_\_\_\_\_
8. Abstain from sexual activity prior to game \_\_\_\_\_

D. Game/Meet

1. Act as cheerleader \_\_\_\_\_
2. Slap hand of scorer \_\_\_\_\_
3. Use same routine during play/match \_\_\_\_\_
4. Gum chewing \_\_\_\_\_

E. Team Rituals

1. Stacking hands/Team huddle \_\_\_\_\_
2. Team cheer \_\_\_\_\_
3. Feel unprepared if no pep talk \_\_\_\_\_
4. Pep talk important for good performance \_\_\_\_\_

F. Prayer

1. Pray for success before each game/meet \_\_\_\_\_
2. Afraid luck will run out if no prayer \_\_\_\_\_
3. Team has group prayer \_\_\_\_\_
4. Important for team to pray together \_\_\_\_\_

G. Coach

1. Coach is superstitious \_\_\_\_\_
2. Coach takes lucky charm to game \_\_\_\_\_
3. Coach encourages prayer/meditation \_\_\_\_\_

### APPENDIX F

Directions: Carefully read the following statements and circle the response that best indicates how often each statement applies to you.

1. When I have a problem, I talk to God about it and together we decide what it means.  

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)
  
2. Rather than trying to come up with the right solution to a problem, I let God decide how to deal with it.  

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)
  
3. When faced with trouble, I deal with my feelings without God's help.  

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)
  
4. When a situation makes me anxious, I wait for God to take those feelings away.  

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)
  
5. Together, God and I put my plans into action.  

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)
  
6. When it comes to deciding how to solve a problem, God and I work together as partners.  

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)
  
7. I act to solve my problems without God's help.  

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)
  
8. When I have difficulty, I decide what it means by myself without help from God.  

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)
  
9. I don't spend much time thinking about troubles I've had; God makes sense of them for me.  

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)

10. When considering a difficult situation, God and I work together to think of possible solutions.

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)

11. When a troublesome issue arises, I leave it up to God to decide what it means for me.

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)

12. When thinking about a difficulty, I try to come up with possible solutions without God's help.

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)

13. After solving a problem, I work with God to make sense of it.

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)

14. When deciding on a solution, I make a choice independent of God's input.

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)

15. In carrying out the solutions to my problems, I wait for God to take control and know somehow He'll work it out.

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)

16. I do not think about different solutions to my problems because God provides them for me.

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)

17. After I've gone through a rough time, I try to make sense of it without relying on God.

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)

18. When I feel nervous or anxious about a problem, I work together with God to find a way to relieve my worries.

NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
(1)	(2)	(3)	(4)	(5)



### APPENDIX G

1. List three strategies that you have used in the past in order to decrease anxiety prior to or during an athletic event. Underneath each strategy, indicate how helpful you think the strategy was and how frequently you use that strategy.

Strategy 1: \_\_\_\_\_

How helpful do you think this strategy is/was in reducing anxiety prior to or during an athletic competition?

1 = not at all helpful

2 = a little helpful

3 = somewhat helpful

4 = very helpful

5 = extremely helpful

How often do you use this strategy prior to/during an athletic competition in order to reduce anxiety?

1 = never

2 = rarely

3 = sometimes

4 = often

5 = almost every competition

Strategy 2: \_\_\_\_\_

How helpful do you think this strategy is/was in reducing anxiety prior to or during an athletic competition?

1 = not at all helpful

2 = a little helpful

3 = somewhat helpful

4 = very helpful

5 = extremely helpful

How often do you use this strategy prior to/during an athletic competition in order to reduce anxiety?

1 = never

2 = rarely

3 = sometimes

4 = often

5 = almost every competition

Strategy 3: \_\_\_\_\_

How helpful do you think this strategy is/was in reducing anxiety prior to or during an athletic competition?

1 = not at all helpful

2 = a little helpful

3 = somewhat helpful

4 = very helpful

5 = extremely helpful

How often do you use this strategy prior to/during an athletic competition in order to reduce anxiety?

1 = never

2 = rarely

3 = sometimes

4 = often

5 = almost every competition

2. Which of the following statements is most true for you?

\_\_\_\_\_ I almost always draw upon my religious/spiritual beliefs to help deal with anxiety prior to or during an athletic competition.

\_\_\_\_\_ I often draw upon my religious/spiritual beliefs to help deal with anxiety prior to or during an athletic competition.

\_\_\_\_\_ I sometimes draw upon my religious/spiritual beliefs to help deal with anxiety prior to or during an athletic competition

\_\_\_\_\_ I rarely draw upon my religious/spiritual beliefs to help deal with anxiety prior to or during an athletic competition

\_\_\_\_\_ I never draw upon my religious/spiritual beliefs to help deal with anxiety prior to or during an athletic competition.

