



---

MSU Graduate Theses

---

Spring 2018

## Levels of Professional Stress in Missouri State University Sport Coaches


James Edgar Seratt

Missouri State University, JSeratt@MissouriState.edu

As with any intellectual project, the content and views expressed in this thesis may be considered objectionable by some readers. However, this student-scholar's work has been judged to have academic value by the student's thesis committee members trained in the discipline. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

---

Follow this and additional works at: <https://bearworks.missouristate.edu/theses>

 Part of the [Health and Physical Education Commons](#), [Other Mental and Social Health Commons](#), and the [Sports Studies Commons](#)

### Recommended Citation

Seratt, James Edgar, "Levels of Professional Stress in Missouri State University Sport Coaches" (2018). *MSU Graduate Theses*. 3251.

<https://bearworks.missouristate.edu/theses/3251>

This article or document was made available through BearWorks, the institutional repository of Missouri State University. The work contained in it may be protected by copyright and require permission of the copyright holder for reuse or redistribution.

For more information, please contact [BearWorks@library.missouristate.edu](mailto: BearWorks@library.missouristate.edu).

**LEVELS OF PROFESSIONAL STRESS IN MISSOURI STATE UNIVERSITY  
SPORT COACHES**

A Masters Thesis

Presented to

The Graduate College of  
Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Health Promotion and Wellness Management

By

James Seratt

May 2018

Copyright 2018 by James Edgar Seratt

# LEVELS OF STRESS IN MISSOURI STATE UNIVERSITY SPORT COACHES

Kinesiology

Missouri State University, May 2018

Master of Science

James Seratt

## ABSTRACT

Due to the particular nature of collegiate sport coaching, that is, the need to secure victories at all costs in order to ensure job security, collegiate sport coaches are a population that are likely to experience high levels of personal and professional stress. Previous research has indicated that coaches at all levels of competition, experience degrees and levels of stress similar to those experienced by individuals in other high stress professions, including police officers, medical professionals, and teachers. Furthermore, research has indicated that high levels of stress are positively correlated with decreased work performance. For this research, 45 Missouri State University sport coaches, including all full-time paid Head, Associate Head, and Assistant Coaches from all varsity sports, were invited to participate in an online survey designed to measure levels of professional stress. Of the 45, 19 responded. Results are as follows: male coaches ( $n=13$ ) exhibited higher levels of professional stress ( $130.07\pm 8.61$ ) than did female coaches ( $n=6$ ) ( $124.83\pm 11.58$ ). An independent *t-test* ( $p=0.05$ ) indicated that there was no statistically significant difference between the two groups ( $p=0.238$ ).

**KEYWORDS:** stress, coaches, college, athletics, professional

This abstract is approved as to form and content

---

Melinda Novik, PhD  
Chairperson, Advisory Committee  
Missouri State University

# LEVELS OF STRESS IN MISSOURI STATE UNIVERSITY SPORT COACHES

By

James Seratt

A Masters Thesis  
Submitted to the Graduate College  
Of Missouri State University  
In Partial Fulfillment of the Requirements  
For the Degree of Master of Science, Kinesiology

May 2018

Approved:

---

Melinda Novik, PhD

---

Riley Galloway, PhD

---

Wayne Mitchell, PhD

---

Julie Masterson, PhD: Dean, Graduate College

In the interest of academic freedom and the principle of free speech, approval of this thesis indicates the format is acceptable and meets the academic criteria for the discipline as determined by the faculty that constitute the thesis committee. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

## **ACKNOWLEDGEMENTS**

I would like to thank the following people for their support during the course of my graduate studies: Dr. Melinda Novik, who has helped me navigate the wilds of graduate academics and the thesis process without fault; my parents, Kent and Gayle who have provided unending encouragement and support, financial and emotional, through everything, and finally, Caitlin, who pushed me to make a change, and without whom, I would not be here.

Thank you everyone.

## TABLE OF CONTENTS

|   |    |
|---|----|
| Introduction.....                           | 1  |
| Delimitations.....                          | 3  |
| Assumptions.....                            | 4  |
| Key Variables.....                          | 4  |
| Operationalized Definitions.....            | 4  |
| Significance.....                           | 4  |
| Literature Review.....                      | 6  |
| Methods.....                                | 19 |
| Participants.....                           | 19 |
| Sampling Procedures.....                    | 19 |
| Measures.....                               | 20 |
| Analysis Methods.....                       | 21 |
| Results.....                                | 23 |
| Male vs. Female Coaches.....                | 25 |
| Male vs. Female Head Coaches.....           | 26 |
| Male vs. Female Assistant Coaches.....      | 27 |
| Years of Total Coaching Experience.....     | 28 |
| Coach Age.....                              | 28 |
| Team Gender.....                            | 29 |
| Perceived Stress Scale.....                 | 29 |
| Job Stress Scale.....                       | 30 |
| Discussion.....                             | 32 |
| Limitations.....                            | 39 |
| Recommendations.....                        | 43 |
| Summary.....                                | 43 |
| References.....                             | 45 |
| Appendix (Human Subjects IRB Approval)..... | 49 |

## LIST OF TABLES

|   |    |
|---|----|
| Table 1. Descriptive Information of Sample .....            | 24 |
| Table 2. Source Survey Reliability .....                    | 25 |
| Table 3. Independent <i>t-test</i> Results .....            | 26 |
| Table 4. Perceived Stress Scale <i>t-test</i> Results ..... | 30 |
| Table 5. Job Stress Scale <i>t-test</i> Results .....       | 31 |



## INTRODUCTION

Stress is a typically maladaptive condition that can, and does, manifest in both psychological and physiological ways (Schneiderman, Ironson, & Siegel, 2005). Stress, whether emotional, mental, physical, or social, is highly prevalent in the world of collegiate coaching, given that, especially at the higher or elite levels of competition, the demands of training and competition can be rigorous, and can impact even the most resilient of individuals.

Indeed, coaches, although their performance is scaled, viewed, and critiqued differently than that of athletes, are performers, and should be viewed as such by the academic and research communities. Performance, especially optimal performance, is marked by a number of characteristics, including, but not limited to, focus, attention to detail, prior preparation, and arousal. Thelwell, Weston, Greenlees, and Hutchings (2008), via research done by Gould, Greenleaf, Guinan, and Chung (2002), argue that due to the nature of coaching, which requires dealing with difficult and challenging situations like tactical or personnel decisions, athlete performance issues, and the maintenance of optimal psychological and emotional states, as well as the ability to multitask, make on-the-fly decisions, work effectively with parents, and act as mentors to athletes, coaches should be considered performers in their own right.

Collegiate coaching tends to be a field in which there exists a high degree of professional turnover, whether it be within the field (moving from one university to another) or leaving the field entirely. A 2016 report by Business Insider found that of the 128 NCAA Division I Football Bowl Subdivision (FBS) coaches (who were employed at the time of the article), 99 (77%) had been at their current school fewer than six years

(Gaines, 2016). A 2014 news article from the website “Saturday Down South” that discussed the average tenure of a head coach in the Southeastern Conference (SEC) found that, on average, a head coach spent 4.1 seasons (average of all 14 SEC schools) at one institution before seeking employment elsewhere (Smith, 2014). College coaches are also of a certain age, in addition to being fairly professionally mobile—a 2011 article in *Herald & Review* (Herald & Review, 2011) found that the median age (by league or conference) of college head football coaches ranged between 46 and 55.5 years old.

It is important that research be dedicated toward the understanding of stress in relation to the coaching population, as although coaches represent a small and specialized segment of the total American workforce, their professional value cannot be understated, and, more importantly, they are human beings, and deserve to be subject to the same potentially intervention-yielding research and exploration as athletes and other mainstream occupations. Additionally, coaches are employees who serve a specific function within a university setting, with research (Pflanz & Ogle, 2006) indicating that elevated levels of stress are negatively correlated with work performance and the number of workdays missed. As such, it is important to understand the relationship between stress and coaching performance in the university setting in order to both maximize the efficiency and effectiveness of coach performance, but to (potentially) develop intervention strategies designed to mitigate the levels of stress experienced by collegiate coaches. It is evidenced that high stress jobs, such as coaching, results in not only physical maladies such as weight gain or loss, chronic headaches, elevated blood pressure (*Stress Research*, 2014; Garbarino & Magnavita, 2015), but also emotional and/or mental complications, including depression, mental fatigue, burnout, and strained interpersonal

relationships (*Stress Research*, 2014; Parul et al., 2014). Therefore, this research will focus on gaining a better understanding of coaching stress among Missouri State University, NCAA Division 1A, coaches to see if the same workplace stressors exist within this subset of employees.

