

THE RELATIONSHIP BETWEEN PERCEIVED OCCUPATIONAL STRESS AND SOCIAL
SUPPORT AMONG COLLEGE COACHES

A THESIS SUBMITTED TO THE GRADUATE SCHOOL
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE

MASTER OF SCIENCE IN PHYSICAL EDUCATION, SPORT, AND EXERCISE SCIENCE

SPECIALIZATION IN SPORT AND EXERCISE PSYCHOLOGY

BY

KURTIS KIRKPATRICK

ADVISER: DR. LAWRENCE JUDGE

BALL STATE UNIVERSITY

MUNCIE, INDIANA

JULY 2011

Acknowledgments

I would like to thank the remarkable contribution and guidance from my Thesis Committee Members: Dr Lawrence Judge, Dr Lindsey Blom, and Dr Jocelyn Holden. Without all of your help, this would have been a much more difficult undertaking. I greatly appreciate all your time, effort, input, and expertise. I will never forget the amount of caring and support you provided me throughout this process.

I would also like to thank my family and friends, to whom I often turned in times of frustration, which was always met with caring and empathy.

To all who have helped throughout this process, I thank you greatly.

TABLE OF CONTENTS

	PAGE
ABSTRACT	5
CHAPTERS	
I. INTRODUCTION	6
Purpose of the Study	9
Research Questions	10
Hypotheses	10
Definition of Terms	11
Delimitations	13
Limitations	13
Assumptions	14
Significance of the Study	14
II. REVIEW OF LITERATURE	16
Introduction	16
Stress	16
Measuring Stress	18
Occupational Stress	20
Occupational Stress	20
Coaches' Occupational Stress	22
Social Support	24
Measuring Social Support	26
Stress and Social Support	30
Stress-Support Models	31
Stress Buffering Model	31
Stress Prevention Model	35
Stress and Social Support Among Coaches	39
Years of Experience	40
Competition Level	44
Conclusions	45
III. METHODS	47
Participants	47
Instruments	48
Demographics	48
Perceived Occupational Stress	49
Perceived Social Support	51
Procedures	53
Design/Analyses	54
IV. RESULTS	56
Hypothesis 1	57
Hypothesis 2	58
V. DISCUSSION	59
Introduction	59
Research Question 1	59

Research Question 2	67
Limitations	72
Future Research Implications	77
Conclusions	78
REFERENCES	80
TABLES	
1: Principal Axis Factoring with Promax Oblique Rotation...	90
2: Principal Axis Factoring with Promax Oblique Rotation...	92
3: Principal Axis Factoring with Promax Oblique Rotation...	93
4: Frequency Statistics of Specific Demographic Information	94
5: Means and Standard Deviations of ASI Subscales and PRQ	96
6: Pearson's Correlation Matrix of ASI subscales and PRQ	97
7: Hierarchical Regression Analysis for Task-Based Stress...	98
8: Hierarchical Regression Analysis for Role-Based Stress...	99
9: Hierarchical Regression Analysis for Conflict-Mediating...	100
APPENDICES	
A: Demographics Questionnaire	101
B: IRB Approval Document	103
C: Recruitment Email 1	104
D: Recruitment Email 2	105
E: Consent Document	106

ABSTRACT

THESIS: THE RELATIONSHIP BETWEEN PERCEIVED OCCUPATIONAL STRESS AND SOCIAL SUPPORT AMONG COLLEGE COACHES

STUDENT: KURTIS KIRKPATRICK

DEGREE: MASTER OF SCIENCE

COLLEGE: PHYSICAL EDUCATION, SPORT, AND EXERCISE SCIENCE

DATE: JULY, 2011

PAGES: 106

The current study aimed to assess the relationship between perceived occupational stress and social support among collegiate coaches, and if years of coaching experience and competition level (NCAA Division I, II, III) add to the explanation of occupational stress above and beyond social support. The study utilized the Administrative Stress Index (Koch, Gmelch, Tung, & Swent, 1982) in order to measure perceived occupational stress and the Personal Resource Questionnaire: Part 2 (Brandt & Weinert, 1981) to measure perceived social support. Results suggested that task-based stress is significantly related to perceived social support, but years of experience and competition level do not add to the occupational stress explanation. This study provides the field of sport and exercise psychology and the coaching profession with more information about work-related stress in coaches; it also supports previous literature on the stress-support relationship.

CHAPTER I

Introduction

A substantial amount of research has been performed to attempt to understand the relationship between social support and stress (Uchino & Birmingham, 2011). Overall, research supports the proposition that social support, and having access to resources that provide a sense of interpersonal connectedness, may help alleviate some amount of stress for individuals (Barrera, 2000; Cohen & Wills, 1985; Pidd, 2004). Despite these research findings, very little research has been performed on the stress-support relationship among sport coaches, in spite of knowing that this population experiences a great deal of stress (Drake & Herbert, 2002; Kelley, Eklund, & Ritter-Taylor, 1999; Lackey, 1986).

Stressful events can have a multitude of negative effects on an individual from physical (Chandola, Brunner, & Marmot, 2006; Lepore, 1995) to psychological (Lox, Martin Ginis, & Petruzzello, 2006; Selye, 1974) to emotional damage (Bolger, DeLongis, Kessler, & Schilling, 1989; Cohen & Wills, 1985). However, there are potentially positive outcomes from stress, such as motivation and preparatory behaviors (Lox, et al., 2006; Selye, 1974) that can be beneficial to performance.

Often how an individual perceives the stress is subjective and is a determining factor in the actual outcome – whether positive or negative (Kelley, 1999; Roth, Wiebe, Fillingim, & Shay, 1989).

Stress research has also been performed in the realm of the workplace (Abramis, 1994; Jimmieson, McKimmie, Hannam, & Gallagher, 2010). Most workplace research is primarily focused on the potential of stress resulting in performance deficits or increases (Gilboa, Shirom, Fried, & Cooper, 2008). Research on stress in the workplace provides evidence that high levels of negative stress can lead to performance deficits (Abramis, 1994; Gilboa, et al., 2008), physical health issues (Chandola, et al., 2006), and psychological issues (Stanfeld & Candy, 2006). These effects are also found in workplace stress research focused on a specific population, sport coaches (Drake & Herbert, 2002; Kelley & Baghurst, 2009; Lackey, 1986).

Social support has been heavily researched as a potential coping mechanism for individuals experiencing stress (Cohen & Wills, 1985; Gore, 1981; Uchino & Birmingham, 2011). Cohen (1988) provides support for the theory that social support can provide a buffer for an individual's stress experience, resulting in lower levels of stress. A meta-analysis by Thorsteinsson and James (1999) show that this is also supported by well-controlled laboratory experiments, investigating reactivity (heart rate, blood pressure, skin conductance, etc.) to stress.

Research on occupational stress (Jimmieson, et al., 2010; Pidd, 2004) also provides support for the stress buffering effect of social support. Other studies

suggest that social support may actually prevent an individual from experiencing stress (Russell & Cutrona, 1991; Willis & Cleary, 1996). Both potential pathways are supported through empirical research. Uchino and Birmingham (2010) concluded that despite a lack of evidence for one being more impactful than the other, a variety of empirical studies, with various populations and in various settings, have provided significant evidence that social support can either prevent, buffer, or both, the impact that stress may have on an individual.

Few studies have been identified, however, that suggest social support may be related to stress among coaches, but some evidence exists (Kelley, 1994; Kelley & Gill, 1993). Kelley (1994) and Kelley and Gill (1993) suggest that there is a relationship between coaches' social support levels and their experience of stress. More specifically, the researchers found that coaches who experienced less social support also experienced more stress.

Caccese and Mayerberg (1984) present evidence that years of experience is a variable that may impact the experience of and ability to cope with stress amongst coaches. Similarly, Brewer and Shapard (2004) performed meta-analytic analyses and found significant relationships between experience and burnout. Others (Klassen & Chiu, 2010; Ullrich, 2009) have suggested that experience is significantly related to teacher burnout. However, other research (Vealey, Udry, Zimmerman, & Soliday, 1992) suggests there is not a significant relationship in sport coaches.

Similarly to experience, research suggests a non-significant relationship between stress and competition level among coaches (Kelley et al., 1999; Vealey et

al., 1992). Though little evidence can be found that empirically suggests that competition level impacts coaches' stress, there are indirect connections that can be drawn from other research. Academic literature shows that competition level is related to charitable philanthropic giving (Zhang, Zhu, Yue, & Zhu, 2010) and hostile aggressive actions (Coulomb & Pfister, 1998). Despite the mixed results, competition level logically seems like a potential influential factor on occupational stress when one considers the additional pressure found at marquee universities (higher levels of visibility, more funds from boosters, increased prestige of conferences, etc.).

The research on social support and stress is fairly widespread; however research specifically assessing these constructs in the coaching profession is rare. Research has suggested that the coaching profession is very stressful (Lackey, 1986; Kelley et al., 1999). Therefore, research with this population may provide additional information relating to coaches' experience of stress. Similarly, few studies assess the relationship between social support, stress, years of experience and competition level, and those that exist need replication.

Purpose of the Study

Research investigating perceived stress among coaches has provided insight to the way in which coaches may experience stress related to their job, as this population faces a wide variety of stressors on a daily basis (Kelley & Baghurst, 2009; Kelley et al., 1999; Lackey, 1986). Additionally, much research has been performed to provide evidence that social support may reduce or prevent an

individual from experiencing stressors (Barrera, 2000; Uchino & Birmingham, 2011). However, very little empirical research can be found assessing the stress-support relationship among coaches. Some studies that have assessed this relationship were a single subject case study (Levy, Nicholls, Marchant, & Polman, 2009) and two studies that included social support among other variables (Kelley, 1994; Kelley & Gill, 1993). Therefore, the current study set out to assess if the negative relationship between social support and stress reported by other occupations (Barrera, 2000; Uchino, 2004; Uchino & Birmingham, 2011) is similar among the specific population of collegiate sport coaches and to assess whether years of coaching experience and competition level explain occupational stress above and beyond social support.

Research Questions

1. What are the relationships between social support and four factors of stress (i.e. role-based stress, task-based stress, boundary-spanning stress, conflict-mediating stress) for college coaches?
2. Do years of head coaching experience, competition level (as defined by NCAA Division), and perceived social support account for significantly more variance of the perceived occupational stressor subscales than perceived social support, alone?

Hypotheses

1. Social support scores from the Personal Resource Questionnaire (PRQ): Part 2 will be negatively correlated with all of the four factors of stress from the

Administrative Stress Inventory (ASI; i.e. role-based stress, task-based stress, boundary-spanning stress, and conflict-mediating stress).

2. Yes, years of head coaching experience, competition level, and perceived social support will account for significantly more variance when predicting stress than perceived social support, alone.

Definition of Terms

Boundary-Spanning Stress – stress that arises from relating to the school and external environment; e.g., “complying with state, federal, and organizational rules and policies” (Koch, Gmelch, Tung, & Swent, 1982)

Coaches’ Occupational Stress - workplace related, environmental conditions or events that may have a deleterious effect on coaches’ health and wellbeing; measured by an adjusted ASI (Beehr, Bowling, & Bennett, 2010)

Competition Level – NCAA Division I, II, or III ranking is based on the number of scholarships awarded for each sport by the college; measured by participant report.

Conflict-Mediating Stress – stress that arises from resolving conflict between the program, members, and outside individuals or organizations; e.g., “handling athlete discipline problems” (Koch et al., 1982)

Occupational Stress – workplace related, environmental conditions or events that may have a deleterious effect on employee’s health and wellbeing (Beehr, Bowling, & Bennett, 2010)

Public University – a university that is primarily funded by the government (state or national); measured by participant report

Private University – a university that is not funded by the government; measured by participant report

Role-Based Stress – stress that originates from responsibilities related to the coaches' position or role-set interactions, beliefs, and attitudes about his or her role in the program; e.g. "feeling that I have too little authority to carry out responsibilities assigned to me" (Koch et al., 1982)

Social Support – the functions that are provided by social relationships; measured by the PRQ: Part 2 (Uchino & Birmingham, 2011)

Stress – a discrepancy between the perceived demands of a situation and an individual's perceived ability to cope with and adapt to those demands; measured by an adjusted ASI (Lazarus, 1990)

Stress Buffering Model – a model of the support-stress relationship, suggesting that support can decrease negative effects of stress on mental and physical health (Cohen & Herbert, 1996)

Stress Prevention Model – a model of the support-stress relationship suggesting that support can prevent individuals from experiencing some amount of stress (Uchino & Birmingham, 2011)

Task-Based Stress – stress that arises from the coaches' day-to-day responsibilities; e.g., "feeling that meetings take up too much time" (Koch et al., 1982)

Years of coaching experience – If participant is a head coach, the years they have been a head coach at any program and if participant is a paid assistant coach, the years of paid coaching experience they have had; measured by participant self-report

Delimitations

1. Only male and female track and field collegiate coaches were potential participants.
2. Only coaches from NCAA universities were potential participants.

Limitations

1. The study only included track and field coaches; therefore, the results and conclusions may not be generalizable to coaches in other sports.
2. The Administrative Stress Index (Koch et al., 1982) was designed to assess school administrators' occupational stress; therefore, the questions may not perfectly pertain to collegiate coaches' occupational stressors. In order to minimize this, the researcher made slight wording adjustments (e.g., changing "student" to "player") for 4 items to make them more relevant to the coaching profession.
3. The assessments used in the study measure perceived levels of occupational stressors and social support, thus they may not reflect the actual levels of stress or social support experienced by the participants.

4. The database of email addresses for the coaches used in this study was assembled based on the 2008-2009 track and field season, therefore some coaches may have changed jobs or retired.
5. The current study did not account for inter-division differences in competition level (sub divisions within NCAA Divisions I, II, and III).

Assumptions

1. It is assumed that the participants were truthful in their responses.
2. It is assumed that all questions were fully understood by the participants.

Significance of the Study

Due to the lack of empirical research assessing the relationship between perceived social support and stressors amongst college coaches, the current study seeks to understand this relationship among a specific population - collegiate sport coaches. Though other studies (Kelley, 1994; Kelley & Gill, 1993) have shown that social support, combined with other variables in one model, is significantly related to occupational stress with this population, there is a lack of research assessing only social support's impact on stress. Understanding of the stress-support relationship will be expanded if social support alone significantly predicts stress.

Also, this study may provide information about whether social support, competitive level, and experience account for significantly more variance in perceived stressors than social support alone. This may be impactful. If coaches' that are more experienced or at a lower competitive level experience less stress, there may be ways in which they could help others reduce their experience of stress.

Similarly, if individuals who work with coaches know that certain individuals are at higher risk for stress than others, they may be able to guide their work to be the most beneficial.