3. In general, how confident are you about your athletic abilities?

1 = not at all confident

2 = a little confident

3 = somewhat confident

4 = very confident

5 = extremely confident

4. How frequently do you use relaxation strategies to cope with anxiety prior to or during athletic competition?

1 = never

2 = rarely

3 = sometimes

4 = often

5 = almost every competition

## APPENDIX H

Dear Participant:

We are conducting a study about competitive anxiety (i.e., anxiety about athletic competition). We are especially interested in learning what type of religious and nonreligious coping strategies athletes use, and how each of these strategies relate to anxiety. We hope that the information learned from this study can be used in the future to help athletes who experience distress related to competitive anxiety. All student athletes at the University of Dayton have received this packet. You are not required to participate; this study is completely voluntary. However, if you fully complete and return this packet, the athletic department will credit you with one athletic study hour. In addition, all athletes who are currently enrolled in Psychology 101 will receive one experimental credit for participation. Furthermore, the team that has the highest return rate will be rewarded with a pizza party. Finally, sometime during the 2006-07 academic year, student athletes who participate will have the opportunity to attend a free workshop on how to cope with competitive anxiety.

Enclosed are 1) an informed consent form and 2) a questionnaire that will take approximately 30 minutes to complete. Please read and sign the informed consent form prior to completing the questionnaire. A signature on the informed consent form indicates your willingness to participate. Your answers will remain strictly confidential and will not be shared with coaches or anyone else outside of the research team. Please do not place your name anywhere on the questionnaire. Each questionnaire has been given a research code, which appears in the upper right-hand corner. If you experience significant competitive anxiety and

would like to receive help, you might consider contacting the University Counseling Center at 229-3141 to schedule a free and confidential assessment.

Please return your signed informed consent form and your completed survey in the enclosed pre-addressed envelope and return through campus mail. If you have any questions, please feel free to contact the researchers listed below. Thank you for your participation in this project, and best of luck on a great season!

Best regards,

---

James M. Bennett, B.S.  
Psychology Masters Student  
Psychology Department  
University of Dayton  
(330)518-3061  
bennetjm@notes.udayton.edu

---

Mark S. Rye, Ph.D  
Associate Professor  
Psychology Department  
University of Dayton  
(937)229-2160  
Mark.Rye@udayton.edu

## APPENDIX I

<b>Project Title:</b>	Coping with Competitive Anxiety	
<b>Investigators:</b>	James M. Bennett, Psychology Masters Student Mark S. Rye, Associate Professor (Faculty Sponsor)	
<b>Description of Study:</b>	This study will involve completing self-report questionnaires regarding demographics, your athletic participation, competitive anxiety, religiosity, and religious and non-religious coping strategies. After completing the questionnaire, you will be instructed to mail your questionnaires in the enclosed preaddressed envelope to the researchers via campus mail. All athletes who return their completed questionnaires within two weeks will receive one athletic study hour through the athletic department. In addition, students who are currently enrolled in Psychology 101 will receive one experimental credit. Furthermore, the team with the highest participation rate will receive a pizza party. Finally, participants will have an opportunity to attend a workshop next fall that summarizes the research results and provides suggestions for how to cope with competitive anxiety.	
<b>Adverse Effects of Study:</b>	Minimal discomfort is anticipated. However, participants may experience some emotional distress or anxiety while completing these questionnaires because some of the questions ask about stressful situations and may conjure up negative memories or images. If you are experiencing distress and wish to obtain assistance, please contact the UD Counseling Center (229-3141) or other mental health facility.	
<b>Duration of Study:</b>	It will take approximately 30 minutes to complete the questionnaires.	
<b>Confidentiality of Data:</b>	All participants' responses will remain confidential and will not be shared with their coaches or anyone outside of the research team. Confidentiality will be maintained by assigning each participant a code number. Names or other identifying information will not be placed on the surveys. A list of names and code numbers will be kept in a secure and separate location from the study surveys.	
<b>Contact Person:</b>	Researchers: James M. Bennett, B.S. Psychology Masters Student (330) 518-3061 bennetjm@notes.udayton.edu	Mark S. Rye, Ph.D. Associate Professor (937) 229-2160 Mark.Rye@udayton.edu

Ethics Chair:  
Charles Kimble, Ph.D  
SJ 319  
(937) 229-2167  
Charles.Kimble@udayton.edu

**Consent to  
Participate:**

I have voluntarily decided to participate in this study. The investigator named above has adequately answered any and all questions I have about this study, the procedures involved, and my participation. I understand that the investigator named above will be available to answer any questions about research procedures throughout this study. I also understand that I may voluntarily terminate my participation in this study at any time. I also understand that the investigator named above may terminate my participation in this study if he feels this to be in my best interest. In addition, I certify that I am 18 (eighteen) years of age or older.