**Delimitations:** The delimitations are as follows: *population*—the research will focus only on Missouri State University sport coaches, including Head Coaches, Associate/Assistant Head Coaches, and Assistant Coaches; *setting*—the research will focus on coaches who are employed by and coach at Missouri State University; *gender/sex*—Missouri State University employs both male and female coaches, and as such, this research will take into account both genders; *experience*—the research will focus on coaches who have, at minimum, one year of full-time paid coaching experience; *position/employment status*—the research will focus on full-time paid head, associate/assistant head, and assistant coaches, but not graduate assistants, athletic trainers, support staff personnel, or unpaid interns or volunteers; *duration*—this research will be a cross-sectional, quantitative study; *measures*—this research will utilize a Composite Stress Survey that will draw from multiple valid and reliable scales, including the Perceived Stress Scale, the General Nordic Questionnaire, the Job Stress Scale, and the National Institute for Occupational Safety and Health (NIOSH) Generic Job Stress Questionnaire. These surveys have proven validity and reliability, and have been selected due to their topical appropriateness and ease of translation to a specific population.

**Assumptions:** It is assumed that since all collected data will be held in confidence, that participants will answer honestly, fully, and truthfully, and that given the brief amount of time required to complete the composite stress survey (<20 minutes), that those participants invited to participate will do so. Also, it is assumed that because the Composite Stress Survey will include items drawn from scales previously found to be both valid and reliable, that the data collected via the Composite Stress Survey will then too be valid and reliable.

**Key variables:** The key variable for this research is *stress*, specifically that pertaining to the professional environment. Other variables that will be viewed, but not measured, include *gender* (of both the coach and the coached team), *position* (head, associate head, assistant), and *sport*.

**Operationalized Definitions:** For the purpose of this research, the term “stress” will be defined as any physical, mental, or emotional response to a trying or challenging task that has a negative impact on an individual’s performance or quality of life. Stress encompasses all aspects of the human condition, and will not be limited to any specific definition. The term “coach” will be defined as any full-time varsity sport coach employed at and by Missouri State University.

**Significance:** This research is significant because it provides insight into the various ways in which Missouri State University coaches experience, perceive, and then report stress. All coaches experience stress, many of which come from similar sources, but the

literature revealed a distinct lack of research examining stress levels within the context of a specific or single university or academic institution. The data collected from this research, combined with possible future research of a broader scope, could lead to the development of intervention strategies in order to mitigate the amount of stress that Missouri State University sport coaches experience over the course of an academic semester and throughout an athletic competitive season.

## LITERATURE REVIEW

Stress has been researched in a variety of fields, extending into the academic, medical, health care, military and service industries, with valid and reliable instrumentation used to test the ways in which individuals perceive stress, as well as how stress impacts daily living and operation. Stress, for the purpose of this research, is defined as an appraisal or perception, and is the difference between perceived demands and available resources (Kelley, Eklund, & Ritter-Taylor, 1999).

Stress, as suggested by Kelley et al. (1999) is perception or appraisal. When presented with a situation or as an event occurs, an individual performs a cognitive appraisal of both the demands of a situation and the available resources, and determines if the available resources are sufficient to satisfy the demands of the situation. If the resources are sufficient, then a state of positive stress, known as eustress, occurs, which can create a beneficial environment for performance (Kelley et al., 1999). However, if the resources are determined to be insufficient, a state of distress occurs, which can cause a negative impact on performance (Kelley et al., 1999). As stated above, much of the research regarding the negative impacts of stress within the sport environment has been centered on athletes—a logical course of action, considering that stress can have a negative impact on performance, and the best measure of a coach's ability is his or her performance.

Coaching at any level is a complex profession marked by a variety of tasks and responsibilities. At any one moment, coaches, particularly those in the collegiate environment, need to be educators, experts in their particular field or sport, role models,

enforcers, administrators, policy makers, as well as any number of other roles specific to the moment. At its heart, coaching is about passing on knowledge from teacher (coach) to student (athlete) in order to maximize athletic performance and development. However, in the collegiate field, coaching is about producing wins, and in this, coaches are subject to many of the same stressors as are their athletes. Coaches are pressured to win at almost all costs, and even the best of coaches can find themselves unemployed as a result of a poor season. In certain instances, as in those pertaining to assistant coaches or strength coaches, employment is often dependent upon another person's performance, and loss of employment can result from circumstances entirely beyond an individual's control. This, combined with the other factors inherent in the coaching profession, as well as the large number of coaches employed at the NCAA Division I level alone—between 5000 and 6000 including both male and female sports (*List of current NCAA Division I baseball coaches.* (n.d.); *List of current NCAA Division I FBS football coaches.* (n.d.); *List of current NCAA Division I FCS football coaches.* (n.d.); *List of current NCAA Division I men's basketball coaches.* (n.d.); *List of current NCAA Division I men's ice hockey coaches.* (n.d.); *List of current NCAA Division I women's basketball coaches.* (n.d.); *List of NCAA Division I softball programs.* (n.d.)), could potentially result in a high degree of stress across a large percentage of the American workforce. Given the highly competitive nature of coaching and the drive to win, it should be deemed appropriate to surmise that coaches, as explained below, are subject to a high degree of stress, and are prone to suffer the effects thereof accordingly.

Stress can stem from a variety of sources, including the workplace, financial issues, relationships, or health. However, research performed by the American Institute of

Stress in (*Stress Research*, 2014) indicates that workplace or job stress is the primary cause of stress in the United States, followed by finances, health, and relationships. Additionally, per the same AIS research, 77% of individuals suffering from the negative effects of stress experience physical symptoms, while 73% of individuals experience psychological symptoms (*Stress Research*, 2014). As is discussed in greater detail below, stress is a “highly personalized phenomenon and can vary widely even in identical situations for different reasons” (*Stress Research*, 2014) and stress severity, even within the same field, can be different between individuals depending on the “magnitude of the demands that are being made and the individual’s sense of control or decision-making latitude he or she has in dealing with them” (*Stress Research*, 2014).

As stated above, previous research has examined the effects, causes, and potential intervention strategies of stress in various fields. Husain and Sajjad (2012) studied the perceived levels of stress in married and unmarried police officers in Pakistan—their results, which supported their hypothesis that married police officers would exhibit and experience a greater degree of depression, anxiety, and stress than unmarried officers, demonstrates that stress is an experiential event, perceived differently by different individuals, as suggested by Kelley et al. (1999), and can be influenced by a number of factors, including marital status or the presence of a familial support system. Police officers, though not a direct correlate to the coaching population, nor involved in the athletic community, are a good population to study due to the intense nature of their job and the various sources of both physical and emotional stress to which they are exposed. Findings from research performed on police officers offer valuable insight into the varying effects of high-stress environments. Garbarino and Magnavita (2016) found that



police officers who reported higher levels of occupational stress were more likely to exhibit signs of metabolic syndrome.

In 2014, Parul et al. found that of 100 Indian nurses, both male and female aged 15 or older, 51% reported moderate stress, while 3% reported severe stress. In the nursing field, as in any field, stress can impair performance, and can have a significant impact and cost on individuals in terms of personal health (mental and physical), wellbeing, job satisfaction, as well as the rate of professional or staff turnover and absenteeism (Parul et al., 2014). It should be noted that as with police officers and coaches, nursing specific stress comes from a variety of sources, including the “increasing use of technology, continuing rises in health care costs, and turbulence within the work environment” (Parul et al., 2014). Zulfqar, Khan, Shoaib, and Wamar (2017) found that among 12 “midcareer” female doctors, stress has a significant impact on quality of life and workplace performance. It was found that of the 12 surveyed doctors, all participants reported some form or state of physical or mental distress, including depression, anxiety, mood changes, emotional exhaustion, and general lack of physical wellbeing. A 2016 study Stanetic, Savic, and Racic found that of 151 surveyed doctors, 51% reported high levels of stress. Stanetic et al. (2016) surveyed both family physicians and hospital doctors, and while both populations reported “high” levels of stress (52.75 of family physicians and 51.7% of hospital doctors), there was no statistically significant difference in levels of reported stress between the two categories of participants.

However, age did have an impact on stress perception—physicians age 45 and older reported higher levels of emotional exhaustion than did their younger colleagues, suggesting that in the coaching field, where there exists a broad range of ages, levels of

stress and its associated maladies could be more prevalent in older coaches as compared to younger coaches. In the coaching field, this could be explained perhaps by long-term accumulation of emotional or physical exhaustion and fatigue, or as a result of increased responsibility and expectations for older, more experienced coaches.