The information gained from the current study may also spark future research aimed at better understanding this relationship as it applies to the collegiate sport population and others. Future research may aim to untangle these two constructs and assess whether competition level or experience may be more impactful as they pertain to perceived stress. Also, researchers may set out to support the current studies' findings with various other populations and with other situational variables. This study provides the field of sport and exercise psychology with empirical data about the perceived stress experienced by coaches, and its relationship with perceived social support. This information may be used to better understand the demands of the collegiate coaching profession, as well as understand the way in which coaching experience and competition level may play a role in this relationship.

CHAPTER II

Review of Literature

Introduction

The following sections review literature that examines topics of interest in the current study. Stress is a main topic of interest in the current study, within this topic are the subheadings “measuring stress” and “occupational stress”. The next heading for a topic of interest is social support. Within this topic is the subheading “measuring social support”. The current study assessed the relationship of stress and social support, therefore the next topic section is stress and social support; within which are the subheadings “stress-support models” and “stress and social support among coaches”. The next two main headings cover the topics of years of experience and competition level. Lastly, the review of literature ends with a section of conclusions.

Stress

There are numerous definitions of the term “stress” throughout academic literature, however one of the most common is based on an interaction of a specific event and an individual’s interpretation of that event (Lazarus, 1990). Stress is best

understood as a discrepancy between the perceived demands of a situation and an individual's perceived ability to cope with and adapt to those demands (Lazarus, 1990). Therefore, only when the demands of a situation outweigh one's resources to handle the situation, does the perception of negative stress result (Lazarus, 1990). The greater the mismatch between perceived demands and perceived resources, the greater the resulting physiological, psychological, or emotional response.

Stress is often studied as it relates to either physical (e.g., Chandola, Brunner, & Marmot, 2006, Lepore, 1995) or psychological issues (e.g., Lox, Martin Ginis, & Petruzzello, 2006; Stanfeld & Candy, 2006). Chandola, et al., (2006) found that individuals who had significantly higher levels of stress were significantly more likely to have a physical illness, metabolic syndrome, which is a cluster of risk factors that increase the risk of heart disease and type 2 diabetes. Similarly, Lepore (1995) found that participants' stress mediated the main effect of social support on blood pressure reactivity. Stanfeld and Candy (2006) found that job strains were significantly related to mental disorders, such as generalized anxiety disorder and depression.

Stress has been widely studied, in a variety of different contexts, from daily hassles (Russell & Cutrona, 1991) and occupational (Burton et al., 2006; Chandola, et al., 2006; Stern & Cox, 1993), to stress specifically experienced by coaches (Drake & Herbert, 2002; Frey, 2007; Kelley & Baghurst, 2009). Due to this wide range of research, there is a general consensus that individuals can experience stress in two primary, different ways. First, an individual can experience distress, which is a

harmful form of stress that often leads to physical and emotional damage (Lox, et al., 2006; Selye, 1974). On the other hand, one may experience eustress, which is often considered the positive experience of stress. This is when an individual feels challenged by the stressful situation, which can lead to being energized and motivated to learn new skills and master tasks (Lox, et al., 2006; Selye, 1974). Studies have suggested that stress can increase physical symptoms and diseases (Chandola, et al., 2006; Lepore, 1995; Lox et al., 2006) and psychological dysfunction (Lox, et al., 2006; Stanfeld & Candy, 2006).

Measuring Stress

Measuring stress has a long, divided history among physical, psychological, and epidemiological sciences (Sandler, Braver, & Gensheimer, 2000). However, there is a recent consensus regarding appropriate ways to study the construct. First, stress is often studied in an etiological sense (related to the origin of the stress; Norman, DeVries, Cacioppo, & Berntson, 2011; Sandler et al., 2000). Measurements of the etiology of stress have primarily focused on either change or undesirable events as the sources of stress. The second focus, which is primarily the focus of most recent research, is what Sandler et al., (2000) called the ecology of stressful experience, or how stressful experiences are embedded in individuals' lives.

The concept that stress results from change is based on the idea that change disrupts the steady state which causes a person to readjust to bring herself to a state of homeostasis (Sandler et al., 2000). Individual experiences that require more readjustment use more of the person's resources; therefore, the individual may be

more vulnerable to physical, psychological, and emotional illness. Stress research using measures that assessed only change as the etiology of stress, however, found that there was a significant amount of variance in stress unaccounted for by change, alone (Sandler, et al., 2000).

Measures of stress developed into assessing individual events as the primary etiology of stressful experiences. These measures were able to account for both events of change and other life events that did not incorporate change (Sandler et al., 2000). Early measures of life-events focused on a model of undesirability. The early life-event measures did not measure potentially overall positive events, which may have negative components. Theorists first thought that stressful experiences resulted in a threat to a person's physical or emotional wellbeing (Sandler et al., 2000). This can even be held true for desirable events, which may have negative components deemed as stressful. However, initial research on the potentially stressful experiences of positive events were unsuccessful (Sandler et al., 2000), primarily because this research still focused on distress, the negative experience of stress. Today, measures have evolved to be able to assess positive and negative events' impact on distress (negative) and eustress (positive) stressful experiences.

Measures concerned with the ecology of stressful experience are primarily used in recent research on stress (Norman et al., 2011; Sandler et al., 2000). Often, these measures observe this through stressful life events, but often with an emphasis on understanding when and where stress occurs, how long it can last, how frequent stressful experiences are, and how they relate to a person's overall pattern

of person-environment relations (Sandler et al., 2000). Other dimensions, such as the ecology of life stress, including their size, frequency, and chronicity, are used to describe the ecology of stress, as well. Measures of this style are very important to the study of stress, as they provide a much clearer picture of how stress can impact an individual. Therefore, this information may be used to try and implement interventions, through which reduction or prevention of stressful experiences may occur.

Stressful experiences are related to negative results such as physical (Chandola et al., 2006; Lepore, 1995), and psychological (Lox et al., 2006; Stanfeld & Candy, 2006) issues. On the other hand, certain stressful experiences are also connected to positive results of stress, such as renewed interest or motivation (Lox et al., 2006; Selye, 1974). Due to the wide range of potential results of stressful experiences (Lazarus, 1990; Lepore, 1995; Selye, 1974) specific measurements that assess all or even most of the potential inputs (stressful events) and outputs (positive or negative results) are very difficult to design (Sandler et al., 2000). Therefore, multiple measurements that aim to assess specific aspects and results of the stressful experience are perhaps, the most appropriate (Sandler et al., 2000).

Occupational Stress

Occupational Stress is often defined as workplace related, involving environmental conditions or events that may have a deleterious effect on an employee's health and wellbeing (Beehr, Bowling, & Bennett, 2010). Prolonged exposure to stressors in the workplace is associated with physical illness (Chandola,

et al., 2006), psychological dysfunction (e.g., increased anxiety, Stanfeld & Candy, 2006), job dissatisfaction (Abramis, 1994), and job performance deficits (Gilboa, Shirom, Fried, & Cooper, 2008). There are many different aspects of an individual's work that can be stressful. A meta-analysis (Gilboa et al., 2008) identified seven main sources of work-related stress: role ambiguity or not understanding one's role, role conflict or an individual disliking his role, role overload or too much work needing attention, job insecurity or the feeling that one may lose her job, work-family conflict or family conflicts that result from one's work or vice versa, environmental uncertainty or the feeling of not knowing what work will entail, and situational constraints or specific job related experiences that can result in stress.

Much research on occupational stress has been focused on the effect it can have on an individual's performance. Gilboa et al., (2008) found a significant difference between positive and negative performance outcomes of stressors in their review. This difference in performance outcome was based on the individual's appraisal of an event as a threat, resulting in negative performance outcome, or a challenge, resulting in a positive performance outcome. Negative stressors' may impact job performance in a few different ways. First, when an individual perceives a demand as potentially threatening, he or she will use energy, time, and effort to cope with the stressor and the physical (e.g., increased heart rate) and psychological reactions (e.g., anxiety; Gilboa, et al., 2008). This diversion of effort may lead to performance deficits. Second, high levels of stressors are associated with involuntary physiological responses that interfere with performance (Abramis,

1994; Chandola, et al., 2006). Lastly, these high levels of stressors tend to create information overload, which can lead to narrowing of attention. This narrowed attention may lead an employee to ignore job related information and demands, thus decreasing performance.

Academic research supports the negative relationship between stress and job performance (Abramis, 1994; Gilboa et al., 2008). Though much available research has only focused on performance deficit and its relationship between role ambiguity and role conflict, Gilboa et al., (2008) provides a much clearer picture by identifying other variables (e.g., job insecurity, situational constraints, etc.) that are important. This study also provides literature that suggests ways in which negative work-related stress can impact an individual's performance. This can be important if an individual's job status depends on her performance. The coaching profession is one in which performance can be a determining factor in job status, therefore if a coach's stress level negatively impacts her performance, her stress levels may actually increase because of this decrease in performance. A cycle of increased levels of stress leading to a decrease in performance, perhaps leading to a further increase of work-related stress, may be created in this situation.

Coaches' occupational stress. For the current study, coaches' occupational stress is defined as workplace related, environmental conditions or events that may have a deleterious effect on coaches' health and wellbeing (Beehr, Bowling, & Bennett, 2010). The coaching profession involves a high level of stress (Drake & Herbert, 2002; Kelley, Eklund, & Ritter-Taylor, 1999; Lackey, 1986). Research

suggests that there are many demographic variables that can impact the experience of and the ability to cope with stress amongst coaches. For example, gender and experience (Caccese & Mayerberg, 1984), leadership style (Dale & Weinberg, 1989), and situational variables (e.g., role conflict; Capel, Sisley, & Desertrain, 1987) are examples of demographic variables that could impact the coaching experience. Research also suggests that this population may have stress that goes unnoticed by others or is not addressed. This may happen because trained coaches often appear to be relaxed and calm during very stressful situations (Kelley & Baghurst, 2009).

Along with the many stressors present during competitions (McCafferty, Gliner, & Horvath, 1978), coaches experience stressors related to other demands as well. For example, at the high school level, school principals were asked to identify the origin of pressures on their coaches (Lackey, 1986). The results found significant sources of perceived pressure were derived from trying to meet external standards of excellence, dealing with boosters, fans, and parents, coaching high visibility teams (e.g., football and basketball for males, basketball and volleyball for females), and the pressure coaches place upon themselves. These results support other research (Drake & Herbert; Frey, 2007; Kelley, et al., 1999), which suggests coaches face numerous sources of stress, both internal and external to the individual as well as to the program.

Some research assess stressful experiences while looking at a more specific construct, burnout. In a study of 307 collegiate tennis coaches, Kelley et al., (1999) found that coaches suffered from levels of burnout similar to individuals in helping

professions, such as those working in higher education (Maslach & Jackson, 1986, as cited in Kelley, et al., 1999). The authors found that perceived stress, accounting for 36% of the variance, was a significant predictor of burnout in coaches. The authors also found that coaches who had an overall sense of commitment instead of alienation, viewed challenges as opportunities instead of problems, and those who felt they have some control over their destinies were likely to appraise situations as less stressful and thus were less prone to burnout. These findings support previous research in this area (e.g., Kelley, 1994; Roth, et al., 1989).

As stated previously, some research on stress experienced by coaches has expanded beyond this construct to the examination of burnout (Kelley & Baghurst, 2009; see Caccese & Mayerberg, 1984; Dale & Weinberg, 1989; Kelley, et al., 1999;). However, this construct is a potential outcome of continual exposure to negative stress (Kelley, et al., 1999) and is not pertinent to the current study. However, some of this research can provide insight into the stressful experiences of coaches, as the studies usually assess stress as well as burnout.

Social Support

Most recent research on social support conceptualizes the construct as the functions that are provided by social relationships (Uchino & Birmingham, 2011). The functions provided are usually separated into two dimensions, perceived and received (Tardy, 1985). An individual's potential access to social support is what characterizes the perceived dimension, whereas the received dimension consists of the actual exchange or utilization of support resources (Barrera, 1986; Tardy,

1985.) Research by Cohen (1988) and Sarason and Sarason (1986) suggests that these two dimensions are not interchangeable, mainly because the perceived support dimension may offer beneficial effects even in the absence of any actually support being provided.

Research suggests that social support that may be received can be divided into four separate types of support: emotional (e.g., expressions of caring), informational (e.g., information that may be used to deal with stress or a problem causing stress), tangible (e.g., direct material aid), and belonging (e.g., having others with whom to engage in social activities) (Barrera, 2000; Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Uchino, 2004). Other researchers (Fenlason & Beehr, 1994; Swanson & Power, 2001) have utilized only a dichotomous typography of social support in which the types were emotional and instrumental. These different ways of viewing social support types are not much different. Here, instrumental support consists of informational and tangible support, whereas emotional support is similar to the emotional and belonging types of support mentioned previously.

Much research on social support has suggested that individuals who lack support are at greater risk for mental and physical health related issues (Berkman, Glass, Brissette, & Seeman, 2000; Cohen, 2004; House, Landis, & Umberson, 1988; Uchino, 2004). For example, Barrera (2000) posits that low social support is connected to higher levels of depression, life dissatisfaction, and anxiety. Research has also found that social support is linked to lower mortality rates (Cohen, 2004). Not all models of social support involve stress (e.g., direct effects model, Cohen &

Wills, 1985). However, these models are not of interest in the current study, and thus are not included in this review of literature.

Haslam, Jetten, O'Brien, and Jacobs (2004) suggest that positive effects of instrumental support may be limited to situations in which the provider and receiver of the support share a social identity. Haslam and colleagues suggest that information from members of an individual's in-group has more impact than out-group members because they share a similar social perspective, thus they seem more qualified to inform the individual. Pidd (2004) also supported this finding in the context of adopting new attitudes about alcohol use. Pidd found that social support only facilitated training transfer when the information came from a supervisor or coworker belonging to a group with which an individual identified.

Measuring Social Support

Social support measurements are widely different, mainly because throughout the support literature, definitions have also varied a great deal (Uchino, 2004). Despite recent research often flowing from the definition mentioned at the beginning of the "Social Support" section (Uchino & Birmingham, 2011), the field of social support research has a much longer history. This section will briefly cover some of this research. Primarily, social support research has focused on one or more of three aspects of social support: structural aspects of support (the social networks individuals are in), specificity of social support provided (general or specific support), and functional aspects of social support (received and perceived support; Uchino, 2004).