---

Signature of Student	Student's Name (printed)	Date
----------------------	--------------------------	------

---

Signature of Witness	Date
----------------------	------

## APPENDIX J

Dear University of Dayton Student Athlete:

You have received this e-mail as a reminder of the opportunity to participate in a research study here at the university. As a student athlete, you should have been given a questionnaire packet that asks about competitive anxiety (i.e., anxiety about athletic competition) by Julie Steinke of the athletic department. These questionnaires take approximately 30 minutes to complete.

For your participation in this study, the athletic department will credit you with one athletic study hour. Furthermore, participants who are enrolled in Psychology 101 at the time of the study will receive one experimental credit. Finally, the team with the highest percentage of return will receive a free pizza party (a drawing will be held in the event of a tie amongst teams).

Please return your completed packet in the provided envelope to research chairperson Dr. Mark Rye via campus mail by Friday, April 28. If you have lost or misplaced your packet, please e-mail James Bennett for a copy via e-mail attachment. Please feel free to contact one of the researchers below with any further questions or concerns. Thank you for your time and best of luck in your respective seasons!

Best regards,

James M. Bennett  
Psychology Masters Student  
bennetjm@notes.udayton.edu

Mark S. Rye, Ph.D.  
Associate Professor  
Mark.Rye@udayton.edu

## **APPENDIX K**

### **Information about the Study**

You were asked to complete a variety of questionnaires regarding competitive anxiety, religiosity, and religious and non-religious coping strategies. Competitive anxiety has been defined as “an individual’s tendency to perceive competitive situations as threatening and to respond to these situations with state anxiety” (Martens et al., 1990, p. 11). Given that competitive anxiety relates to a variety of problems for athletes, researchers have tried to identify effective coping strategies. Athletes report using a myriad of strategies to cope with competitive anxiety. However, one type of coping that has often been overlooked in the research is religious coping, even though religion has been found to play a significant role in the lives of athletes (e.g., Balague, 1999).

The research that you participated in was specifically designed to determine (1) the extent that athletes use religious strategies to cope with competitive anxiety, (2) how different religious coping strategies relate to competitive anxiety, and (3) if religious coping predicts competitive anxiety beyond non-religious coping strategies. It was hypothesized that that (1) athletes utilize religious strategies extensively in coping with competitive anxiety, (2) competitive anxiety will be negatively correlated with collaborative and self-deferring styles and unrelated to the deferring approach, and (3) religious coping will predict competitive anxiety beyond non-religious coping.

If you would like to learn more about competitive anxiety, you may read the two articles listed below or feel free to contact one of the researchers.



### References:

Martens, R., Vealey, R. S., & Burton, D. (1990). *Competitive anxiety in sport*. Champaign, IL: Human Kinetic Publishers.

Pargament, K. I., Kennell, J., Hathaway, W., Grevengoed, N., Newman, J., & Jones, W. (1988). Religion and the problem-solving process: Three styles of coping. *Journal for the Scientific Study of Religion*, 27, 90-104.

### Assurance of Privacy

As a reminder, your responses are strictly confidential. Your answers will be scored and organized according to the research code at the top of your questionnaire. We are interested in your responses as a group.

### Contact Information

Thank you for your participation in this study. During the 2006-07 academic year, announcements will be made for a free workshop that you are eligible to attend about coping with competitive anxiety. If you have any additional questions, please feel free to contact the researchers listed below. You may also contact the chair of the Research Review and Ethics Committee, Dr. Charles Kimble, in SJ 319, via e-mail at [Charles.Kimble@udayton.edu](mailto:Charles.Kimble@udayton.edu), or by phone at (937) 229-2167. If you are experiencing competitive anxiety or any emotional distress as a result of the questionnaire, you may wish to contact a local mental health agency.

University of Dayton Counseling Center	229-3141
--	----------

Eastway Behavioral Healthcare	832-5500
-------------------------------	----------

Thank you,

---

James M. Bennett, B.S.  
Psychology Masters Student  
Psychology Department  
University of Dayton  
(330)518-3061  
bennetjm@notes.udayton.edu

---

Mark S. Rye, Ph.D.  
Associate Professor  
Psychology Department  
University of Dayton  
(937)229-2160  
Mark.Rye@udayton.edu

R002593093