Athletic Directors, though not coaches, exist and operate in the same professional arena as coaches, and are often subject to many of the same stressors and environmental factors as are coaches. Green and Reese (2006) identify that high school athletic directors, particularly those who serve dual roles as either director-coach or educator-director, suffer from a number of stressors, such as administrative conflicts, role conflicts, financial issues, social attitudes, and lack of facilities.

These stressors, and others, can impact overall job satisfaction, and thereby job performance. Green and Reese (2006) found that athletic directors, though not coaches, are exposed to a number of the same stressors as dedicated sport coaches, and are therefore subject to similar levels of professional and occupational stress as are sport coaches. Martin, Kelley and Dias (1999) found that female high school athletic directors experienced stress as a result of a number of coinciding factors such as work-related issues and social support levels. The levels of stress perceived and reported by the participants was influenced by, as stated above, work-related issues, especially those pertaining to interpersonal interactions, and social support levels. Both roles, athletic director and coach, require professional interpersonal interaction, and though some might argue otherwise, coaching performance and success, even at the highest levels of collegiate competition, is dependent upon the development and maintaining of interpersonal relationships. Participants in Martin et al's. (1999) study reported that the

interpersonal interaction of their position was the most stressful, and individuals who reported a higher level of social support reported lower levels of perceived stress.

Athletes and coaches are inextricably intertwined, and what affects the one will, in one manner or another, affect the other. Much research has been done on the effects of stress in athletes (Tabei, Fletcher, & Goodger, 2012; Nafian et al., 2014; Cowden & Meyer-Weitz, 2016; Macquet & Skalej, 2015; Francisco et al., 2016; Puente-Diaz & Anshel, 2005), and it has been found that athletes experience stress from a number of sources, but, much of the stress perceived, experienced and reported by athletes, especially those at the elite levels of competition, comes from an organizational or systematic source, such as team policies, rather than an individual source, such as practice or competition. Again, it is not unreasonable to suggest that coaches, who are subject to many of the same organizational or systematic stressors as are their athletes, would experience stress in ways similar to their athletes. However, much of the research regarding stress in coaching has focused on performance, rather than regarding coaches as an independent population and examining the effects of stress outside of a performance perspective (Thelwell et al., 2008). Baltzel et al. (2014) found that in high school coaches, parents were often cited as the primary source of stress, followed by administrative conflicts and the pressure to secure wins at all costs, suggesting that, as with athletes, coaches are subject to organizational stressors, as well as inter/personal stressors.

One factor that plays an important role in the perception, handling, and effects of stress within the coaching field is gender. Kelley et al. (1999) found that there are differences between genders regarding levels of perceived stress after examining self-

perceived and reported levels of stress in both male and female collegiate tennis coaches. Kelley et al. (1999) found that female coaches identified issues such as “negative media coverage,” “being a source of help to athletes,” and “not having enough time to devote to coaching responsibilities” as sources of stress more so than did their male counterparts. Female coaches also reported higher levels of emotional exhaustion and overall perceived stress than did their male counterparts, as found by Pastore and Judd (1993). Interestingly, research performed by Dale and Weinberg (1989) found that female coaches reported and exhibited lower levels of stress than did male coaches, suggesting that while gender may play an important role in the perception and experiential nature of stress in the coaching field, the situational context in which stress is experienced may be equally important.

Previous research into the causes and effects of coaching specific stress has yielded results suggesting that levels of perceived stress could also be related to an individual coach’s leadership style. Dale and Weinberg (1989) found that two primary styles of leadership exist—*consideration*, which describes an individual who is democratic and oriented toward interpersonal relations, and *initiating structure*, which is characterized by an individual who is authoritative and task oriented. Dale and Weinberg (1989) found that those coaches who exhibited a more “consideration” style of leadership experienced and reported a greater degree of stress than did their “initiating structure” counterparts, perhaps due to the increased amount of emotional investment put forth by the “consideration” coaches during interpersonal or coach-athlete interactions.

Previous research into the effects and status of stress in the coaching field, though not complete in its scope, has revealed that stress is a complex phenomenon, and is born

from a variety of environmental and personal factors. Within the coaching population, there are variations in the findings of stress, but the results are typically synonymous with one another—stress is a perception, and is a product of the comparison between demands and available resources. Stress, when applied in appropriately dosed amounts, can be beneficial, however, long term exposure can create negative outcomes. The PSS (Perceived Stress Scale) is the most commonly used tool for measuring perceived levels of stress, although other valid and reliable tools, such as the Workplace Stress Scale (WSS), developed by the American Institute of Stress, also exist.

Previous research has studied the relationship between levels of stress and a few key variables, primarily gender, sport coached, and level of competition. Other variables, such as leadership style, have also been examined (Dale & Weinberg, 1989). Some researchers have explored the organizational and systematic sources of stress (Fletcher & Hanton, 2003; Hendrix et al., 2000) rather than examining individual variables. Personal variables, including interpersonal interactions, time away from families, and having to sacrifice personal time for the sake of coaching responsibilities (Olusoga, Maynard, Butt, & Hays, 2014) were also examined in relation to their effect on stress. This research is intended to focus solely on the variable of stress, and will examine it within the context of gender, position, and sport coached.

This research utilized a Composite Stress Survey composed of varying valid and reliable preexisting stress scales. This Composite Stress Survey did not utilize each of the component scales in their entirety, but instead utilized items from each scale that are pertinent and applicable to the field of collegiate coaching. Each of the component scales is discussed below, with reliability and validity scores provided.

The Perceived Stress Scale, as developed by Cohen and colleagues in 1983, was based on Lazarus's transactional model of stress and coping, which argues that stress is an experience related to how individuals perceive the relationship between a demand and the resources available to satisfy that demand (Rice, 2012). The original design for the PSS included 14 items used to scale how individuals perceived their levels of stress, but was eventually reduced to a 10-item list. The instrument utilizes a summative Likert-type scale ranging from 0 (*never*) to 4 (*very often*), with 4 of the 10 items being scored in reverse (4 to 0). The total score for the PSS can range from 0-40, with a score of 0-13 indicating low stress, 14-26 indicating moderate stress, and 27-40 indicating high stress.

The survey items on the PSS were designed to evaluate how unpredictable, uncontrollable, and overloaded respondents found their lives (Cohen, Kamarck, & Mermelstein, 1983). Research has found that individuals with higher PSS scores often experienced a greater rate of attempting to quit smoking and failing, a non-compliance regarding blood-sugar control in diabetics, an elevated propensity to experience depressive symptoms as a result of stressful life events, and a greater frequency of colds (Cohen et al., 1983). The PSS has a finite temporal element, given that levels of perceived stress are often directly influenced by daily struggles, major life events, and fluctuations in an individual's ability to manage and cope with stress. Sheldon Cohen, the author of the PSS, suggests that the "predictive ability of the PSS is expected to fall off rapidly after four to eight weeks" (Cohen et al., 1983). Cronbach alpha scores for the PSS have been reported between 0.84-0.86, with a test-retest reliability of 0.85 (Cohen et al., 1983).

The General Nordic Questionnaire, developed in 1994 by the Nordic Council of Ministers, is an instrument intended to collect data about the basic psychological and social factors of the workplace environment. The reliability and validity of the General Nordic Questionnaire were examined in two stages across four Nordic countries, with testing dedicated to measuring the ability of the instrument to measure the central psychological and social factors of the workplace environment, as well as the ability to predict health and well-being of participants. The General Nordic Questionnaire utilizes 12 content areas and subscales, including job demands, leadership, social interaction, and organizational culture. The internal consistency of these scales falls between 0.60 and 0.88 as measured via Cronbach's alpha, and the test-retest reliability falls between 0.55 and 0.82 (Lindstrom, et al., 2000). The General Nordic Questionnaire utilizes a Likert-type scale ranging from 1 to 5. Each of the content areas of the Questionnaire utilizes different scale options ("Very seldom or never" to "Very often or always, or "Very little or not at all" to "Very much") depending on the specific focus of the content area.

The Job Stress Scale was drafted in 1983 by Parker and DeCotiis, and is a 13-item summative Likert-type scale that measures overall job stress using a 1 (strongly disagree) to 5 (strongly agree) range. The summed scores can range from 13-65, with higher scores indicating a higher level of job stress. Cronbach's alpha scores for the Job Stress Scale range from 0.74 to 0.89 across varying occupational groups and cultures, including a score of .84 when administered to nurses working in a Canadian hospital (Almendra, 2010).