The structural aspects of social support, sometimes termed social integration, refer to the social networks of which an individual is a part (family, friends, workplace; Uchino, 2004). Measures of social support that assess this aspect of support often measure the extent to which an individual is integrated or involved in social networks (Uchino, 2004). Stryker and Burke (2000) suggest that individuals develop a sense of their identity through meaningful social ties and roles. This means that individuals begin to develop their sense of who they are through their social networks. This is an important part of social support. For example, a child who faces emotional abuse from her parents may begin to develop an identity of being worthless or pathetic; thus the individual will not have a strong sense of received or perceived social support from her parents (because of the abuse) or others (because she may feel she is too pathetic for people to care).

Measures of social integration assess different factors of the social networks: size, amount of contact with network members, type of relationship with network members (parent, spouse, friend), density (interconnection among network members), centrality (importance of the network to the individual), multiplex (relationships that share multiple roles), reciprocity (the degree of mutual exchange in the network), and strength of the connectedness to network members (Uchino, 2004). Though these factors may be important to social support, there is evidence that perhaps quality of function of relationships is more important than their structure (Uchino, 2004). In fact, research has suggested possible ways in which structural networks can be negative (e.g., negative feelings toward unavoidable

network members; Antonucci, Akiyama, & Lansford, 1998). Other research suggests that certain networks can promote risky behaviors, such as a child having a parent who smokes (Burg & Seeman, 1994).

After considering the structure of social support, the generality or specificity of social support is the next aspect to be addressed. In different situations, different types of support may be more beneficial than others (Uchino, 2004). This is often theorized via the matching hypothesis (Cohen & Wills, 1985; Cutrona & Russell, 1990). This hypothesis states that the effectiveness of provided social support may depend on the extent to which it meets that demands of the specific stressor (Uchino, 2004). For stressors that are controllable (e.g., searching for employment), specific support such as money or informative help is predicted to be more important, as if directly addresses factors of the stressor (Cutrona & Russell, 1990; Uchino, 2004). However, if the stressor is more of an uncontrollable nature (e.g., spousal betrayal) support such as empathy and caring or social distractions may provide more beneficial help (Cutrona & Russell, 1990; Uchino, 2004).

The dynamic nature of stress can sometimes be an issue when assessing the matching hypothesis (Cutrona & Russell, 1990; Uchino, 2004). Some stressors (e.g., a medical diagnoses) may at first be uncontrollable, as there is nothing that be directly be done about the diagnoses, but overtime become more controllable, as the individual relies on support from a physician's treatment (Uchino, 2004). Despite these difficulties, research usually supports the matching hypothesis (Barrera, 2000; Cutrona & Russell, 1990; Uchino, 2004).

Since the matching hypothesis appears to be valid (Barrera, 2000; Uchino, 2004), measurements of social support should assess this aspect of the support being provided, though these measurements are rare (Uchino, 2004). This may be a potential barrier to valid measurements of social support, as it the type of support can be an important factor in the effectiveness of the support received (Barrera, 2000; Uchino, 2004).

Functional components of social support refer to the received and perceived types of support, mentioned earlier (Tardy, 1985; Uchino, 2004). This aspect of social support is part of the definition that most recent research utilizes in studying the construct (Uchino & Birmingham, 2011). Perceived and received support are often measured based on different types of functions they may provide: emotional support, informational support, tangible support, and a sense of belonging (Barrera, 2000; Cohen, et al., 1985; Uchino, 2004). These factors are sometimes assessed and discussed separately, yet they are often highly related and difficult to separate in social support experiences (Uchino, 2004). Research on these factors suggests that they may provide physical and psychological health benefits and aid in reducing or preventing the impact of stressors (Barrera, 2000; Russell & Cutrona, 1991; Uchino, 2004).

The distinction between perceived and received support is also an important one (Cohen, 1988; Sarason & Sarason, 1986). Due to perceived support not relying on any actual support existing (Cohen, 1988; Uchino, 2004) the two aspects of social support are theoretically different. However, research on one or both aspects

provides evidence that both are beneficial (Barrera, 1986; Sarason & Sarason, 1986; Uchino, 2004).

Despite recent research focusing on the latter aspect, functional components of support (Uchino & Birmingham, 2011), the support literature provides evidence that all aspects may be factors in the beneficial nature of social support (Uchino, 2004). Even in cases when certain aspects may have some negative consequences (Antonucci, et al., 2000; Burg & Seeman, 1994; Uchino, 2004) the overall combined impact of social support is usually positive (Uchino, 2004; Uchino & Birmingham, 2011).

Stress and Social Support

Numerous models have been proposed that attempt to provide a framework for the role of social support on the experience of stress. These range from the Main-Effects Model (Cohen & Wills, 1985; Jimmieson, et al., 2010) to the very widely researched Stress-Buffering Model (Barrera, 2000; Cohen 1988). Though most research has been focused on the Stress-Buffering Model (Cohen & Wills, 1985), which suggests that social support provides a buffer for an individual experiencing a stressful event, other research suggests that social support may actually reduce an individual's exposure to stressful events, via the Stress Prevention Model (Gore, 1981).

Though much research has been performed on the different models of social support, there isn't a clear picture of which is more valid (Uchino & Birmingham (2011). Researchers suggest that there are issues with the current models, most of

which can be characterized by simplicity. According to Uchino and Birmingham (2011), due to the models' simplicity, there are possible processes potentially involved in the stress and social support relationship that go unexamined. One of these processes is the dynamic nature of support. The authors suggest that the potential for support to change over time is a limitation in the applicability of these models. Another limitation proposed by Uchino and Birmingham is what they termed "support deterioration," or the way in which certain aspects of stressful events not only affect the individual, but also his or her social network. This subsequent effect on the social support network of the individual may lead to lower levels of perceived and received social support.

Stress-Support Models

Despite the previously mentioned limitations, the proposed models are the best approximation of the way in which social support may influence one's experience of stressful events. Models are helpful in understanding complicated relationships, such as the support-stress relationship. The following models have emerged in the academic literature as two primary ways in understanding how social support may reduce experience of or exposure to stress.

Stress Buffering Model. The stress-buffering model proposes that social support can decrease the negative effects of stress on mental and physical health (Cohen & Herbert, 1996). Cohen (1988) suggests that support can buffer stress via two main processes. First, social support can influence an individual's initial appraisal of the stressor. For instance, if a coach experiences a particularly poor

meeting with a player, a peer may discuss ways the situation from a different viewpoint; resulting in the coach subsequently realizing that the situation was not as negative as they first thought. The social support from the peer, by way of the coach's appraisal, buffered, or reduced, some of the stress to be experienced by the coach. Secondly, social support can help buffer the experience of stress by serving as a coping resource. The support can function as a coping resource if an individual turns to peers to vent frustration or simply discuss a situation that is causing them stress. Also, peers may provide an individual with some information about ways to cope with stress. Similarly, satisfaction of social needs is important for an individual to cope with a stressful event; therefore it is thought to protect an individual from negative effects of stressors (Jimmieson et al., 2010).

Research has provided strong support for the buffering effect social support may have on individuals' experience of stress (Cohen & Wills, 1985; Jimmieson, et al., 2010; Pidd, 2004). Even in the case of extremely stressful events (e.g., the death of a spouse), the perceived adequacy of support is inversely related to the intensity of the experienced stress and may facilitate coping. Other research suggests that social support may decrease the negative mental health effects associated with a wide variety of stressful events such as unemployment, bereavement, and serious medical issues (Cutrona & Russell, 1990).

Laboratory studies have also found support for the stress-buffering model. Some studies have shown that individuals who receive social support experienced less cardiovascular reactivity (Lepore, 1998; Thorsteinsson & James, 1999). This

means that social support reduced the increased heart rate that can be associated with stressors. Also, research concerned with epidemiology support the buffering hypothesis. Falk, Hanson, Isacsson, and Ostergren (1992) found that, among elderly (78-79 years old) men in Malmo, Sweden, the combination of high job strain and low support was associated with the highest mortality rate over seven years.

Jimmieson et al. (2010) also suggests that identifying with a group has a buffering effect on occupational stress. This is support for findings of previous research (Haslam et al., 2004; Pidd, 2004). The researchers found that high team identifiers experienced less adverse effects of role ambiguity on their job satisfaction, but low team identifiers experienced a significant negative effect on their satisfaction. Social Identity Theory (Tajfel, 1978; Tajfel & Turner, 1979) posits that identifying with a positively evaluated group may lead to more self-worth and positive self-evaluations. An analytical review of Social Identity Theory concluded that it is useful in exploring intergroup dimensions (Hogg, Terry, & White, 1995). Other research has found that even identifying with a negatively evaluated group can have a positive impact, as the individual may experience feelings of belonging due to the group's distinctiveness (Jetten, Branscombe, Schmitt, & Spears, 2001; Jetten, Schmitt, Branscombe, McKimmie, 2005). These positive feelings may reduce the impact of the negative effects that a stressor can produce, thus they may potentially perform as a stress buffer.

Jimmieson et al. (2010) found that the strength of identification with the work team mediated the effect of coworker support on job satisfaction. This is

similar to other research, which has found that identification with the source of informational support has an impact on the effectiveness of the support (Haslam et al., 2004; Pidd, 2004). Of interest in these findings is that each study found a significant result based on instrumental social support, but not emotional support. Perhaps emotional support can provide a motivational boost for individuals dealing with stress, but does not have an impact on the actual experience of stress.

Previously discussed were two main dimensions of social support; perceived and received. Some research has found differences in the ways in which the two dimensions may impact an individual's experience of stress. Specifically, while perceived support often shows support for the stress-buffering model, received support measures sometime result in null effects (Barrera, 2000; Uchino & Birmingham, 2011). Findings such as these are often used as criticism of the stress-buffering model. Researchers have proposed theories of why received support does not show the same evidence of a buffering effect. Some of these reasons are: a drop in self-esteem when an individual seeks support (Nadler & Fisher, 1986, as cited in Uchino & Birmingham, 2011), individuals who actually receive more support are experiencing higher levels of stress (Barrera, 1986), or the recipient of the support may perceive it as unhelpful or insensitive (Uchino & Birmingham, 2011). All of these theories are possible, and perhaps to some extent, they all have a piece of the puzzle. However, research finding no evidence of a buffering effect of received support is in direct opposition to laboratory findings that suggest received support is linked to lower physical reactivity to stressful events (Lepore, 1998;

Thorsteinsson & James, 1999). Barrera (2000) suggests that the laboratory findings may provide a better understanding, as these are able to disentangle received support from current stress levels, via random assignment; whereas, in a naturalistic setting, the disentangling of the harmful effects of stress versus the positive effects of social support, is much more difficult.

Overall, research has shown consistent evidence for the stress-buffering model (Barrera, 2000; Cohen & Wills, 1985; Uchino & Birmingham, 2011). The research also suggests that there is potentially less of a buffering effect for received support than perceived support (Barrera, 2000; Uchino & Birmingham, 2011), despite laboratory research that suggests both are valid (Lepore, 1998; Thorsteinsson & James, 1999). Future research is needed to examine this discrepancy, and to add more support for or refute the stress-buffering model.

Stress Prevention Model. The stress prevention model has received significantly less research attention than the stress-buffering model, but the research that has been performed suggests that social support can affect stress differently than via the individual's appraisals and subsequent coping (Gore, 1981; Uchino & Birmingham, 2011). This model suggests that social support can be beneficial because social network members may provide individual's with resources to avoid and/or reduce exposure to some types of negative life events, which cause the individual stress (Uchino & Birmingham, 2011). A one-year long study found that the combination of community level and individual support was associated with less exposure to negative life events (Lin, 1986, as cited in Uchino &

Birmingham, 2011). Similarly, a longitudinal study of older adults by Russell and Cutrona (1991) found that those with higher social support experienced less daily hassles over an eleven-month period. Though little research has been performed directly assessing the stress-prevention model (Uchino & Birmingham, 2011), some research examining stress reduction as a mediator of support influences (e.g., Bonds, Gondoli, Sturge-Apple, & Salem, 2002) may be applicable, as general perceptions of stress likely reflect both stress reactivity and stress exposure (Uchino & Birmingham, 2011).

Longitudinal studies tend to find social support to be related to lower stress exposure (McFarlane, Norman, Streiner, & Roy, 1983; Russell & Cutrona, 1991). Other research (Wills & Cleary, 1996) examines the role of reduced stress exposure in mediating links between support and health. Wills and Cleary (1996) found that stress exposure was a mediator of the relationship between parental support and adolescent drug use. This finding is similar to Bonds et al., (2002), who found that parenting stress reactivity completely mediated the relationship between parental support and optimal parenting. Also, Russell and Cutrona (1991) determined that reductions in daily hassles were partially responsible for the relationship between social support and depression. Therefore, research generally suggests that stress acts as a mediator of social support and subsequent associations (Bonds, et al., 2002; Russell & Cutrona, 1991; Wills & Cleary, 1996). More research is needed to explain the mediator role of stress in support-health links (Uchino & Birmingham, 2011), and assess if social support is having an affect on the mediator role of stress.

Some in the academic community have pondered why there is a lack of research on the stress-prevention model (Barrera, 2000; Uchino & Birmingham, 2011). There are several possible explanations. Uchino and Birmingham (2011) suggest that a long-standing focus on the stress-buffering model has led to a focus of stress reactivity in outcome-based studies. The authors also posit that many measures of stress do not draw an explicit distinction between stress exposure and reactivity. Despite this lack of research exploring the intricacies of the stress-prevention model, recent models are beginning to address the component processes of stress (e.g., reactivity, exposure, recovery, restoration; Cacioppo & Berntson, 2007, as cited in Uchino & Birmingham, 2011; Rook, 2003).

Even though there is little research directly aimed at assessing the stress-prevention model, other research has suggested possible pathways in which social support may reduce exposure to stress (Uchino, 2004). First, Cohen (1988) suggests that social support may influence cognitive processes in a way that results in more benign appraisals of the stressor. For instance, an individual whose spouse has a well paying job may have a less intense appraisal of losing his job than an individual whose spouse does not have a well-paying job. This less intense appraisal will most likely lead to the individual experiencing less stress than if the spouse does not have a decent job. Secondly, Aspinwall and Taylor (1997) suggest that social support may enhance proactive coping (e.g., informational support on planning for poor driving conditions), which can help individuals make informed decisions that minimize their exposure to stressors. The authors also suggest that social support has the

potential to increase self-esteem and personal feelings of control, both of which are important antecedents of proactive coping (Aspinwall & Taylor, 1997). Lastly, Pearlin (1989) suggests that adequate levels of social support may help decrease an individual's exposure to what the author termed "secondary stressors". The author suggests that negative life events usually do not occur in isolation and often produce exposure to other stressors in related areas (Pearlin, 1989). A great example from research is how stressors from the workplace can often lead to issues at home (Bolger, et al., 1989; Repetti, 1989). If the spousal support, however, reduces the work-related stress, it may lessen potential spillover into the marital interactions, thus reducing the individual's exposure to such secondary stressors.

Despite little direct research on the stress-prevention model, there is research that supports the model, suggesting that social support reduces individuals' exposure to stressors (Gore, 1981; Russell & Cutrona, 1991; Uchino, 2004) and may serve as a mediator of the stress-health relationship (Bonds, et al., 2002; Wills & Cleary, 1996). However, future research is needed to provide more direct evidence for the validity of the stress-prevention model. Uchino and Birmingham (2011) suggest that researchers use relevant methodologies (e.g., longitudinal designs; see Barrera, 2000). Uchino and Birmingham (2011) also posit that adequate research on the stress-prevention model, in combination with the stress-buffering model, may highlight the complex nature of the relationship between social support and stress, along with how this relationship may unfold over time. This approach would differ from most social support research, which

measures the support-stress relationship at one moment in time (Uchino & Birmingham, 2011).

Stress and Social Support among Coaches

Empirical research supports a strong relationship between perceived social support and perceived stressors (Barrera, 2000; Uchino & Birmingham, 2011). Despite this, very few studies have assessed this relationship among sport coaches (e.g., Kelley, 1994; Kelley & Gill, 1993; Levy, Nicholls, Marchant, & Polman, 2009). Kelley (1994) and Kelley and Gill (1993) assessed social support among other variables in predicting burnout in coaches, whereas Levy et al., (2009) used a single coach in a case-study approach to assess various coping resources' impact on stress, among the various coping resources was social support.

Kelley (1994) and Kelley and Gill (1993) provided results that suggest coaches' social support predicts stress appraisal. In both studies, analyses of support-stress relationship included social support among other variables in a step-wise regression analyses, therefore it is unclear how much variance in stress is accounted for by support, alone. Kelley (1994) found hardiness, coaching issues, and social support to account for 48% of the variance in perceived support. Similarly, Kelley and Gill (1993) found social support satisfaction, gender, and experience to predict stress appraisal. However, in this study, the combined variables only accounted for 11% of the variance in stress appraisal. Even though social support was not assessed alone, Kelley (1994) and Kelley and Gill (1993) both provide some

evidence that there is a relationship between social support and stress among coaches.

Similarly, a case study of one coach (Levy et al., 2009) provides support for the negative support-stress relationship, as well. Social support (seeking assistance from coaches or players) was identified as an occasional coping mechanism. Ratings from the coach suggested that this coping mechanism was effective. Despite support from Levy et al. (2009), this study was limited to one coach and the definition of social support was seeking assistance from coaches or players. Both are big limitations, as one coach is not representative of the profession, and the conceptualization of social support is much larger than assistance seeking.

Despite being very limited, it appears that research suggests that sport coaches are another population where there is a significant relationship between social support and stress. Backed by research in other domains (Barrera, 2000; Jimmieson, et al., 2010), it appears that coaches may be able to use social support as a buffer for or to help themselves avoid experiencing stress.

Years of Experience

Higher levels of experience has been related to numerous outcomes such as teachers' self efficacy (Klassen & Chiu, 2010) and burnout (Brewer & Shapard, 2004) outside of the realm of sports, and burnout (Caccese & Mayerberg, 1984; Ullrich, 2009), coaching self-efficacy (Kavussanu, Boardley, Jutkiewicz, Vincent, & Ring, 2008) and stress coping methods of referees (Brennan, 2002) within sports. As research on experience suggests, there are various ways in which experience can

impact an individual's life, including coaches' perceived level of burnout (Caccese & Mayerberg, 1984). Despite a lack of empirical research directly assessing the relationship between experience and perceived stress, there is evidence that suggests there may be relationship.

There is evidence that supports a significant relationship between experience and burnout, a large portion of which is stress (Brewer & Shapard, 2004; Caccese & Mayerberg, 1984; Ullrich, 2009). Brewer and Shapard (2004) performed a meta-analysis on a variety of studies assessing this relationship. The researchers used all studies that assessed burnout, including those that used emotional exhaustion, and then assessed only the studies that used emotional exhaustion as a burnout measure. The authors found that in 20 studies experience in a field was negatively related to burnout and emotional exhaustion in 13 studies. Interestingly, experience in current position was not significant in all the burnout studies (n=8) but was significant in only the emotional exhaustion studies (n=5). All significant relationships were fairly weak, with weighted correlations ranging from -.08 to -.12. Brewer and Shapard's (2004) meta-analytic research supports previous findings of a significant, negative relationship between experience and burnout in coaches (Caccese & Mayerberg, 1984) and teachers (Ullrich, 2009). However, Vealey, Udry, Zimmerman, and Soliday (1992) found that there is no significantly relationship between experience and burnout among coaches.

Ullrich's (2009) dissertation abstract suggests that experience does not have the same relationship to burnout across different populations. In a United States

sample of teachers, the researcher reports a significant, positive relationship, while among German teachers there was a significant, negative relationship. This information suggests that there may be certain circumstances when experience is related to decreased stress, whereas others when it is related to increased stress. Therefore, the significant experience-stress (burnout) relationship found by Caccese and Mayerberg (1984) who sampled coaches from all sports in the 1981-1982 National Director of College Athletics book needs replication. Similarly, the non-significant experience-stress (burnout) relationship found by Vealey et al., (1992), which utilized coaches from a variety of sports, also needs replication. Perhaps these studies that assessed a wide-range of sport coaches did not find a significant relationship due to the differing sports' requirements of the coach. As Ullrich (2009) suggests, there may be situational variables that can affect the resulting experience-stress findings.

Similar to burnout, experience has been shown to relate to self-efficacy in teachers (Klassen & Chiu, 2010) and coaches (Kavussanu et al., 2008). However, these relationships are not exactly the same. Klassen and Chiu (2010) found that teachers' differed on three self-efficacy factors based on experience in a non-linear fashion. Suggesting that self-efficacy increases from early to mid-career, and subsequently decreases later in their career. However, Kavussanu and colleagues (2008) found that years of experience was moderately correlated with total (.46) and technique (.39) coaching efficacy. Suggesting that as coaches gain experience, they also feel more confident in their coaching abilities. Self-efficacy may be related

to stress in an indirect way. If a coach is less confident that her overall coaching and coaching techniques is capable of completing a task (probably winning or helping athletes improve) she will likely have more occupational stress than a coach who is confident in her coaching abilities. Thus, this evidence may support a negative relationship between experience and perceived occupational stress.

Lastly, Brennan's (2002) dissertation abstract suggests that basketball officials, in stressful situations, differ in coping methods based on experience. The researcher found that less experience officials utilized more religious or spiritual beliefs as a coping source significantly more often than more experience ones. Perhaps coaches who are more experienced also use different coping methods than less experienced coaches. If this relationship exists, it may provide support to a negative experience-stress relationship. Perhaps coaches with more experience have perfected or at least bettered their specific coping methods, while less experienced coaches are still developing them. Once an individual understands how they best cope with stress, it is reasonable that they may experience or perceived less occupational stress.

Although research assessing years of experience is somewhat limited, especially in relation to stress, it appears that there is some support for a significant, negative experience-stress relationship (Brewer & Shapard, 2004; Kavussanu et al., 2008; Klassen & Chiu, 2010; Caccese & Mayerberg, 1984). This relationship has been shown to exist in teachers (Klassen & Chiu, 2010; Ullrich, 2009) and sport coaches (Caccese & Mayerberg, 1984; Kavussanu et al., 2008).

Competition Level

Competition level has a very limited research background. However, it has been related to hostile aggression in soccer players (Coulomb & Pfister, 1998). It is also been shown to be related to charitable philanthropic giving different industries (Zhang, Zhu, Yue, & Zhu, 2010). However, concerning a relationship with stress in coaches (Kelley et al., 1999) and burnout in coaches (Vealey et al., 1992), research suggests there is not a significant relationship.

Zhang and colleagues (2010) assessed whether highly competitive industries (based on the Herfindahl-Hirschman Index) significantly differed on charitable philanthropic giving than non-highly competitive industries. The researchers found that there was a significant relationship. This information suggests as industrial competition increases, companies are more likely to donate and to donate more. The authors suggest that as competitive level increases, the desire for companies to differentiate themselves from competitors. Perhaps coaches at higher levels of competition also feel the need to differentiate themselves from other programs. This may cause stress as a coach attempts to create ways to set his program apart.

Opposite to the relationship of competition level and philanthropic giving, soccer players at the lowest competition level have been shown to have increased levels of hostile aggression than players at intermediate and high competition levels (Coulomb & Pfister, 1998). The authors defined hostile aggressive actions as rule breaking behaviors that did not contribute to the athlete completing a task. Though this research isn't directly related to coaching behaviors, it may suggest a

differences in the coaches' approach at lower competitive levels. Perhaps coaches at the lowest competitive level in Coulomb and Pfister's (1998) sample were either more accepting or even encouraged more hostile actions. Certain coaches may not feel any empathy or compassion about teaching or encouraging hostile actions; others may feel that these strategies only help them complete a task, but it may mismatch with their values. If a coach has this mismatch in values and actions, it is reasonable that they may experience or perceive more occupational stress.

Despite these indirect ways in which research may support a competition level-stress relationship, academic literature assessing this relationship among coaches does not support a significant relationship (Kelley et al., 1999; Vealey et al., 1992). Kelley and colleagues (1999) found that, among collegiate tennis head coaches, competition level had no effect on perceived stress. Similarly, Vealey et al. (1992) presents results that suggest competition level is not related to burnout among coaches of a variety of sports.

Therefore, as there is a reasonable potential connection between competition level and stress from research (Coulomb & Pfister, 1998; Zhang et al., 2010), and evidence that there is no connection between competition level and stress among coaches (Kelley et al., 1999; Vealey et al., 1992), further research is needed. Due to the limited research of the competition level-stress relationship among coaches and competition level research in general, there is a need for replication of this research.

Conclusions

In conclusion, there is ample evidence that suggests that stress has a negative impact in many aspects of an individual's life (Chandola et al., 2006; Lepore, 1995; Stanfeld & Candy, 2006). One area of life that is very impacted by stress is an individual's occupation (Beehr et al., 2010; Gilboa et al., 2008); sport coaches have been shown to have a significant level of occupational stress (Kelley, 1994; Lackey, 1986). There is also academic research that suggests social support can either reduce the negative impact of stress (Cohen & Herbert, 1996) or reduce an individual's exposure to stressful events (Gore, 1981). Similarly, some evidence exists that suggests experience may be negatively related to stress levels (Caccese & Mayerberg, 1984) and burnout (Brewer & Shapard, 2004). However, limited research needing replication exists that may suggest competition level does not impact stress (Vealey et al., 1992; Kelley et al., 1999).

CHAPTER III

Methods

The purpose of this study was to assess the relationship between perceived occupational stressors and perceived social support in collegiate coaches and to assess whether years of experience and competition add to the prediction of perceived occupational stress above just social support. This section gives an outline of the participants, instrumentation, procedures, and design of the study.

Participants

A database consisting of all NCAA Division I, II, and III track and field coaches' email addresses was utilized for contact information of the potential participants. This database was developed based on the 2008-2009 National Directory of College Athletics and includes all NCAA track and field coaches for the season of 2008-2009 (n=724). Of the 724 potential respondents, 76 actually participated, which is an overall response rate of 10.5%. Nine of the participants did not complete a large portion of the instrument, so their responses were removed from all analyses, making the total number of interpreted responses 67.

Ages of the respondents ranged from 23 to 68 with a mean of 44.51 (SD=10.92) years. The participants were mostly male (n=52, 77.6%). The majority of participants were Caucasian (n=59, 88.6%), two respondents (2.9%) selected each of Black or African American and Hispanic or Latino, one respondent (1.5%) selected each of American Indian or Alaska Native and Asian or Asian American, and two others chose not to select an ethnicity. Years of experience of the participants ranged from 0 to 40 with a mean of 14.75 (SD=10.00) years. Most of the coaches were head coaches (n=53, 79.1%), other positions represented were assistant coach (n=13, 19.4%) and graduate assistant (n=1, 1.5%). NCAA Division I (n=33, 49.3%) was the most represented competition level, followed by Division III (n=27, 40.3%), and Division II (n=3, 4.5%), however four (6%) participants chose not to select a competition level. The current study defined competition level as NCAA Division; due to the low response rate from NCAA Division II coaches, the competition level variable was analyzed only including NCAA Division I and Division III participants.

Instruments

Participants completed a demographics information survey as well as perceived occupational stressor and perceived social support assessments. The Administrative Stress Index (ASI; Koch, Gmelch, Tung, & Swent, 1982) was used to assess perceived occupational stressors and the Personal Resource Questionnaire (PRQ): Part 2 (Brandt & Weinert, 1981) was used to assess perceived social support.

Demographics. The researcher developed the demographics portion of the questionnaire (see Appendix A). Twelve questions were included to assess age,

years of head or paid (if participant is not a head coach) coaching experiences, current coaching position (head or assistant), competition level (NCAA Division I, II, or III), coaching population (men, women, or both), event area coached (distance, sprints, etc.), job status (type of contract), certifications, type of university setting (public or private university), gender, and ethnicity.

Perceived occupational stress. The Administrative Stress Index (ASI; Koch, et al., 1982) was used to assess coaches' perceived occupational stressors; the instrument consists of 25 Likert scale items ranging from 1, "rarely or never bothers me" to 5 "frequently bothers me". Koch et al., (1982) developed this assessment from Indik, Seashore, and Slesinger's (1964) job related Strain Index. The ASI was designed to provide a more specific measure of occupational stressors for school administrators. The original authors developed the measure using 1,156 members of the Confederation of Oregon School Administrators. A principle component analysis revealed four separate factors, which are role-based stress (e.g., "knowing I can't get information needed to carry out my job properly"), task-based stress (e.g., "being interrupted frequently by telephone calls"), boundary-spanning stress (e.g., "preparing and allocating budget resources"), and conflict-mediating stress (e.g., "trying to resolve differences between/among students). Finding a sum score for each factor is often the scoring procedure. Permission to use the copyrighted instrument was received (Walter H. Gmelch, University of San Francisco).

Due to the wide range of roles coaches must perform, the similarities between a college level coach and a school administrator allow the instrument to

only need slight adjustments and remain valid, which was supported by Principal Axis Factoring. On the role-based stress scale, only one item was changed; "Thinking that I will not be able to satisfy the conflicting demands of those who have authority over me" became "Thinking that I will not be able to satisfy the conflicting demands of those who have an influence on my job." The task-based stress scale and boundary-spanning stress scale did not have any adjustments. Lastly, the conflict-mediating stress scale had two items that were adjusted. "Trying to resolve differences between/among students" became "Trying to resolve differences between/among athletes" and "Handling student discipline problems" became "Handling athlete discipline problems." The current study checked reliability for and performed factor analyses on the adjusted instrument.