The National Institute for Occupational Safety and Health (NIOSH) Generic Job Stress Questionnaire is a generalized job stress survey that was developed in response to

conflict and contradiction within the field of occupational stress survey measures and findings. As stated by the Center for Disease Control (CDC), “no single job stress measurement questionnaire currently used has such extensive psychometric support, and is so free from methodological difficulties, that it can be recommended without reservation,” (cdc.gov, 2014) and as such, findings from different job stress scales might prove to be unreliable or invalid, and therefore fail to accurately reflect the nature of the phenomenon they are seeking to measure. Additionally, varying job stress scales are often targeted at specific populations, and therefore may produce results that are not transferable or comparable to those of other populations. The NIOSH Generic Job Stress Questionnaire seeks to address these issues by providing a sufficiently lengthy survey that bases its reliability and validity in the findings of supporting literature, and provides general, non-population specific prompts that seek to eliminate any occupational bias from responses. The NIOSH Generic Job Stress Questionnaire can be modified via the addition of occupation-specific prompts, but is intended to be used in a general and exhaustive manner.

The NIOSH GJSQ is broken down into various subscales, each of which is scored in its own manner. All response items utilize a Likert-type scale ranging, with anchors dependent upon the specific subscale. The GJSQ examines 8 different subscales, including *role ambiguity*, *intragroup conflict*, *intergroup conflict*, *job future ambiguity*, *lack of alternative opportunities*, *quantitative workload*, and *variance in workload*. Each of these subscales, and the specific means by which they are measured, will be discussed in greater detail in the Methods section.



In summary, stress, whether physical, mental, emotional, or any combination thereof, is an inescapable aspect of the human condition, and is global in its reach and impact. However, stress, as evidenced above, is an experiential event, and affects individuals differently depending on, primarily, the individual's perception of imposed demands and his or her available resources. Stress is present in all professions and fields, however, some professions, including law enforcement, health care, academics, and athletics, are subject to what could be considered a high level of stress due to the relative nature of the profession. In coaching, success and performance are dictated by wins and losses, and longevity in the coaching profession is predicated upon a long-term series of victories and successes. It is the nature of coaching, as with healthcare workers or educators, that one's success is not entirely within one's control—that is, in coaching, a coach's success is ultimately dependent upon the performance of the athletes. It can be argued that in athletics and coaching, success is determined by prior preparation, and that it is the duty of the coach to adequately and properly prepare his or her athletes for competition, and that in this, a coach is ultimately responsible for his or her own *success* via the level of preparation provided to the athletes. However, preparation and execution are ultimately two different phenomena, and proper preparation does not always necessitate adequate or successful execution.

As with all professions, coaches are subject to performance based stressors, however, coaches, especially those at the collegiate level, are faced with some unique circumstances and varied sources of stress, including administrative and organizational stressors, player interactions, media exposure and coverage, as well as the extended length of many collegiate seasons. Any of these stressor could produce high levels of

stress in its own right, however, when experienced simultaneously, the results can be significant and damaging.

It is important then, as with the other professions discussed above, to understand how stress is perceived within the coaching environment, specifically at Missouri State University. As evidenced in studies into the levels and effects of stress in other professions, negative stress, or distress, can create long lasting negative and harmful outcomes in both health and performance, and should be subject to examination from both an organizational and individual perspective.

## METHODS

Prior approval for this project was obtained from the Missouri State University IRB (December 4, 2017; approval #2018-428), see Appendix.

**Participants:** Participants for this research were drawn from the Missouri State University varsity coaching staff. All participants ( $n=45$ ) possessed a minimum of one year of full-time, paid coaching experience at the Division-I level of competition, and were employed, at the time of data collection, as either a Head Coach, Associate/Assistant Head Coach, or Assistant Coach. Participants were both male and female, as well as any other gender identity signified by any of the participants. Participants were not drawn from any other positions, including graduate assistants, interns, athletic trainers, or other support staff. All participants had, at minimum, a bachelor's degree from an accredited university, but education level was a limiting factor or a variable included in the analysis.

**Sampling Procedures:** This research utilized convenience sampling, given that the Missouri State University coaching staff is an easily and readily accessible population. Future research would seek to utilize both convenience and snowball sampling methods, in order to continue to study the coaching population at Missouri State University and coaches from other Division-I universities. Participants were invited to participate in the research via email. This invitation email was sent by the researcher to the Assistant Athletic Director who forwarded the email and any attached materials to the Missouri

State University coaching staff. This email contained materials describing the research and its significance, a brief explanation of the participant's role in the research, and a link to the survey, which was hosted on SurveyMonkey.com.

This research was divided into two phases, a collection and an analysis phase. The data collection phase took place during the 2017 Winter Break, with the analysis phase initiating immediately after the completion of the data collection period (Spring 2018). Participation in this research was not mandatory, but was strongly encouraged.

**Measures:** This research focused on how varsity coaches at Missouri State University perceive and report professional stress. This research used a Composite Stress Survey of the researcher's design that consists of items drawn from different valid and reliable stress scales, namely the Perceived Stress Scale, the NIOSH Generic Job Stress Questionnaire, the General Nordic Questionnaire, and the Job Stress Scale. This research utilized only certain items from each of the above surveys, with items being selected based on their appropriateness and applicability to the context of this research. The Composite Stress Survey (CSS) is a 42-item continuous scale, with possible scores ranging from 42 to 210, with higher scores indicating a higher level of perceived professional stress.

Five of these items were borrowed from the Perceived Stress Scale, which focuses on an individual's feelings or perceptions about workplace stress within the last month. These items have response options ranging from *never* to *very often*. The original scale was found to have good reliability (Cronbach's alpha of 0.84-0.86).

Seven of the Composite Stress Survey items were borrowed from the General Nordic Questionnaire 34+, which focuses on a variety of work-related stressors from a multitude of sources. These selected items have response options ranging from (relative to the particular item) *very inaccurate* to *very accurate*, *strongly disagree* to *strongly agree*, *somewhat uncertain* to *somewhat certain*, *very easy* to *not easy at all*, *don't have such person* to *very much*, *rarely* to *very often*, and *hardly any* to *a great deal*. The original GNQ displayed overall good reliability (Cronbach's alpha score of 0.61-0.83).

Seven items were borrowed from the Job Stress Scale, a 13 summative Likert-type scale that has response options ranging from *strongly disagree* to *strongly agree*. The original scale has good reliability (Cronbach's alpha of 0.74-0.86). The Job Stress Scale focuses on an individual's perceptions of stress created from work-related or professional sources, and covers both psychological and physical stress.

Twenty-three items were borrowed from The National Institute for Occupational Safety and Health Generic Job Stress Questionnaire (NIOSH GJSQ). The NIOSH GJSQ covers all aspects of job related stress, including the physical environment, social interaction, and workload. The original GJSQ has 21 subscales, but only 7 of these subscales (and the items from each of the subscales) will be used in this research. These subscales have good reliability (Cronbach's alpha of 0.65-0.86). The original GJSQ uses a Likert-type response scale with response options that are specific to the particular subscale or set of items.

**Analysis Methods:** Data was collected via SurveyMonkey.com, and was exported into SPSS for analysis. The Composite Stress Survey (CSS) collected data along a continuous

scale. Once the data was cleaned and organized, independent *t-tests* were run to test the means between male and female coaches along different categories. All *t-tests* utilized a 95% confidence interval, with a  $p=0.05$ .

This data was analyzed via a *t-test* to compare the mean scores of the CSS between male and female coaches and to determine if there was a statistically significant difference between the scores of the two populations. Primary analysis examined the overall scores of male and female coaches as whole populations, with secondary analysis examining stress scores for male and female: head coaches, assistant coaches, age, years of total experience, and in relation to the gender of the athletes coached. However, again, the primary focus of this research was to examine levels of professional stress in Missouri State University coaches, and the analysis thereof focused primarily on the scores of male coaches versus female coaches as standalone populations.

Of the 42 items included in the CSS, all of which were scored on a Likert-type scale of 1-5, 15 items were reverse coded in SPSS, with a new scale of 5-1. Additionally, one participant failed to complete one of the survey items (Question 8, Item 3—“In the last month, how often have you felt nervous and ‘stressed’?”). However, this participant completed all other response items, and as such, data for this item was extrapolated via use of the “Series mean” function in SPSS, utilizing the mean of the other scores for this response item. This participant’s other responses indicated a fairly regular and average response pattern, meaning that his or her scores were not overly varied in their range, justifying the use of the “Series mean” function and replacing the missing data.