The current study utilized Cronbach's alpha to check the adjusted Administrative Stress Index (ASI; Koch et al., 1982) subscales for reliability. Overall, the subscales all had satisfactory levels of reliability with Cronbach's alpha levels of .846 for the role-based stress subscale, .809 for the task-based stress subscale, .573 on the boundary-spanning stress subscale, and .822 for the conflict-mediating stress subscale. These levels show strong reliability for three of the four subscales. Two factors had one item each that would have increased the Cronbach's alpha if removed, however subsequent factor analysis via Principal Axis Factoring with promax oblique rotation (see Tables 1-3) revealed communalities of .550 and .538 for these items, suggesting that they are moderately related to the rest of the instrument and should not be omitted. Also, the items logically seem important as

they are “feeling that meetings take up too much time” on the task-based subscale and “preparing and allocating budget resources” on the boundary-spanning subscale, both of which may be sources of significant occupational stress. Principal Axis Factoring with promax oblique rotation revealed that the ASI was assessing one main construct (first Eigenvalue of 6.766 followed by a second of 2.757; see Table 2), however factor correlations ranged from .175 to .477 (see Table 3), suggesting that they are assessing something similar but not the same.

Additionally, Principal Axis Factoring and Cronbach’s Alpha were used in the current study to examine reliability statistical evidence. The researcher felt that using the adjusted ASI subscales for subsequent analysis was more appropriate than using a total sum score. As the correlations between the subscales ranged from .175 to .477, the subscales are not assessing exactly the same thing. However, the scales are related, which is logical as the whole scale is assessing perceived occupational stress. This information suggests that analyzing perceived occupational stress via the subscales might provide additional information than using one sum score. However, the boundary-spanning stress scale had questionable reliability (Cronbach’s Alpha of .573) and many items loading on other factors more strongly (see Table 3). Therefore, subsequent analyses will only utilize the other three subscales. The subscales included in all subsequent analyses were role-based stress, task-based stress, and conflict-mediating stress.

Perceived social support. To measure coaches’ perceived social support, the Personal Resource Questionnaire (PRQ): Part 2 (Brandt & Weinert, 1981) was

utilized. Part 1 of the PRQ does not lend itself to statistical analyses, is rather long and cumbersome to complete, and is aimed to assess an individual's satisfaction with their social support, not their perceived level of support; therefore the researcher chose to utilize only Part 2. The PRQ: Part 2 is a 25-item survey, using a series of statements related to an individual's perception of their social support. These items are rated on a seven point Likert system, ranging from 1, "strongly agree" to 7 "strongly disagree". Some sample items are "When I am upset there is someone I can be with who lets me be myself" and "I have people to share social events and fun activities with". It is recommended to score the assessment by finding a total sum score (Brandt & Weinert, 1981).

To develop the PRQ: Part 2, Brandt and Weinert primarily used Weiss's (1974, as cited in Brandt & Weinert, 1981) model of relation functioning. Five major functions of support were included, which are: intimacy, social integration, nurturance, worth, and assistance (Brandt & Weinert, 1981). Brandt and Weinert (1981) used a sample of 149 adults to assess the reliability and validity of their measure. Internal consistency measures suggested that the five dimensions were reliable, with Cronbach's Alpha coefficients ranging from .61 to .77. However the reliability of total scores on the PRQ: Part 2 had a coefficient of .89. The authors suggest that analyzing the five dimensions of the PRQ: Part 2 will not be as effective as using the total score. Similarly, inter-correlations of the five dimensions suggested that they are measuring statistically similar constructs, with significant, positive correlations ranging from .26 to .63 at $p < .05$. These statistics suggest that

attempting to statistically analyze the dimensional scores separately from the total score would not be beneficial, as they are measuring statistically similar constructs (Brandt & Weinert, 1981). Therefore, the current study will only analyze participants' total sum score on the PRQ: Part 2.

Brandt and Weinert (1981) show criterion validity for the PRQ: Part 2 when assessed against other measures of similar constructs such as: a measure of family functioning (Pless & Satterwhite, 1973, as cited in Brandt & Weinert, 1981), and dyadic satisfaction and consensus (Spanier, 1976). A wide range of other studies, with various populations, has also supported the reliability scores of the PRQ: Part 2 with alpha coefficients ranging from .79 to .93 (Weinert, 2011). Permission was obtained to use the copyrighted instrument (Clarann Weinert, Montana State University).

Procedures

After receiving documented approval from the Institutional Review Board (IRB; see Appendix D), the potential participants were contacted via email. A database consisting of all NCAA Division I, II, and III track and field coaches' email addresses was utilized for contact information of the potential participants. Through a recruitment email (see Appendix E) and a second recruitment email (see Appendix F), the potential participants received a brief overview of the study and the requirements for their participation. Individuals who chose to participate were instructed to follow a link to an online survey website (surveymonkey.com). The participants were then presented with an informed consent document (see

Appendix G) prior to accessing the questionnaire. This consent form required the participants to acknowledge their consent to participate in the study; upon doing so, the participants were granted access the questionnaire. The estimated time to complete the online questionnaire was 20-30 minutes. There were no follow-ups or incentives provided to the participants.

Design/Analyses

The current study was designed as an extension of the thesis committee chairman's study on athletic directors (Judge & Judge, 2009). This study used a modified ASI (Koch et al., 1982) to assess perceived occupational stressors within the population of interscholastic athletic directors. As the original ASI is designed to assess occupational stress in school administrators, and Judge and Judge (2009) showed validity of the instrument with athletic directors, the current study decided to assess sport coaches with a modified ASI instrument, as well.

The current study used a correlational design to assess the relationship between perceived social support and perceived occupational stressors among collegiate coaches. Also of interest was how coaching experience and competition level may combine and add to support in impacting stress. All statistics were analyzed using IBM SPSS Statistics version 19.0, with an alpha level set at .05.

First, descriptive analyses on the demographic information were performed. To address the first hypothesis, Pearson correlations were used. This analysis evaluated the relationships between perceived social support sum score and the mean scores on the four subscales of perceived stressors.

The second hypothesis was addressed by use of hierarchical regression analysis. This was aimed to assess whether perceived social support, years of experience, and competition level combined, accounted for significantly more variance in the perceived occupational stressor subscales than perceived social support, alone. Since there was much literature support for a significant relationship between social support and stress (Barrera, 2000; Uchino & Birmingham, 2010), social support was entered as the first block. To assess if years of experience and competition level significantly add to the explanation of occupational stress, social support, years of experience, and competition level were entered as block two. As there was a lack of empirical evidence to support that either experience or competition level would significantly add to this relationship more than the other, they were entered in a block together.

CHAPTER IV

Results

The current study assessed the relationship between collegiate track and field coaches' perceived level of occupational stressors and perceived social support, and if years of experience and competition level contributed to this relationship. All statistical analyses were performed using IBM SPSS Statistics version 19.0 with an alpha level set at .05. Prior to assessing the research questions, frequency descriptive analyses on the previously unmentioned demographic information were performed (see Table 4). The participants mostly coached both men and women's track and field (86.6%) and 59.7% coached distance; however the event areas coached are not exclusive, so a specific coach may coach up to all four event areas. Similarly, the highest percentage of coaches had a one-year renewable contract (70.1%) and had achieved Level II (46.3%) United States of America Track and Field (USATF) certification. One coach (1.5%) each presented with various other certifications relevant to coaching this population. Lastly, there was an even split (49.3%) respectively, between the coaches who coach at a public or private university. There was one 'no response' each for the following items: contract,

USATF certification, and type of university setting. Next, descriptive statistics were performed on the subscales of the ASI and the PRQ. Results showed that coaches reported the most stress related to task-based issues, followed by role-based and then the least amount of stress was related to conflict-mediating situations (see Table 5).

As stated previously, due to the low response rate of NCAA Division II coaches (4.5% of sample) compared to Division I (49.3%) and Division III (40.3%) coaches, in all subsequent analyses, competition level was recoded to only include Division I and Division III coaches. As there was such a low number of coaches in NCAA Division II programs, the researcher decided that analyzing the results without this classification would be more appropriate and potentially yield more accurate results than including responses from Division II coaches.

Hypothesis 1

To assess the hypothesis that perceived social support would be significantly negatively related to all perceived occupational stressor subscales, Pearson's correlations were performed on the sum scores of the ASI subscales and the PRQ. Results revealed a significant, but fairly weak, negative correlation ($r(66) = -.244$, $p = .047$) between the task-based stress subscale and the social support scores, while the other stress subscales were not significantly correlated with perceived social support (see Table 6). As all the subscales did not significantly negatively relate to social support, the total hypothesis was not supported; however a significant, fairly

weak, negative correlation between task-based stress and social support shows a relationship between stress and support exist.

Hypothesis 2

Next, to assess Hypothesis 2, which was that perceived social support scores, years of experience, and competition level combined would account for significantly more variance in perceived stress than social support scores alone, the researcher performed hierarchical regression analysis on each subscale, except for the excluded boundary-spanning stress subscale. The first block of the hierarchical regression was perceived social support, followed by years of experience and competition level in the second block.

Based on the analysis of variance (ANOVA) model fit, no stress subscale was significantly predicted by either social support alone, or the combination of social support, years of experience, and competition level (see Tables 7-9). Despite all models not significantly predicting any stress subscales, the task-based stress subscale model received a significant contribution from social support (Beta=-.261, $t(56) = -2.071, p = .048$; see Table 6). For no model was the increase in R^2 due to the inclusion of block 2 variables significant; therefore Hypothesis 2 was not supported.

CHAPTER V

Discussion

Introduction

The purpose of the current study was to examine the relationship between perceived occupational stressors and social support among collegiate coaches, and to assess if years of experience and competition level add to the prediction of perceived occupational stress. This section discusses the results and implications of the current study. Within this section, discussed are the main topic headings of Research Question 1, Research Question 2, limitations, future research implications, and conclusions.

Research Question 1

The first research question explored was about the relationships between social support and four factors of stress (i.e. role-based stress, task-based stress, boundary-spanning stress, conflict-mediating stress) for college coaches. The corresponding hypothesis was that perceived social support scores would be significantly negatively related to all four perceived occupational stressor subscales. This hypothesis, as a whole, was not supported by the results. Only one of the four perceived occupational stress subscales, task-based stress, was found to be

significantly, negatively related to perceived social support, and this relationship was fairly weak. The other two stress subscales included in analyses, role-based stress and conflict-mediating stress, despite having negative correlations were not found to be significantly related to social support.

The significant negative correlation implies that coaches who perceived more social support also perceived significantly less task-based occupational stress. Some items from this subscale are “Feeling I have to participate in school activities outside of the normal working hours at the expense of my personal time” and “Imposing excessively high expectations on myself”. The task-based subscale items assess the day-to-day requirements of the coaches; results show there is a significant negative relationship between these stressors and social support. However, the results suggest that social support may not be related to role-based or conflict-mediating stress.

As collegiate coaches have many different tasks that they must complete such as preparing their team for competition, recruiting future athletes, and ensuring that their program is following the national guidelines, it is not surprising that this is the subscale that reached significance because balancing these responsibilities may be quite stressful. To support this finding, Judge and Judge (2009) used an adjusted Administrative Stress Index (ASI; Koch, Gmelch, Tung, & Swent, 1982) and found that, in interscholastic athletic directors, seven of the top ten identified stressors were from the task-based subscale. Perhaps as coaches and athletic directors deal with task-based stressors on a day-to-day basis, these are more often relevant to an

individual's level of overall stress than other stressors not experienced on a consistent basis.

Understanding that task-based stress is significantly related to social support provides a glimpse into the way in which coaches experiences occupational stress. Coaches must perform a wide range of tasks on a daily basis. Perhaps there is something about the continual, daily requirements of tasks that differ from role-based and conflict-mediating stress that lends itself to either the preventative or buffering effects of social support. Or there may be something about the role-based or conflict-mediating stressors that do not lend themselves to being influenced by social support. The findings from the current study indicate that coaches may deal less with role-based and conflict-mediating stress than task-based stress. Thus, maybe coaches do not utilize social support nearly as often when stress arises due to role-based or conflict-mediating issues. Instead, the coaches may just handle these situations when they arise, not allowing the stress to compound. However, the continual day-to-day issues do not go away, as the coach must perform numerous duties each day. As Judge and Judge (2009) showed, seven of athletic directors' top ten rated stressors were from the task-based scale. Perhaps coaches experience much more compounded stress from their day-to-day tasks than from role-based or conflict-mediating issues. The coaches may utilize social support to alleviate the effect of stress after a certain threshold of stress is reached. If so, social support may affect task-based stress more than role-based or conflict-mediating stress.

Similarly, as the matching hypothesis (Cohen & Wills, 1985; Cutrona & Russell, 1990) suggests, social support should match the level of stressor in order to provide the best buffering effect. As the task-based stress subscale was significantly related to social support and the others were not, the coaches may be looking for some support tangible to the day-to-day tasks that cause them stress. For instance, a long-term family vacation may not match the day-to-day stress experienced by a coach; therefore, it does not help alleviate this type of stress. Having a spouse or close friend to vent to during a tough day may be more beneficial. Therefore, armed with this information, coaching educators may be able to help coaches better identify small ways in which social support networks can help alleviate day-to-day task-related stress.

The current study assessed perceived, not actual stress and did not examine coping methods, so it is unclear if coaches' social support prevents stress via the Stress-Prevention Model or buffers the effects of stress via the Stress-Buffering Model. Research suggests that both models are valid (Barrera, 2000; Uchino & Birmingham, 2011); therefore, there is not a clear assumption of which were enacted.

Coaches' social support may have prevented stressful experiences. Longitudinal studies have found that increased social support is related to lower levels of stress exposure (McFarlane, Norman, Streiner, & Roy, 1983; Russell & Cutrona, 1991). For instance, if coaches knew that they had to have a weekly recruiting report done each Friday, they may enlist the help of other staff members

prior to the deadline. This extra help would have a preventative effect of social support. Here, the coaches may use their social network to avoid a potentially stressful situation. This is similar to the findings of McFarlane et al. (1983) and Russell and Cutrona (1991) who found that increased social support was related to less exposure to stressful events, such as daily hassles.

Along with the potential preventative role of social support, it is possible that the coaches who had more social support experienced a buffering effect on their stress. Jimmieson, McKimmie, Hannam, and Gallagher (2010) have suggested that identifying with a group, such as friends, family, or team buffers the effects of occupational stress. This study showed that high team identifiers experienced less adverse effects of role ambiguity on job satisfaction. Perhaps coaches in this study who had high levels of social support were able to use their social network to indirectly reduce their stressful experience. For instance, in the previously mentioned scenario coaches may have also used a spouse or friend to vent about having to prepare a weekly recruiting report. This venting may have reduced some of the built up stress relating to this task. This would be a buffering effect of social support, as the coaches used their social network to help decrease their experience of stress. Lepore (1998) and Thorsteinsson and James (1999) found that increased social support is related to less cardiovascular reactivity, a measure of stress. Perhaps coaches who know they have a support network that provides them with social needs do not react initially with as strong of a stressful reaction. The current

study's findings of a negative task-based stress-support relationship supports the authors' conclusions that stress and support are significantly, negatively related.

Coaches may also find social support within their coaching staff. Jimmieson et al. (2010), Haslam et al., and Pidd (2004) suggest that identifying with a work group has a buffering effect on occupational stress. Specifically, individuals who identified with their work team more (higher social support) experienced less adverse effects of role ambiguity on job satisfaction (Jimmieson et al., 2010). In the current study, coaches who had higher social support may have had such due to their relationships with their staff members. If coaches know that they can use a fellow staff member as a source for comfort, guidance, or some other type of support, they may also perceive less stress in the workplace, knowing that they have help if a particularly difficult situation arises. This type of support would also be evidence that coaches want social support that matches their daily task-related hassles. The matching hypothesis (Cohen & Wills, 1985; Cutrona & Russell, 1990) may be a factor in how members of a coaching staff can support each other. If a very stressful situation arises, for instance allegations of NCAA violations that may be grounds for termination, a coach may not find comfort in venting to fellow staff members, whereas a spouse who has a well-paying occupation or a friend who may hire the coach elsewhere may alleviate some stress relating to this situation.

Even without evidence for or against the Stress-Buffering or Stress-Prevention models, coaching educators can use this information to help guide their work. Many academic studies have suggested stress can have very detrimental

effects on an individual such as physical illness (Chandola, Brunner, & Marmot, 2006) and psychological dysfunction (e.g., increased anxiety, Stanfeld & Candy, 2006); increased occupational stress is significantly related to decreased performance (Abramis, 1994; Gilboa, Shirom, Fried, & Cooper, 2008) and increased job dissatisfaction (Abramis, 1994). Therefore, individuals who work with coaches may help them improve their overall well-being and performance by suggesting that they take measures to increase their social support. These measures may range from scheduling time with friends and family to taking a vacation.

Reasons for the role-based and conflict-mediating subscales not being significant could vary greatly. As coaches usually face task-based situations on a daily basis, but may not experience role-based situations or conflict-mediating situations nearly as often, these type of stressors may not be as relevant to the coaches' stress. As the timing of the current study's data collection period may have happened when a number of coaches had finished their season, they may have been focusing on their day-to-day duties and therefore did not rate the role-based and conflict-mediating stressors as high. Also, some coaches may not have had many recent role-based stressors. If some had completed their season, they may have been more focused on recruiting and preparing for off-season tasks, which may have focused their attention on those stressors. Similarly, if coaches who were still competing responded, they may have been extremely focused on preparing their team for upcoming competition, which would be task-based stress. Also relevant here is the matching hypothesis (Cohen & Wills, 1985; Cutrona & Russell, 1990).

Most of the social support items may have related to fairly small ways in which individuals perceive social support. Therefore, the social support items may not have asked about support that affects the participants' stressors that are not related to their day-to-day tasks.

The results from the current study support previous research that also found a significant relationship between stress and social support (Cohen & Herbert, 1996; Gore, 1981, Jimmieson et al., 2010) and previous literature on daily hassles and social support. Russell and Cutrona (1991) found that individuals with more social support experienced less daily hassles over an eleven-month period. The day-to-day task related stress of coaches is similar to the daily hassles experienced by participants in Russell and Cutrona's study. It also supports research that found a similar stress-support relationship with collegiate sport coaches (Kelly, 1994; Kelly & Gill, 1993; Levy, Nicholls, Marchant, & Polman, 2009). However, these studies used social support combined with other variables in a regression model to predict stress. The current study adds to this line of research in that it assessed the relationship of social support alone, and occupational stress. Therefore, the current study is a connection between the stress-support literature (Barrera, 2000; Uchino & Birmingham, 2011) and the research focused on stress and support among coaches (Kelley, 1994; Kelley & Gill, 1993; Levy et al., 2009). More specifically, the current study helps draw a connection between a significant stress-support relationship (Barrera, 2000; Uchino & Birmingham, 2011) and a significant

prediction model of stress, of which social support is a factor (Kelley, 1994; Kelley & Gill, 1993).

As Research Question 1 used correlational analyses, a causal relationship cannot be assumed. It seems logical that because a coach has more social support they would experience less stress, it is also logical that higher levels of stress may lead to lower levels of social support. Therefore, armed with only the current analyses, it is equally likely that more social support leads to decreased stress, that increased stress leads to less social support, or that there is another reason for the significant relationship.

Research Question 2

The second research question explored the impact of head coaching experience and competition level (as defined by NCAA Division) on predicting occupational stress based on perceived social support. The corresponding hypothesis was that perceived social support, years of experience, and competition level would account for significantly more amount of variance in perceived occupational stress than perceived social support alone. This hypothesis was not supported by the results. Despite that the combination accounted for more variance than social support alone on each subscale of perceived occupational stress, there were no models that significantly predicted stress from either social support alone or the combination of social support, years of experience, and competition level.

There is a lack of academic research assessing a similar model, but there is evidence that social support (Barrera, 2000; Uchino & Birmingham, 2010) and years

of experience (Caccese & Mayerberg, 1984; Brewer & Shapard, 2004) may be directly related to stress. Research may suggest that competition level may be indirectly related to stress (Coulomb & Pfister, 1998; Zhang, Zhu, Yue, & Zhang, 2010). The lack of significant predictions in the current study based on the combination of these constructs is in contrast to these findings. Despite no significant prediction of stress, perceived social support made the only significant contribution to any model, which came on the task-based stress prediction model. This finding is not surprising, as in Hypothesis 1, this subscale was found to be significantly related to social support scores.

Differing from the findings of the current study, Caccese and Mayerberg (1984) found that experience was significantly related to burnout in coaches. Also, Brewer and Shapard (2004) found in their meta-analytic research that experience in a field was significantly related to burnout and emotional exhaustion and that experience in a position was significantly related to emotional exhaustion. The experience-burnout relationship is also found in teachers (Ullrich, 2009). Despite this evidence for a significant experience-stress relationship, the current study did not support it.

The non-significant findings of an experience-stress prediction supported research by Vealey and colleagues (1992) who found a similar result using coaches from a variety of sports from high school, college, and elite levels. Perhaps there is not a significant relationship between an individual's experience and his perceived levels of occupational stress. Potentially, as coaches' progress through their career,

they may not have a significant change in social support. If coaches initially have a high level of social support, they may strive to keep a similar level throughout their career, whereas coaches who do not have a high level of support may not strive to increase their support; they may not be aware of any potential positive effects or social connection does not mean a lot to these individuals. Therefore, as coaches gain experience, the way in which their support impacts their stress may not change.

Similar to years of experience, competition level has also been shown to be unrelated to burnout in tennis coaches (Kelley, Eklund, & Ritter-Taylor, 1999) and among coaches from a variety of sports (Vealey et al., 1992). However, competition level may indirectly relate to stress as it has shown to lead to increased athlete hostile actions (Coulomb & Pfister, 1998) and the desire to differentiate oneself from competitors (Zhang et al., 2010). Perhaps some coaches do not approve of higher levels of hostile actions. This would be a cause of stress if a coach's players continue to act in a hostile manner and her values conflict with these behaviors. Also, coaches who are trying harder to create ways to differentiate themselves may experience more stress due to these attempts. Despite these theorized indirect effects, the current study did not support a relationship. Coaches at different levels of competition may experience stress relative to their competitors. If a high school team were to compete against NCAA Division I squads, there may be a difference in stress for the coaches. One coach, knowing he is almost assured to win, whereas the other knows she cannot. Since the competition of a specific school should be related

to their specific level of competition, coaches at similar levels may experience similar amount of stress. A given Division I team should relate to their competitors in a way similar to a given Division III team, and therefore coaches within these divisions may have similar levels of stress. Also a possibility in a non-significant competition level-stress finding is that the current study only assessed collegiate coaches. Perhaps high school coaches' duties and roles are not as stressful as collegiate coaches' and there may be a similar difference in college and elite coaches' stress. As a result of using only collegiate coaches, the current study would not have found this relationship. However, Vealey and colleagues (1992) found that there was no difference in stress based on competition level in their sample of coaches including high school, college, and elite levels.

The assessments used in this study may have also impacted the result of not supporting Hypothesis 2. On the experience question, coaches who were current head coaches would have responded with their years of experience in a head coaching position. However, coaches who were currently not a head coach would have responded with a total number of years of coaching experience, regardless of position in which the experience came. Potentially, a current assistant coach may have counted previous years of head coaching experience, if they had any. Coaches in a given position would likely use experience gained from other positions as well as current positions in dealing with stressful events. If the current study had collected all coaches' total years of experience, this construct may have significantly contributed to the regression model. Similarly, the competition level item left out

potential further classifications within NCAA Divisions I, II, and III. If the current study would have assessed different ways to assess competition level, it may have been found to significantly contribute to the regression model.

The current study adds to literature that attempts to analyze the stress-support relationship. It is impactful in that it provides information relating to a specific population that is not heavily researched in the stress-support literature, collegiate sport coaches, who have been shown to have high levels of work-related stress (Drake & Herbert, 2002; Lackey, 1986). As the relationship between occupational stress and social support is supported with different populations, it only adds more support to the theory that social support can have a very important role in the way individuals perceive and experience stress. Also, the current study attempted to use a hierarchical regression model, allowing the inclusion of social support, alone. This method allowed the current study to add to previous significant predictions of stress that included social support among other variables (Kelley, 1994; Kelley & Gill, 1993). As the current study did not find social support to significantly predict any stress subscales, perhaps one is not predictable from the other, alone. Social support may be a variable that can be included in a model to predict stress, but not predict stress by itself. However, the current study did not support the inclusion of experience and competition level with support as predictors of stress. Others have found factors such as age, gender, and type of sport to be factors included with support in significantly predictive models of stress (Kelley, 1994; Kelley & Gill, 1993).

As the current study did not find any prediction model to significantly predict stress, perhaps the factors of social support, experience, and competition level do not predict this construct. The significant contribution of social support on the task-based model was not surprising, as the two have been shown to be related by the current study and others (Barrera, 2000; Uchino & Birmingham, 2011). However, since social support did not significantly predict any stress subscale, perhaps there is an outside influence that happens to effect both stress and social support, which may be the reason for a significant relationship. In any case, the current study supports previous findings that experience (Vealey et al., 1992) and competition level (Kelley et al., 1999; Vealey et al., 1992) are not related to stress, and does not support the hypothesis that experience and competition level would significantly add to the stress-support relationship.

Limitations

There were various limitations to the current study. These limitations range from issues related to the sample of participants to the assessments that were used to collect data. Some of these limitations were acknowledged prior to data collection, while others emerged during or after data collection.

First, the study only used track and field coaches. As this population may be similar to other collegiate sport coaches, it most likely does not lend itself to generalizing to coaching different levels, perhaps high school or professional coaches face different challenges and stressors than collegiate ones. Also, as the current study focused on coaches, the information obtained from this population

may not be useful in understanding the stress-support relationship in other occupations or stress not related to the workplace.

Also, as previously mentioned, a limitation is the utilization of the Administrative Stress Index (ASI, Koch et al., 1982) because this assessment was designed to assess school administrators' perceived occupational stress, not coaches'. Therefore, the questions may not perfectly pertain to collegiate coaches' occupational stress levels. Despite efforts to adjust certain items and statistical measures of reliability, the ASI may not fit this population as well as an instrument designed specifically for coaches. Also pertinent to the ASI as well as the Personal Resource Questionnaire: Part 2 (Brandt & Wendy, 1981), is that these assessments measure perceived levels of stress and social support. As perception is not always the same as reality, scores on these assessments may not reflect actual experienced stress and social support.

Other limitations are related to the sample. First, the database used for contact information of the coaches was based on the 2008-2009 population of track and field coaches. It is reasonable to assume that some of the coaches in this database may have retired or changed jobs from then until the time the current study attempted to contact them. Therefore, the population sampled may not represent the current population of NCAA track and field coaches. If some coaches retired, other coaches were probably hired, as well. These new coaches would not have received an invitation to participate in the current study. This means that potential information that could be analyzed was not received.

Another limitation with the sample was the low response rate. The statistical analyses may have shown more significant results or perhaps different results altogether if the response rate and sample size had been larger. Also, with a small sample size and low response rate, the results may not be completely generalizable to coaches. Though, despite the small sample and low response rate, the sample was not too small to make meaningful interpretations from the data.

Also an issue with the current study are the differences between the coaches who chose to participate and those who did not. The data collection portion of the current study was initialized less than one month prior to the NCAA national tournament. During this time, the Track and Field teams were competing in conference tournaments and preparing to enter the National Tournament. Therefore, there may be an issue related to the coaches who decided to participate versus those who did not. Perhaps the coaches who did not choose to participate were so overwhelmed and stressed that they could not afford the time needed to complete the current study's questionnaire. This may present a selection bias, where the current study, because of the timing of the data collection, was prone to retrieve data from less stressed coaches. Similarly, the coaches who chose to participate may have not had any athletes participating in the National Tournament, or were not stressed about the coming end of the season. These coaches may present a selection bias, as well. Here, the current study may have included certain coaches who were perceiving less occupational stress, simply due to the non-existence of a significant source of stress, preparing for a conference or national

tournament. If either is the case, there may be an issue with the generalizability of the study, as it may not be an accurate representation of the stress-support relationship within this population.

Another limiting factor was that only three or 4.5% of the participants coached at NCAA Division II universities. As the NCAA Division II national tournament occurs on the same dates as the Division III tournament, it is interesting that there were such low numbers in the Division II but not Division III category. Perhaps there are certain factors surrounding coaches within this division that may have changed the result if more had responded. The NCAA Division II conference tournaments may have different dates than Division III, so perhaps most coaches were traveling for competition. Another possibility is that many Division II coaches' semester ends when their season is over. Due to the smaller nature of Division III programs, more coaches may have dual roles within the university, such as teaching or administrative duties, which would keep them around their office after the season ends. Therefore, more coaches in Division III may have still been in a work role and thus, decided to participate; whereas many Division II coaches may have not still been in a work role and either were no longer checking work-related email or simply decided not to participate as their work semester was completed. In any case, this demographic information is not very representative of the entire population of NCAA collegiate track and field coaches, and thus may not be a good representation of the stress-support relationship therein.