## RESULTS

Forty-five full-time Missouri State University sport coaches, including Head, Associate Head, and Assistant coaches were invited to participate in this survey. Of the 45 coaches invited to participate, 19 coaches responded (42% participation). Participant mean age was  $43.05 \pm 13.39$  years. The average total career length was  $18.88 \pm 14.28$  years, while the average career length at Missouri State University was  $16.18 \pm 12.54$  years. Of the 19 participants, 11 (52.94%) were Head Coaches, 3 (17.65%) were Associate Head Coaches, and 5 (29.41%) were Assistant Coaches. Thirteen participants (68.42%) were male, with 6 (31.57%) were female. Eighteen participants (94.73%) were of White/Caucasian heritage, with 1 (5.26%) participant of Black/African-American heritage. Ten coaches (52.63%) reported working with male athletes, 7 coaches (36.84%) reported working with female athletes, and 2 coaches (10.53%) reported working with co-ed athletes.

This demographic information is displayed below in **Table 1**. Population age and experience were unavailable, and as such, are not listed in the table. Additionally, due to lack of participation, it was determined that establishing accurate ethnic/racial identities for those coaches who did not participate in the CSS was both impossible and unethical. As such, population ethnic/racial identity data is not included in the table below.

As stated in Chapter 3, this research sought to explore and measure levels of self-perceived professional stress in Missouri State University sport coaches. The 19 participants participated in the Composite Stress Survey ( $\alpha=.561$ ), a 42-item survey with a possible score range of 42-210. Higher scores indicate higher levels of stress, with

stress scores being broken down into 3 categories—scores ranging from 42-98 indicate a “low” level of stress, scores ranging from 99-155 indicate a “moderate” level of stress, and scores ranging from 156-210 indicate a “high” level of stress.

**Table 1.** Descriptive Information of Sample. Data are divided by categories and shown by scores.

| Demographic              | Sample Average Score | Population   |
|--------------------------|----------------------|--------------|
|                          | <i>n</i> =19         | <i>n</i> =45 |
| Age (years)              | 43.05±13.39          | N/A          |
| Male Coach (%)           | 66.67%               | 69%          |
| Female Coach (%)         | 33.33%               | 29%          |
| Total Experience (years) | 18.88±14.28          | N/A          |
| MSU Experience (years)   | 16.18±12.54          | N/A          |
| Head Coach (%)           | 52.94%               | 42%          |
| Associate Head Coach (%) | 17.65%               | 13%          |
| Assistant Coach (%)      | 29.41%               | 44%          |
| White/Caucasian (%)      | 94.73%               | N/A          |
| Black/African American   | 5.26%                | N/A          |
| Male Team (%)            | 52.63%               | 46%          |
| Female Team (%)          | 38.64%               | 46%          |
| Co-Ed Team (%)           | 10.53%               | 6%           |

The Composite Stress Survey was created through the selection of other previously existing stress surveys. The reliability and validity of these source surveys was discussed in Chapters 2 and 3. However, given that the source surveys were not used in their entirety, the reliability of these source items was subject to change. The reliability



of each of the source surveys, as selected for use in the CSS was tested in SPSS, via use of the “Reliability Analysis” function. These scores can be found in **Table 2** below.

**Table 2.** Source Survey Reliability. Data are divided by source survey and shown by Cronbach’s alpha scores.

| Source Survey                | Original Cronbach’s alpha | Cronbach’s alpha when used in the CSS |
|------------------------------|---------------------------|---------------------------------------|
| Perceived Stress Scale       | .84-.86                   | .91                                   |
| General Nordic Questionnaire | .60-.88                   | .53                                   |
| Job Stress Scale             | .74-.89                   | .77                                   |
| NIOSH                        | .65-.86                   | .34                                   |

**Male vs. Female Coaches:** The primary focus of this research was to examine and measure levels of stress in male versus female coaches as standalone populations. As indicated in **Table 3**, male coaches ( $n=13$ ) had an average score of  $130.07\pm 8.61$ , indicating a moderate level of professional stress. Female coaches ( $n=6$ ) had an average score of  $124.83\pm 11.58$ , again indicating a moderate level of professional stress, albeit lower than their male counterparts. An independent samples *t-test* indicated that there was no statistically significant difference between mean scores for male versus female coaches ( $p=0.283$ ).

Additionally, this research explored different subsets the male and female coaching staff, including male Head Coach versus female Head Coach, male vs. female Associate Head/Assistant Coach, coaches with more or less than 20 years of total coaching experience, coaches aged under or over 40 years old, and the gender of the coached team.

Regarding team gender, the data revealed that there were no female coaches who coach all-male teams, as such, there was no need to perform an analysis of that sample. Additionally, regarding co-ed teams, there were only two coaches, one male and one

**Table 3.** Independent *t-test* Results. Data are divided categorically and shown by scores.

| Average Score        | Coach Gender | n= | Mean   | Std. Deviation | Sig   | Cohen's-d |
|----------------------|--------------|----|--------|----------------|-------|-----------|
| Overall CSS          | Male         | 13 | 130.07 | 8.61           | 0.283 | 0.51      |
|                      | Female       | 6  | 124.83 | 11.58          |       |           |
| Head Coach           | Male         | 7  | 130.71 | 5.94           | 0.893 | 0.64      |
|                      | Female       | 3  | 121.33 | 6.65           |       |           |
| Assistant Coach      | Male         | 6  | 131.16 | 11.44          | 0.765 | 0.02      |
|                      | Female       | 3  | 128.33 | 15.94          |       |           |
| <20 years experience | Male         | 7  | 130.42 | 10.73          | 0.916 | 0.08      |
|                      | Female       | 3  | 129.66 | 8.32           |       |           |
| >20 years experience | Male         | 5  | 130.80 | 6.26           | 0.173 | 0.99      |
|                      | Female       | 3  | 120.00 | 14.00          |       |           |
| <40 years old        | Male         | 7  | 130.42 | 10.73          | 0.949 | 0.05      |
|                      | Female       | 2  | 131.00 | 11.31          |       |           |
| >40 years old        | Male         | 5  | 130.80 | 6.26           | 0.184 | 0.95      |
|                      | Female       | 4  | 121.75 | 11.95          |       |           |
| Female Team          | Male         | 2  | 131.00 | 2.82           | .302  | 1.19      |
|                      | Female       | 5  | 122.00 | 10.36          |       |           |

female, both of whom coached the same sport (Missouri State University fields only one co-ed team), that reported coaching a co-ed team. As such, no analysis was performed on that sample either. However, both male and female coaches reported coaching all-female teams, and were thus included in the analysis.

**Male vs. Female Head Coaches:** Male Head Coaches ( $n=7$ ) exhibited higher levels of stress than did their female counterparts ( $n=3$ ), with an average score of  $130.71 \pm 5.94$  compared to an average score of  $121.33 \pm 6.65$  for female Head Coaches. An independent

samples *t-test* indicated that there was no statistically significant difference between the two groups ( $p=0.893$ ). Cohen's *d* was calculated for each category, with a range of .02 to 1.19. On average, male coaches' stress levels tended to be higher than that of female coaches.

**Male vs. Female Assistant Coaches:** Male Associate Head/Assistant Coaches ( $n=6$ ) were compared to female Associate Head/Assistant Coaches ( $n=3$ ). Male coaches exhibited a higher average score,  $131.16\pm 11.44$ , than did their female counterparts, who averaged  $128.33\pm 15.94$ . An independent *t-test* indicated that there was not statistically significant difference between the two groups ( $p=0.765$ ). It should be noted that for purposes of analysis and discussion, Associate Head Coaches and Assistant Coaches were grouped together, rather than being measured as separate samples. Although coaching roles vary from team to team, meaning that the duties of some Associate Head Coaches might align more closely to those of the Head Coach, or to those of the Assistant Coaches, it is the opinion of this researcher that the roles and responsibilities, and therefore the exposure and response to stress, of the Associate Head Coaches at Missouri State University align most closely with those of the Assistant Coaches. It is for this reason that the Associate Head Coaches and Assistant Coaches are treated as one sample rather than two distinct samples. Male Associate Head/Assistant Coaches ( $n=6$ ) were compared to female Associate Head/Assistant Coaches ( $n=3$ ). Male coaches exhibited a higher average score,  $131.16\pm 11.44$ , than did their female counterparts, who averaged  $128.33\pm 15.94$ . An independent *t-test* indicated that there was not statistically significant difference between the two groups ( $p=0.765$ ).

**Years of Total Coaching Experience:** Participant responses were also organized by the total years of coaching experience. For the purposes of analysis, responses were categorized as “less than 20 years total experience” and “more than 20 years total experience.” Of the 13 male participants, one participant failed to respond to this item, and as such, the data is reflective of 12 male coach responses rather than 13. All six female coaches responded to this item and are included in the analysis. The mean score for male coaches (all positions) with less than 20 years of total experience ( $n=7$ ) was  $130.42\pm 10.73$ , while the mean score for all female coaches ( $n=3$ ) was  $129.66\pm 8.32$ . An independent *t-test* indicated that there was no statistically significant differences between the two groups ( $p=0.916$ ). The mean score for male coaches with more than 20 years of total experience ( $n=5$ ) was  $130.80\pm 6.26$ , while the mean score for female coaches with more than 20 years of total experience ( $n=3$ ) was  $120.00\pm 14.00$ . An independent *t-test* indicated that there was no statistically significant difference between the two groups ( $p=.173$ ).

**Coach Age:** Participant responses were also grouped by age. Responses were categorized as either “under 40 years old” or “over 40 years old.” Again, only 12 male coaches responded to this item, and the results of the analysis are indicative of those 12 responses. All 6 female coaches responded to this item. Male coaches under 40 years old ( $n=7$ ) had a mean score of  $130.42\pm 10.73$ , while female coaches under 40 years old ( $n=2$ ) had a mean score of  $131.00\pm 11.31$ . An independent *t-test* indicated that there was no statistically significant difference between the two groups ( $p=0.949$ ). Male coaches aged over 40 years old ( $n=5$ ) had a mean score of  $130.80\pm 6.26$ , and female coaches over 40

years old had a mean score of  $121.75 \pm 11.95$ . An independent *t-test* indicated no statistically significant difference between the two groups ( $p=0.184$ ).

**Team Gender:** As stated above, responses were group by the gender of the team coached. The data revealed that female coaches worked with either co-ed teams ( $n=1$ ) or all-female teams ( $n=5$ ), but did not work with all-male teams. Male coaches responded working with co-ed teams ( $n=1$ ), all-female teams ( $n=2$ ), or all-male teams ( $n=10$ ). For purposes of the analysis, due to the lack of female coaches who worked with exclusively male teams, and the lack of sample size regarding coaches who worked with co-ed teams ( $n=2$ , 1 male and 1 female), only those coaches who reported working with all female teams were examined. The mean score for male coaches who work with all-female teams ( $n=2$ ) was  $131.00 \pm 2.82$ , while the mean score for female coaches who work with all-female teams ( $n=5$ ) was  $122.00 \pm 1.36$ . An independent *t-test* indicated no statistically significant difference between the two groups ( $p=0.302$ ).

The above information is included in **Table 3**, which is displayed above.

**Perceived Stress Scale:** Additionally, the data was reviewed by comparing the mean scores from two of the source surveys. Male and female coach scores for those items taken from the Perceived Stress Scale ( $\alpha=0.91$ ) and the Job Stress Scale ( $\alpha=0.77$ ). These two source surveys displayed the greatest reliability when used as part of the CSS, and were selected for analysis based on those high levels of reliability.

On the Perceived Stress Scale, male coaches had a mean score of  $13.92 \pm 4.19$ , while female coaches had a mean score of  $10.83 \pm 3.19$ . The items taken from the PSS

(Items 38-42 on the Composite Stress Survey) focused on professional stress generated from control, or lack thereof, within the last month. Higher scores, as those reported by male coaches, suggest a greater degree or level of stress from perceived control issues, meaning that Missouri State University male coaches reported greater levels of stress stemming from control related issues than did the MSU female coaches. An independent *t-test* determined that there was no statistically significant difference between the scores for male and female coaches ( $p=0.479$ ). These results are listed in **Table 4** below.

**Table 4.** Perceived Stress Scale *t-test* Results. Data is shown by male versus female score.

| <b>Gender</b> | <b><i>N</i></b> | <b>Mean</b> | <b>Std. Deviation</b> | <b>Sig.</b> |
|---------------|-----------------|-------------|-----------------------|-------------|
| Male          | 13              | 13.92       | 4.19                  | 0.479       |
| Female        | 6               | 10.83       | 3.19                  |             |

**Job Stress Scale:** On the Job Stress Scale, male coaches had a mean score of  $15.62 \pm 3.62$ , while female coaches had a mean score of  $14.33 \pm 3.78$ . Items selected from the Job Stress Scale sought to measure professional stress as a response to qualitative workload. Male coaches had a greater mean score than did female coaches, although female coaches had greater variation in their responses, albeit by only .16, than did their male counterparts. As discussed earlier, as with all mean scores, the difference in scores between male and female coach responses may be a result of the difference in sample sizes, however, the data does suggest that male coaches, regardless of their position in the hierarchy, age, or total years of coaching experience, experienced greater levels of stress as a result of issues related to qualitative workload than did female coaches. An independent *t-test*

determined that there was no statistically significant differences between scores for male and female coaches ( $p=0.974$ ). This information is listed in **Table 5** below.

**Table 5.** Job Stress Scale *t-test* Results. Data is shown by male vs. female scores.

---

| <b>Gender</b> | <b><i>N</i></b> | <b>Mean</b> | <b>Std. Deviation</b> | <b>Sig.</b> |
|---------------|-----------------|-------------|-----------------------|-------------|
| Male          | 13              | 15.62       | 3.62                  | 0.974       |
| Female        | 6               | 14.33       | 3.78                  |             |

---

## DISCUSSION

This research sought to explore the levels or degrees of professional stress in Missouri State University sport coaches. Previous research into the levels of stress in other traditionally “high-stress” professions, such as police officers, teachers, nurses, and athletic directors, revealed that, across all professions, stress, whether from professional or personal sources, was very high, and could have serious consequences on not only work performance, but personal health (mental, emotional, and physical) as well. High levels of stress were found to result in higher rates of absenteeism and presenteeism (poor work quality, or lack of productivity, even when an employee is physically present at work), decreased work performance, as well as increased rates of hypertension, metabolic syndrome, depression, and anxiety (*Stress Research* 2014; Husain & Saijad, 2012; Garbarino & Magnavita, 2016; Parul et al., 2014; Zulfiqar et al., 2017; Stanetic et al., 2016).

It was theorized that given the level of competition at which Missouri State University sport coaches participate, as well as previous research into levels of stress experienced by both coaches and athletic directors (Baltzell, 2017; Green & Reese, 2006), that the varsity (meaning not affiliated with a club or intramural athletic team) sport coaches at MSU would experience high levels of professional stress.

In order to measure levels of professional stress in MSU coaches, a survey, entitled the “Composite Stress Survey” was created by selecting previously existing stress surveys, and borrowing items from those surveys that were easily applicable to both a generalized population and the population in question (MSU sport coaches). The



entirety of the MSU coaching staff (Head, Associate Head, and Assistant Coaches, including Strength and Conditioning Coaches) [ $n=45$ ] were invited via email to participate in the survey. Of the 45 coaches invited to participate, 19 responded—18 via online participation, and 1 via hardcopy participation.

Survey results were collected via surveymonkey.com and were exported into SPSS for analysis. Analysis was done via use of multiple independent *t-tests*, which compared the mean CSS scores for male and female coaches across multiple categories. These categories included head coach, assistant coach, less and more than 20 years total experience, younger and older than 40 years of age, and the gender of the coached team (see **Table 3**).

Overall, male coaches had a greater mean score ( $130.07\pm 8.61$ ) than did their female counterparts ( $124.83\pm 11.58$ ). Based on the possible range of scores for the CSS (42-210), both male and female coaches displayed a “moderate” level of stress, falling within the 99-155 range. Male coaches exhibited a greater mean score than did female coaches, however, this could be a result of a greater number of male coaches participating in the CSS than female coaches. It is impossible to state how much more, or less, one sport may be to coach than another, given that the demands of each sport are relative to that sport, and responses to stress are individual and contextual (Kelley et al., 1999). As such, it cannot be argued that male coaches exhibit greater levels of stress than do female coaches due to the sport they coach, suggesting again that stress is a relative and individual experience that is dependent upon the person experience it. Female coaches displayed a greater deviation in their responses than did male coaches, suggesting a less uniform manner of experiencing and handling stress than male coaches.

Effect size for each category was also examined, with ranges from 0.07-1.48 occurring. This suggests that, at least for some of the categories, gender does impact the ways in which stress is perceived and then reported.

Male head coaches had a greater mean score than did female head coaches,  $130.71 \pm 5.94$  as compared to  $121.33 \pm 6.65$ . It could be argued that the male head coaches who responded to and participated in the survey are in charge of a greater number of both athletes and coaches than are their female counterparts, and as such may experience greater levels of stress. However, staff and athlete population was not included in the survey, and thus cannot be included in the analysis. Again, both male and female head coaches experienced “moderate” levels of stress, although female head coaches exhibited a greater deviation than did their male counterparts, suggesting that while female coaches may experience lesser levels of stress than do male coaches, or perhaps perceive and react to it better than do male coaches, their individual responses have a greater range or variance, whereas male head coaches tend to experience and respond to stress in similar fashion to each other.