Despite these limitations, the current study also had numerous positive aspects. First, the current study performed Principal Factor Analysis on the adjusted ASI (Koch et al., 1982). This analysis suggested that the adjusted subscales were valid and the instrument should be analyzed using the subscales, not a total sum score. However, these analyses also revealed that one subscale, boundary-spanning stress, was not reliable and should be removed from analyses. Next, the time of data collection was around the conference and national tournament dates. This time of year is obviously especially stressful for coaches, as they prepare their athletes for important competitions, have been coaching for an entire season, and may be dealing with losing the connection they have with graduating athletes. This was advantageous because the perceived occupational stress assessment was administered during this high-stress time. Another strength of the current study was analyzing additional predictors of perceived stress. These additional factors were years of experience and competition level. Including this analysis allowed the study to add to the literature that other situational and contextual variables impact the stress-support relationship (Cohen & Herbert, 1996; Uchino & Birmingham, 2010). Lastly, the current study used a population that is not often studied in the stress-support literature. Despite evidence that the coaching profession is very stressful (Drake & Herbert, 2002; Kelley & Gill, 1993; Lackey, 1986), this population is rarely used in this area of literature. Using this population strengthens past research suggesting that social support plays an important role in perceived stress

(Cohen & Wills, 1985; Uchino & Birmingham, 2010) with a sample of individuals not often assessed.

Future Research Implications

With some of the current research findings along with certain limitations, there are suggestions that can be made for future research. First, coaches should be researched from other sports to assess if the relationship between stress and support is present. Similarly, future studies may utilize larger sample sizes and perhaps include a variety of sport coaches, instead of just assessing coaches of one sport. With a range of sports represented, a better understanding of the stress-support relationship among sport coaches will result. Also of interest in relation to participants, would be attempting to use a statistically representative sample of the population. If future researchers are able to do this, it will provide more pertinent information for coaches and those who work with coaches.

There are also suggestions for future research in relation to the instruments. If future researchers attempt to assess if experience and competition level play a significant role in the stress-support relationship, perhaps they should separate these constructs in the hierarchical regression analysis. This will further the understanding of this relationship and how influential experience and competition level can be to perceived levels of stress. Using other measures of occupational stress and social support, including assessments of actual social support and stress experienced not perceived, would also be advantageous. This method would allow researchers to observe the relationship much closer and analyze if experience or

perception is more impactful. The current study also suggests that future researchers may want to use overall years of experience for head coaches, not just their head coaching experience and further classifications of competition level than NCAA Divisions.

Lastly, a longitudinal study related to the stress-support relationship would provide a better understanding than a one-time assessment. The current study assessed the coaches at a particularly stressful point in the season. Perhaps results would be different at another point in the season or if the assessment was administered more than once throughout a season.

Conclusions

Despite the current study not supporting its hypotheses, there were some impactful findings. First, the significant results add to the literature that suggests social support plays an important role in the perception of stress (Barrera, 2000; Uchino & Birmingham, 2010). Also, the current study uses a sample of collegiate coaches who are not often researched in this area but who, however have been shown to have high levels of work-related stress (Drake & Herbert, 2002; Lackey, 1986). As a similar relationship between stress and social support is demonstrated with other populations, it adds support to the theory that social support can have an imperative role in the way individuals perceive and experience stress. Individuals who work with coaches can also apply this information in a variety of ways including helping them lower their stress levels and increase their performance.

The current study has only started what could be a long line of research assessing the perceived occupational stress and social support relationship in the coaching profession and the field of sport and exercise psychology. As information pertinent to this relationship continues to expand, consultants will have a better understanding of how this relationship applies to individuals surrounding athletic teams.

References

- Abramis, D. (1994). Work role ambiguity, job satisfaction, and job performance: Meta-analyses and review. *Psychological Reports, 75*, 1411-1433.
- Antonucci, T., Akiyama, H., & Lansford, J. (1998). Negative effects of close social relations. *Family Relations, 47*(4), 379-384.
- Barrera, M. (1986). Distinctions between social support concepts, measures, and models. *American Journal of Community Psychology, 14*(4), 413-445.
- Barrera, M. (2000). Social support research in community psychology. In J. Rappaport and E. Seidman (Eds.), *Handbook of community psychology*, (215-245). New York, NY: Kluwer Academic/Plenum Publishers.
- Beehr, T., Bowling, N., & Bennett, M. (2010). Occupational stress and failures of social support: When helping hurts. *Journal of Occupational Health Psychology, 15*(1), 45-59. doi: 10.1037/a0018234
- Berkman, L., Glass, T., Brissette, I., & Seeman, T. (2000). From social integration to health: Durkheim in the new millennium. *Social Science and Medicine, 51*, 843-857.
- Bolger, N., DeLongis, A., Kessler, R., & Schilling, E. (1989). Effects of daily stress on negative mood. *Journal of Personality and Social Psychology, 57*, 808-818.
- Bonds, D., Gondoli, D., Sturge-Apple, M., & Salem, L. (2002). Parenting stress as a mediator of the relation between parenting support and optimal parenting. *Parenting: Science and Practice, 2*, 409-435.

- Brandt, P., & Weinert, C. (1981). The PRQ: A social support measure. *Nursing Research, 30*(5), 277-280.
- Brennan, S. (2002). Coping methods of male and females NCAA division I basketball referees under stressful game conditions. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 62*(11-B), 5358.
- Brewer, E.W., & Shapard, L. (2004). Employee burnout: A meta-analysis of the relationship between age or years of experience. *Human Resources Development Review, 3*(2), 102-123.
- Burg, M., & Seeman, T. (1994). Families and health: The negative side of social ties. *Annals of Behavioral Medicine, 16*(4), 109-115.
- Burton, W., Chen, C., Conti, D., Schultz, A., Pransky, G., & Edington, D.W. (2006). The association of health risks with on-the-job productivity. *Journal of Occupational and Environmental Medicine, 47*(8), 769-777.
- Caccese, T., & Mayerberg, C. (1984). Gender differences in perceived burnout of college coaches. *Journal of Sport Psychology, 6*, 279-288.
- Capel, S., Sisley, B., & Desertrain, G. (1987). The relationship of role conflict and role ambiguity to burnout in high school basketball coaches. *Journal of Sport Psychology, 9*, 106-117.
- Chandola, T., Brunner, E., & Marmot, M. (2006). Chronic stress at work and the metabolic syndrome: Prospective study. *British Medical Journal, 332*, 521-524.

- Cohen, S. (1988). Psychosocial models of the role of social support in the etiology of physical disease. *Health Psychology, 7*, 269-297.
- Cohen, S. (2004). Social relationships and health. *American Psychologist, 59*, 676-684.
- Cohen, S., & Herbert, T. (1996). Health psychology: Psychological factors and physical disease from the perspective of human psychoneuroimmunology. *Annual Review of Psychology, 47*, 113-142.
- Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. (1985). Measuring the functional components of social support. In I. Sarason & B. Sarason (Eds.), *Social Support: Theory, Research, and Applications (73-94)*. The Hague, Holland: Martines Nijhoff.
- Cohen, S., & Wills, T. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310-357.
- Coulomb, G., & Pfister, R. (1998). Aggressive behaviors in soccer as a function of competition level and time: A field study. *Journal of Sport Behavior, 21*(2), 222-231.
- Cutrona, C., & Russell, D. (1990). Type of social support and specific stress: Towards a theory of optimal matching. In B. Sarason, I. Sarason, & G. Pierce (Eds.), *Social Support: An Interactional View (319-366)*. New York, NY: Wiley.
- Dale, J., & Weinberg, R. (1989). The relationship between coaches' leadership style and burnout. *The Sport Psychologist, 3*, 1-13.

- Drake, D., & Herbert, E. (2002). Perceptions of occupational stress and strategies for avoiding burnout: Case studies of two female teacher-coaches. *Physical Educator, 59*(4), 170-184.
- Falk, A., Hanson, B., Isacson, S., & Ostergren, P. (1992). Job strain and mortality in elderly men: Social network, support and influence as buffers. *American Journal of Public Health, 82*, 1136-1139.
- Fenlason, K., & Beehr, T. (1994). Social support and occupational stress: Effects of talking to others. *Journal of Organizational Behavior, 15*, 157-175.
- Frey, M. (2007). College coaches' experiences with stress. *The Sport Psychologist, 21*(1), 38-57.
- Gilboa, S., Shirom, A., Fried, Y., & Cooper, C. (2008). A meta-analysis of work demand stressors and job performance: Examining main and moderating effects. *Personnel Psychology, 61*, 227-271.
- Gore, S. (1981). Stress buffering functions of social supports: An appraisal and clarification of research models. In B. Dohrenwend and B. Dohrenwend (Eds.) *Stressful life events and their context*, (202-222). New York, NY: Prodist.
- Haslam, S., Jetten, J., O'Brien, A., & Jacobs, E. (2004). Social identity, social influence, and reactions to potentially stressful tasks: Support for the self-categorization model of stress. *Stress and Health, 20*, 3-9.
- Hogg, M., Terry, D., & White, K. (1995). A tale of two theories: Critical comparison of Identity Theory with Social Identity Theory. *Social Psychology Quarterly, 58*(4), 255-269.

- House, J., Landis, K., & Umberson, D. (1988). Social relationships and health. *Science*, *241*, 540-545.
- Indik, B., Seashore, S., & Slesinger, J. (1964). Demographic correlates of psychological strain. *Journal of Abnormal and Social Psychology*, *69*(1), 26-38.
- Jetten, J., Branscombe, N., Schmitt, M., & Spears, R. (2001). Rebels with a cause: Group identification as a response to perceived discrimination from the mainstream. *Personality and Social Psychology Bulletin*, *27*, 1204-1213.
- Jetten, J., Schmitt, M., Branscombe, N., & McKimmie, B. (2005). Suppressing the negative effect of devaluation on group identification: The role of intergroup differentiation and intragroup respect. *Journal of Experimental Social Psychology*, *41*, 208-215.
- Jimmieson, N., McKimmie, B., Hannam, & R., Gallagher, J. (2010). An investigation of the stress-buffering effects of social support in the occupational stress process as a function of team identification. *Group Dynamics: Theory, Research, and Practice*, *14*(4), 350-367.
- Judge, L.W., & Judge, I.L. (2009). Understanding the occupational stress of interscholastic athletic directors. *The ICHPER-SD Journal of Research*, *4*(2), 38-45.
- Kavussanu, M., Boardley, I.D., Jutkiewicz, N., Vincent, S., & Ring, C. (2008). Coaching efficacy and coaching effectiveness: Examining their predictors and comparing coaches' and athletes' reports. *The Sport Psychologist*, *22*, 383-404.

- Kelley, B. (1994). A model of stress and burnout in collegiate coaches: Effects of gender and time of season. *Research Quarterly for Exercise and Sport*, 65(1), 48-58.
- Kelley, B., & Baghurst, T. (2009). Development of the coaching issues survey. *The Sport Psychologist*, 23, 367-387.
- Kelley, B., Eklund, R., & Ritter-Taylor, M. (1999). A model of stress and burnout in collegiate tennis coaches: effects of gender and competition level. *Journal of Sport and Exercise Psychology*, 2, 113-130.
- Kelley, B., & Gill, D. (1993). An examination of personal/situational variables, stress appraisal, and burnout in collegiate teacher-coaches. *Research Quarterly for Exercise and Sport*, 64(1), 94-101.
- Klassen, R.M., & Chiu, M.M. (2010). Effects on teachers' self-efficacy and job satisfaction: teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, 3, 741-756. doi: 10.1037/a0019237
- Koch, J., Gmelch, W., Tung, R., & Swent, B. (1982). Job stress among school administrators: Factorial dimensions and differential effects. *Journal of Applied Psychology*, 67, 491-499.
- Lackey, D. (1986). The high school coach: A pressure position. *Journal of Physical Education, Health, Recreation, and Dance*, 57(2), 28-32.
- Lepore, S. (1995). Cynicism, social support, and cardiovascular reactivity. *Health Psychology*, 14(3), 210-216.

- Lepore, S. (1998). Problems and prospects for the social support-reactivity hypothesis. *Annals of Behavioral Medicine, 20*, 257-269.
- Levy, A., Nicholls, A., Marchant, D., & Polman, R. (2009). Organisational stressors, coping, and coping effectiveness: A longitudinal study with an elite coach. *International Journal of Sports Science & Coaching, 4*(1), 31-45.
- Lox, C., Martin Ginis, K., Petruzzello, S. (2006). *The psychology of exercise: Integrating theory and practice* (2nd ed.). Scottsdale, AZ: Holcomb Hathaway.
- McCafferty, W., Gliner, J., & Horvath, S. (1978). The stress of coaching. *The Physician and Sports Medicine, 6*(2), 67-71.
- McFarlane, A., Norman, G., Streiner, D., & Roy, R. (1983). The process of social stress: Stable, reciprocal, and mediating relationships. *Journal of Health and Social Behavior, 24*, 160-173.
- Norman, G.J., DeVries, A.C., Cacioppo, J.T., & Berntson, G.G. (2011). Multilevel analysis of stress. In R. Contrada & A. Baum (Eds.), *The Handbook of Stress Science* (111-121). New York, NY: Springer Publishing Company.
- Pearlin, L. (1989). The sociological study of stress. *Journal of Health and Social Behavior, 30*, 241-256.
- Pidd, K. (2004). The impact of workplace support and identity on training transfer: A case study of drug and alcohol safety training in Australia. *International Journal of Training and Development, 8*, 274-288.

- Repetti, R. (1989). Effects of daily workload on subsequent behavior during marital interaction: The roles of social withdrawal and spouse support. *Journal of Personality and Social Psychology, 57*, 651-659.
- Rook, K. (2003). Exposure and reactivity to negative social exchanges: A preliminary investigation using daily diary data. *Journal of Gerontology: Psychological Sciences, 58B*(2), 100-111.
- Roth, D., Wiebe, D., Fillingim, R., & Shay, K. (1989). Life events, fitness, hardiness, and health: A simultaneous analysis of proposed stress-resistance effects. *Journal of Personality and Social Psychology, 57*, 136-142.
- Russell, D., & Cutrona, C. (1991). Social support, stress, and depression symptoms among the elderly: Test of a process model. *Psychology and aging, 6*, 190-201.
- Sandler, I., Braver, S., & Gensheimer, L. (2000). Stress: Theory, research, and action. In J. Rappaport, & E. Seidman (Eds.), *Handbook of Community Psychology*, New York, NY: Plenum Publishers.
- Sarason, I. & Sarason, B. (1986). Experimentally provided social support. *Journal of personality and social psychology, 50*, 1222-1225.
- Selye, H. (1974). *Stress without distress*. Philadelphia: J. B. Lippincott Company.
- Spanier, G. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and Family, 38*(15), 15-28.