Male assistant coaches had a greater mean score ( $131.16 \pm 11.44$ ) than did female assistant coaches ( $128.33 \pm 15.94$ ). Interestingly, both male and female assistant coaches scored higher than did male and female head coaches. The traditional line of thought might suggest that head coaches, regardless of sport or gender, would experience greater levels of stress than would an assistant coach, given the relative amount of responsibility each coach might assume. However, head coaches, while ultimately assuming overall responsibility of the success and failure of a team, have the luxury of delegating tasks and responsibilities to their staff, who are then responsible for completion of those tasks.

Assistant coaches at Missouri State University are often tasked with doing much more than simply “coaching”—depending on the size and needs of the team, assistant coaches are tasked with overseeing certain recruiting regions, ensuring academic adherence and eligibility, coordinating with other departments, enforcing team and university policies, scheduling travel and lodging accommodations, as well as assisting with tactical planning and player development. Given this potentially lengthy list of tasks, it is not surprising that MSU assistant coaches, both male and female, exhibited higher levels of stress than did the head coaches. All assistant coaches, regardless of gender, exhibited “moderate” levels of professional stress.

Regarding experience, the data revealed that there was no real difference between average scores of male and female coaches with less than 20 years of experience, and male and female coaches with more than 20 years of experience. Male coaches with less than 20 years of experience had a mean score of  $130.42 \pm 10.73$  while female coaches with less than 20 years of experience had a mean score of  $129.66 \pm 8.32$ . Male coaches with more than 20 years of experience had a mean score of  $130.80 \pm 6.26$ , while female coaches with more than 20 years of experience had a mean score of  $120.00 \pm 14.00$ . Based on the data, it would seem that total years of experience, at least regarding the sample at MSU, doesn't play a large role in how a coach experiences stress. Male coaches with less than 20 years of experience had greater variation in their scores than did male coaches with more than 20 years of experience, suggesting that while the two populations might experience stress in similar ways overall, coaches with more than 20 years of experience are better able to handle the effects of professional stress, and thus respond to it in a more uniform manner. However, the inverse was true for female coaches—those with less than

20 years of experience had less variation in their responses than did those with more than 20 years of experience, again suggesting that interpretation and reaction to stress is a relative, individual, and contextual phenomenon. All coaches, regardless of experience, displayed a “moderate” level of professional stress.

Age, within the context of the sample, was not found to be a significant factor in mean scores for male coaches, although it did affect the scores of female coaches. Male coaches under 40 years old had a mean score of  $130.42 \pm 13.73$ , while female coaches had a mean score of  $131.00 \pm 11.31$ . Male coaches over 40 years old had a mean score of  $130.80 \pm 6.26$ , while female coaches over 40 years old had a mean score of  $121.75 \pm 11.95$ . As evidenced by the data, the mean scores for male coaches under and over 40 years old were almost identical, suggesting that for the male coaches at MSU, age is not a determining factor in levels of stress. Female coaches under 40 years old had a mean score of  $131.00 \pm 11.31$ , while female coaches over 40 years old had a mean score of  $121.75 \pm 11.95$ , suggesting that for the female coaches at MSU, age is a factor in determining levels of professional stress, and that those coaches over 40 years either experience less stress than do their younger counterparts, or are able to handle it more efficiently and effectively. All coaches, regardless of age, displayed a “moderate” level of professional stress.

Initially, coach responses were to be analyzed by the gender of their respective teams (male teams, female teams, and co-ed teams). However, the data revealed that the only group for which analysis was appropriate was male and female coaches who coached all-female teams. There were no female coaches who coached all-male teams, and as discussed earlier, MSU fields only one co-ed team, which is coached by one male

and one female coach, thus providing too small of a sample size for analysis. Male coaches of female teams had a mean score of  $131.00 \pm 2.82$ , while female coaches of female teams had a mean score of  $122.00 \pm 10.36$ . Both sample populations displayed a “moderate” level of professional stress, though male coaches displayed a higher mean score than did female coaches. The reasons for this are unclear—there may exist some form of same-sex cooperation and understanding between female coaches and female athletes that does not exist between male coaches and female athletes. Alternatively, those male coaches who work with all-female teams may have larger rosters than female coaches of all-female teams, leading to higher levels of stress as a result of volume and intensity of exposure to athletes. Additionally, there may be other factors at work that are not immediately obvious, and that could be explored in further research.

Analysis of this research examined not only the overall mean scores for male and female coaches, or male and female coaches along certain categorical lines, but also in relation to their mean scores for two of the source surveys used in the CSS. The two source surveys selected for analysis were the Perceived Stress Scale, which is a measure of the degree to which an individual believes situations in his or her life to be stressful, and is built around the concept of control, and the Job Stress Scale, which measures stress in response to qualitative workload. Male coaches had a higher mean score on the PSS, indicating that male coaches find more situations in their professional lives to be stressful than do their female counterparts, and that they, male coaches, have, perhaps, a greater need for control over their professional environments than do female coaches. Male coaches also had a higher mean score on the JSS, indicating that male coaches find their workload to be more stressful than do their female counterparts. As stated previously, due

to the contextual and individual nature of stress (Kelley et al., 1999), it is impossible to say that one sport is more stressful to coach than another, suggesting that male coaches might simply be more susceptible to the effects of a stressful workload or environment than are female coaches, and that professional stress, at least in relation to the two source surveys discussed above, is not wholly due to the particular sport that a coach works with. Conversely, it is entirely possible that one sport may be more stressful than another, given the size of the roster, the demands on the coach/team to win, the level of competition, the overall wins-losses record, and any other number of factors. However, this research did not take into account or explore those variables, and as such, their influence is entirely speculative.

Female coaches, with the exception of one category (less than 40 years old), had lower mean scores than did male coaches. One possible reason for the lower mean scores among female coaches is the success of MSU female coaches and teams as compared to male coaches and male teams. While this variable may have some merit and influence on the overall MSU coaching staff, based on the responses gathered from the CSS, the overall win-loss ratio between male and female coaches is relatively the same, suggesting that no one group should experience stress as a result of success or failure more than another group. Further research could examine the relationship between wins-losses and relative levels of stress in MSU coaches, ideally with the population as a whole.

Overall, those MSU sport coaches who participated in the CSS exhibited mean scores that fell into the “moderate” range of professional stress. These findings challenge the hypothesis that MSU sport coaches, given their positions as collegiate sport coaches competing at the Division-I level, would exhibit “high” levels of stress. Some of the

possible reasons for this have already been discussed (small sample size, non-equivalent sample, potential self-report bias). In addition to the aforementioned possible factors, it may be of value to consider the fact that, perhaps, Missouri State University coaches, at least at the time they participated in the CSS, simply do not suffer from high levels of professional stress. Missouri State University athletics are, without a doubt, competitive, both within the context of their approach to sport and philosophy of preparation and development, as well as within the context of relative skill levels within the Missouri Valley Conference and beyond. However, it could be surmised that the relative level of competition at Missouri State University is less than that of a larger, more dominant institution such as Alabama or the University of Missouri (Mizzou). Because of this, the drive for MSU coaches to succeed, at the risk of losing their jobs for not doing so, may be less than that of coaches at more competitive institutions, and as such, MSU coaches are not as stressed over the possibility of losing their positions in the event of a losing season.

That is not to suggest, to be clear, that MSU coaches are not concerned about winning or being competitive, or about maintaining their positions as coaches, only that job security at MSU, especially for second- and third-tier teams (such as soccer, golf, and tennis, as compared to football or basketball), may be higher than at other universities, thus creating an environment that is less likely to produce high levels of stress.

**Limitations:** This research was subject to a number of limitations, primary of which was participation. Including Strength and Conditioning, Missouri State University employs 45 full-time sport coaches across 15 varsity sports. Of these 45 coaches, 19 participated in the Composite Stress Survey (18 online participants and 1 hardcopy participant). This

small sample size (42%), while useful in gaining a superficial understanding of the levels of stress experienced by MSU sport coaches, did not lend itself to creating a comprehensive understanding of the MSU sport coach population, or the NCAA coaching population as a whole.

A small sample size was anticipated, due to not only the fact that the CSS was hosted online, and was thus potentially challenging for some coaches to complete (certain MSU sport coaches have confessed a lack of technological literacy), as well as the time period in which the survey was administered. Some sports, including Men's and Women's Basketball, Track and Field, Distance, Baseball, Softball, and Beach Volleyball, have their competitive seasons during the Spring semester, and as such, it would stand to reason that those coaches might not have time for, or choose to allocate time toward, completion of the CSS. Although this research had a small sample size, there exists a trend regarding scores for male and female athletes—based on the calculated Cohen's  $d$ , male coaches trended higher scores than did female coaches.