- Stansfeld, S., & Candy, B. (2006). Psychosocial work environment and mental health: A meta-analytic review. *Scandinavian Journal of Work, Environment, and Health, 32*, 443–462
- Stern, A., & Cox, J. (1993). Teacher burnout the dull reality. *Music Educators Journal, 80*(3), 33.
- Stryker, S., & Burke, P. (2000). The past, present, and future of an identity theory. *Social Psychology Quarterly, 63*, 284-297.
- Swanson, V., & Power, K. (2001). Employees' perceptions of organizational restructuring: The role of social support. *Work and Stress, 15*, 161–178.
- Tardy, C. (1985). Social support measurement. *American Journal of Community Psychology, 13*(2), 187-202.
- Tajfel, H. (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations*. London: Academic Press.
- Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. In W. G. Austin & M. McCamish (Eds.), *The social psychology of intergroup relations* (pp. 7–24). Chicago: Nelson-Hall.
- Thorsteinsson, E., & James, J. (1999). A meta-analysis of the effects of experimental manipulations of social support during laboratory stress. *Psychology and Health, 14*, 869-886.
- Uchino, B. N. (2004). *Social support and physical health: Understanding the health consequences of relationships*. New Haven, CT: Yale University Press.

- Uchino, B., & Birmingham, W. (2011). Stress and social support. In R. Contrada & A. Baum (Eds.), *The Handbook of Stress Science* (111-121). New York, NY: Springer Publishing Company.
- Ullrich, A. (2009). The relationship of elementary teachers' years of teaching experience, perceptions of occupational stress, self-acceptance, and challenging student behavior to burnout symptoms in the United States and Germany. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 70(5-A), 1622.
- Vealey, R.S., Udry, E.M., Zimmerman, V., & Soliday, J. (1992). Intrapersonal and situational predictors of coaching burnout. *Journal of Sport and Exercise Psychology*, 14, 40-58.
- Weinert, C. (2011). PRQ85. Retrieved from <http://www.montana.edu/cweinert/prq85.html>
- Wills, T., & Cleary, S. (1996). How are social support effects mediated? A test with parental support and adolescent substance use. *Journal of Personality and Social Psychology*, 71, 937-952.
- Zhang, R., Zhu, J., Yue, H., & Zhu, C. (2010). Corporate philanthropic giving, advertising intensity, and industry competition level. *Journal of Business Ethics*, 94, 39-52. doi: 10.1007/s10551-009-0249-0

Table 1

Principal Axis Factoring with Promax Oblique Rotation Communalities and Loadings

Item	Communalities		Factor Loadings			
	Initial	Extraction	1	2	3	4
1	.695	.565	.490	-.401	.091	.395
2	.762	.603	.658	-.359	-.015	.203
3	.714	.442	.519	-.412	-.003	-.055
4	.814	.834	.659	-.296	-.188	-.526
5	.653	.566	.680	-.186	-.207	-.162
6	.756	.431	.486	-.338	-.186	-.214
7	.748	.572	.704	-.146	.083	-.221
8	.569	.391	.370	.484	-.067	.123
9	.678	.561	.497	.558	.037	-.035
10	.627	.475	.286	.612	-.010	.133
11	.344	.178	.355	.197	.017	-.114
12	.550	.303	.512	.072	-.006	.189
13	.640	.392	.350	.335	-.356	.175
14	.543	.408	.588	.151	-.190	-.064
15	.741	.640	.655	.283	-.340	-.125
16	.550	.178	.283	.176	-.154	.210
17	.671	.675	.615	.025	-.415	.353
18	.538	.329	.528	.087	-.150	-.141
19	.407	.157	.200	-.278	.172	.099

20	.550	.260	.328	-.199	-.022	.335
21	.684	.584	.523	-.262	.336	.359
22	.534	.341	.469	.030	.252	-.239
23	.711	.578	.392	.248	.567	-.203
24	.702	.704	.487	.111	.671	.064
25	.726	.516	.445	.194	.529	-.010

Note: Extraction Method: Principal Axis Factoring; The boxes are placed around items as they were divided into the original ASI Subscales

Table 2

Principal Axis Factoring with Promax Oblique Rotation Eigenvalues

Factor	Extraction Sum of Squared Loadings		Rotation Sums
	Total	% of Variance	Total
1	6.288	25.152	4.953
2	2.234	8.937	4.134
3	1.889	7.556	3.761
4	1.273	5.093	3.046

Note: Extraction Method: Principal Axis Factoring

Table 3

Principal Axis Factoring with Promax Oblique Rotation Factor Correlation Matrix

Factor	1	2	3	4
1	-			
2	.415	-		
3	.477	.221	-	
4	.225	.253	.175	-

Note: Extraction Method: Principal Axis Factoring; Rotation Method: Promax with Kaiser Normalization

Table 4

Frequency Statistics of Specific Demographic Items

	Frequency	Percent
Population Coached		
Men	5	7.5
Women	4	6.0
Both	58	86.6
Event Area		
Distance	40	59.7
Sprints/Hurdles	19	28.4
Jumps	13	19.4
Throws	26	38.8
Contract Type		
One-Year renewable	47	70.1
Multiple Years	14	20.9
Other	5	7.5
No Response	1	1.5
USATF Certification		
None	11	16.4
Level I	16	23.9
Level II	31	46.3
Level III	8	11.9
No Response	1	1.5
Other Certifications		
CSCS	1	1.5
HFI	1	1.5

USTFCCCA Level 1	1	1.5
Running	1	1.5
NCAA WCA DI & DII	1	1.5
USA Cycling Level 3	1	1.5
USAW	1	1.5
Type of University		
Public	33	49.3
Private	33	49.3
No Response	1	1.5

Table 5

Means and Standard Deviations for ASI Subscales and PRQ

Factor	Mean	Standard Deviation
ASI 1	16.33	5.78
ASI 2	26.19	7.87
ASI 4	6.82	2.87
PRQ	133.51	22.06

Note: ASI 1. Role-Based Stress; ASI 2. Task-Based Stress; ASI 4. Conflict mediating Stress; PRQ. Personal Resource Questionnaire: Part 2

Table 6

Pearson's Correlation Matrix of ASI subscales and PRQ

Scale	1	2	3	4
ASI 1	-			
ASI 2	.323**	-		
ASI 4	.253*	.377**	-	
PRQ	-.035	-.244*	-.100	-

Note: ASI 1. Role-Based Stress; ASI 2. Task-Based Stress; ASI 4. Conflict mediating Stress

****. Significant at $p < .01$ (2-tailed); ***. Significant at $p < .05$ (2-tailed).

Table 7

Hierarchical Regression Analysis for Task-Based Stress Subscale

	Beta	t	p	F	R ²	ΔR ²
Model 1						
PRQ	-.244	-1.916	.060	3.671	.060	.060
Model 2						
PRQ	-.261	-2.071	.043*			
Exp	-.068	-.542	.590			
CL	-.243	-1.939	.058	2.620	.123	.064

*Note: Exp. Years of Experience; CL. Competition Level; *.p < .05*

Table 8

Hierarchical Regression Analysis for Role-Based Stress Subscale

	Beta	t	<i>p</i>	F	R ²	ΔR ²
Model 1						
PRQ	-.054	-.408	.685	.167	.003	.003
Model 2						
PRQ	-.058	-.436	.665			
Exp	-.059	-.441	.661			
CL	.048	.359	.721	.162	.009	.006

Note: Exp. Years of Experience; CL. Competition Level

Table 9

Hierarchical Regression Analysis for Conflict-Mediating Stress Subscale

	Beta	t	p	F	R ²	ΔR ²
Model 1						
PRQ	-.118	-.908	.368	.825	.014	.014
Model 2						
PRQ	-.141	-1.082	.284			
Exp	-.215	-1.646	.105			
CL	.045	.345	.731	1.221	.061	.047

Note: Exp. Years of Experience; CL. Competition Level

APPENDIX A

Demographics Questionnaire

Please **SELECT OR ENTER** a response for the following items:

1. Age:

2. Years of head coaching experience at the collegiate level:

3. If you are not currently a head coach, please estimate your years of paid (salary, not as an assistantship) coaching experience at the collegiate level:

4. Which of the following best describes your position:

Head Coach Assistant Coach Volunteer Assistant Graduate Assistant

5. At which level of college athletics are you a coach?

Division I Division II Division III

6. Which of the following populations do you primarily coach?

Men Women Both

7. Which event area do you primarily coach (select all that apply)?

Distance Sprints & Hurdles Jumps Throws

8. Which of the following best describes your current job status (contract)?

1-year renewable Multiple Years Other

9. Select your USATF certification level and list any other certifications you may hold

Level I Level II Level III Other (list) None

10. Do you coach at a public or private university?

Public Private

11. Gender:

M F

12. How would you describe your race/ethnicity?

American Indian or Alaska Native

Asian or Asian American

Black or African American

Hawaiian or Other Pacific Islander

Hispanic or Latino

Non-Hispanic White or Caucasian

APPENDIX B

IRB Approval Document



Institutional Review Board

DATE: April 18, 2011

TO: Kurtis Kirkpatrick

FROM: Ball State University IRB

RE: IRB protocol # 234722-1

TITLE: The Relationship of Stress and Support Among Collegiate Coaches

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: April 18, 2011

The Institutional Review Board reviewed your protocol on April 18, 2011 and has determined the procedures you have proposed are appropriate for exemption under the federal regulations. As such, there will be no further review of your protocol, and you are cleared to proceed with the procedures outlined in your protocol. As an exempt study, there is no requirement for continuing review. Your protocol will remain on file with the IRB as a matter of record.

Editorial notes:

1. Exempt Level Review

While your project does not require continuing review, it is the responsibility of the P.I. (and, if applicable, faculty supervisor) to inform the IRB if the procedures presented in this protocol are to be modified or if problems related to human research participants arise in connection with this project. **Any procedural modifications must be evaluated by the IRB before being implemented, as some modifications may change the review status of this project.** Please contact please contact Jennifer Weaver Cotton at 765-285-5034 or jmweavercott@bsu.edu if you are unsure whether your proposed modification requires review or have any questions. Proposed modifications should be addressed in writing and submitted electronically to the IRB (<http://www.bsu.edu/irb>) for review. Please reference the above IRB protocol number in any communication to the IRB regarding this project.

Reminder: Even though your study is exempt from the relevant federal regulations of the Common Rule (45 CFR 46, subpart A), you and your research team are not exempt from ethical research practices and should therefore employ all protections for your participants and their data which are appropriate to your project.

APPENDIX C

Recruitment Email 1

Dear Potential Participant:

My name is Kurtis Kirkpatrick and I am a graduate student in the Sport and Exercise Psychology program at Ball State University in Muncie, IN. I am writing you today to ask for your voluntary participation in my Master's level thesis project, titled "The Relationship of Stress and Support Among Collegiate Coaches." The purpose of this study is to further understand the relationship between stressful events in the workplace and social support among collegiate coaches. This study requires you to currently be a paid coach at the collegiate level. Further explanation and acknowledgment of the requirements for participation will occur prior to beginning the questionnaire. If you are willing to offer 20 to 30 minutes of your time, please follow the link below to the online questionnaire. Thank you for your time.

Please forward this email to your coaching staff, as their voluntary participation would also be appreciated.

LINK

Sincerely,

Student: Kurtis Kirkpatrick

Advisor: Dr Lawrence Judge

APPENDIX D

Recruitment Email 2

Dear Potential Participant:

This is a follow up email for the Master's level thesis project titled "The Relationship of Stress and Support Among Collegiate Coaches." If you previously participated in the study, I greatly appreciate your time and effort, and you may simply delete this email. If you have yet to participate and are still willing to do so, please do within the next 7 days, otherwise the data will not be useable. Below is the body of the original email for your information. Thank you.

My name is Kurtis Kirkpatrick and I am a graduate student in the Sport and Exercise Psychology program at Ball State University in Muncie, IN. I am writing you today to ask for your voluntary participation in my Master's level thesis project, titled "The Relationship of Stress and Support Among Collegiate Coaches." The purpose of this study is to further understand the relationship between stressful events in the workplace and social support among collegiate coaches. This study requires you to currently be a paid coach at the collegiate level. Further explanation and acknowledgment of the requirements for participation will occur prior to beginning the questionnaire. If you are willing to offer 20 to 30 minutes of your time, please follow the link below to the online questionnaire. Thank you for your time.

Please forward this email to your coaching staff, as their voluntary participation would also be appreciated.

LINK

Sincerely,

Student: Kurtis Kirkpatrick

Advisor: Dr Lawrence Judge

APPENDIX E

Consent Document

The purpose of this Master's level thesis project is to examine the relationship between stress and support among collegiate coaches. Results of this study may ultimately help the field of sport and exercise psychology in better understanding this relationship. As part of this research, you will be asked to complete a questionnaire about your occupational stress and social support. This study requires that you are currently a paid coach at the collegiate level. If at any time you would like to discontinue your participation, feel free to do so as your participation is completely voluntary. Any questions you have about the study may be directed towards the investigator or faculty supervisor. All collected data will be anonymous, as no questions pertain to information that may identify you. Following the study, electronic data will remain in the primary researchers' password-protected computer and will be deleted after two years. Access to this information will only be given to primary researcher and the thesis committee members. For one's rights as a research subject, you may contact the following: Research Compliance, Office of Academic Research and Sponsored Programs, Ball State University, Muncie, IN 47306, (765) 285-5070, irb@bsu.edu.

If you would like to know more about this study, please contact Kurtis Kirkpatrick at kekirkpatric@bsu.edu.

Principal Investigator:

Kurtis Kirkpatrick
Graduate Student
Sport and Exercise Psychology
Ball State University
Muncie, IN 47306
Email: kekirkpatric@bsu.edu

Faculty Supervisor:

Dr. Lawrence Judge
PE, Sport, and Exercise Science
Ball State University
Muncie, IN 47306
Telephone: (765) 285-4211
Email: lwjudge@bsu.edu

I acknowledge that the requirements for my participation in this study have been explained to me, and that any questions or concerns have been resolved to my satisfaction. I have been informed that my responses on the questionnaire will be anonymous and not connected to my identity in any way. I understand that my participation is voluntary and that I am free to discontinue my participation at any time.

CLICK HERE TO ACKNOWLEDGE AND ADVANCE TO THE QUESTIONNAIRE

[click here to opt out](#)