A non-equivalent sample population was also a limitation in this research—of the 19 coaches who responded to the CSS, 13 were male, with 6 female participants. This skewed sample size could have affected mean scores, given that there were over twice as many male participants as female participants. It could be that female coaches are just as stressed as their male counterparts, and experience stress in the same ways and to the same degrees, but that simply more male coaches responded to the survey than did female coaches, thus skewing the results. However, of the 45 full-time coaches employed by MSU, only 13 are female, with the remaining 32 coaches being male, meaning that



even if the entirety of the MSU coaching staff participated in the CSS, results may still have been skewed.

Additionally, this research was limited by the timeframe in which it was executed. As a cross-sectional study with a finite timeframe, data collected via this research was limited in its scope. Future research could seek to explore levels of professional stress at different times of the year, such as in-season versus off-season, with a hopefully greater sample size and participation rate.

Lack of truthful self-disclosure may also be a limitation in this research. Although the CSS was administered online, and participant identity was kept both anonymous and confidential, some participants may not have felt wholly comfortable fully disclosing their perspectives and opinions, thus resulting in scores that fail to accurately reflect the true nature of professional stress in MSU coaches. This may be one reason that, with the exception of one category (less than 40 years old), female coaches scored lower than their male counterparts. Although, again, participant identity remained both anonymous and confidential, some female coaches may not have felt comfortable engaging in truthful disclosure. The same may be said for male coaches, who, despite having higher mean scores than their female counterparts, may still have under-reported their stress levels, perhaps in an effort to maintain an outward appearance of control and discipline.

Contextual and professional expectations for levels of stress may have also limited this research—coaching, as evidenced in Chapter 2, is a stressful profession characterized by a variety of different responsibilities and demands that create an environment that, even in the best of times can be emotionally, mentally, and physically challenging. It is not too strange a thought to consider that in order to fit in, or that in

order to adhere to the expected norms of the coaching lifestyle, coaches, both male and female, might over-report their levels of stress. Additionally, participants may believe they are experiencing certain levels of stress due to the perceived levels of stress present in the surrounding environment, or of individuals with whom participants interact.

Perception is often reality, and if one perceives there to be high levels of stress present in the environment, he or she may adopt those levels as his or her own, thus skewing his or her responses to the CSS items.

This research utilized multiple independent *t-tests*, each with  $p=0.05$ . Utilizing multiple *t-tests* is known to increase the likelihood of a Type I error, and, due to analysis being executed via eight independent *t-tests*, there exists the likelihood of a Type 1 error occurring.

Finally, this research was limited by the institution at which it was executed. By this it is meant not that MSU in some limited the research, but that this research was limited to only one institution, and did not seek out participants from other academic institutions or athletic departments. Research into other coaching staff or athletic departments may have yielded broader or more comprehensive results. Future research, should it ever be done, should seek to include additional coaching staffs in order to gain a more comprehensive understanding of professional stress in the collegiate coaching environment.

These limitations, especially the small sample size and low participation rate, prohibit generalization of these results to the overall NCAA coaching population.

**Recommendations:** Given the data collected via administration of the CSS, it was found that MSU sport coaches experienced, on average, a “moderate” level of professional stress. This “moderate” level of stress, while not quantitatively comparable to levels of stress experienced by coaches at other institutions due to lack of data and research, falls within what could be expressed as “normal” ranges of stress for the profession of college sport coach. Because of this, at this time, there are no recommendations for intervention or calls to action. Stress, in all its forms, is an inescapable aspect of the workplace, and to exist without stress is to exist without concern for one’s performance. As such, again, this author makes no recommendations for intervention or action, given that the sample population did not exhibit stress levels in such degrees as to cause concern.

However, it is the recommendation of this author that further research be performed into the levels of professional stress in college coaches, across both a broader sample and timeframe. It would be worth examining the ways, if any exist, in which coaches from the same sport experience stress at different times of the year, and perhaps under different conditions (that is, a winning season versus a losing season). It would stand to reason that coaches from the same sport would experience stress in drastically different ways during different times of the year, or even the competitive season, and, should research into those areas bear fruit, strategies for intervention and mitigation of coach stress could be developed and implemented.

**Summary:** It is important that we understand the nature of stress in the collegiate coaching environment, not only so that we understand stress as it relates to this specific population and environment, but to understand it as a corollary to other “high-stress”

professions, as well as to understand it within a human context. Coaches are a specific and unique population—their performance is ultimately dependent upon the performance of others, however, the burden of responsibility, as well as that of success and failure, rests solely upon the shoulders of the coach. Coaching is akin to teaching—a teacher passes on knowledge to his or her students, and ensures that that knowledge is reinforced and ingrained through application and evaluation. However, some students, no matter how effective the teacher or the lesson, may never take to that knowledge in the intended or desired way, which, though through no fault of his or her own, then comes to rest as blame upon the teacher. In this way, coaching and teaching are the same—both professions impart knowledge and ability to their students, but it is ultimately up to the student to apply the lesson in its intended capacity. However, when that application is found wanting or lacking, it is the teacher, or the coach, who bears the responsibility. It is for this unique state as the primary recipients of secondary fault, among others, that it is important that we seek to continually explore the nature of stress in the coaching environment.

## REFERENCES

- Almendra, C. (2010). Relationships among job demand, job control, social support and job stress in registered nurses working in skilled nursing facilities. Rutgers University. Retrieved from <https://rucore.libraries.rutgers.edu/rutgers-lib/27158/PDF/1/play/>.
- Baltzell, A. L., McCarthy, J. M., Ahktar, V. L., Hurley, D., Martin, I., & Bowman, C. (2014). High school coaches' sources of joy and unhappiness. *Journal of Multidisciplinary Research*, 6(3), 5-24.
- Centers for Disease Control and Prevention. (n.d.). *Rationale for NIOSH Generic Job Stress Questionnaire*. Retrieved from cdc.gov: <https://www.cdc.gov/niosh/topics/workorg/tools/pdfs/Rationale-For-Niosh-Generic-Job-Stress-Questionnaire.pdf>.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385-396. Retrieved from <http://www.jstor.org/stable/2136404>.
- College football coaching game is Turnover Central*. (2011). Retrieved from Herald&Review: [http://herald-review.com/sports/football/college-football-coaching-game-is-turnover-central/article\\_0f77ed2a-ce74-11e0-900c-001cc4c03286.html](http://herald-review.com/sports/football/college-football-coaching-game-is-turnover-central/article_0f77ed2a-ce74-11e0-900c-001cc4c03286.html).
- Cowden, R. G. & Meyer-Weitz, A. (2016). Mental toughness in South African competitive tennis: Biographical and sport participation differences. *International Journal of Sport and Exercise Psychology*, 14(2), 152-167.
- Dale, J., & Weinberg, R. S. (1989). The relationship between coaches' leadership style and burnout. *The Sport Psychologist*, 3(1), 1-13.
- De Francisco, C., Arce, C., del Pilar Vilchez, M., & Vales, A. (2016). Antecedents and consequences of burnout in athletes: Perceived stress and depression. *International Journal of Clinical and Health Psychology*, 16(3), 239-246.
- Fletcher, D., & Hanton, S. (2003). Sources of organizational stress in elite sports performers. *The Sport Psychologist*, 17(2), 175-195.
- Gaines, C. (2016, November 29). *Most college football players will lose their head coach before their college playing career is over*. Retrieved from Business Insider: <http://www.businessinsider.com/college-football-players-coaches-recruiting-2016-11>.
- Garbarino, S., & Magnavita, N. (2015). Work stress and metabolic syndrome in police officers. A Prospective Study. *PLoS ONE*, 10(12), 1-15.

- Gould, D., Greenleaf, C., Guinan, D., & Chung, Y. (2002). A survey of U.S. Olympic coaches: Variables perceived to have influenced athlete performance and coach effectiveness. *The Sport Psychologist*, 16(3), 229-250.
- Green, G., & Reese, S. (2006). Job satisfaction among high school athletic administrators. *Education*, 127(2), 318-320.
- Hendrix, A. E., Acevedo, E. O., & Hebert, E. P. (2000). An examination of stress and burnout in certified athletic trainers at Division I-A universities. *Journal of Athletic Training*, 35(2), 139-144.
- Husain, W., & Sajjad, R. (2011). Depression, anxiety and stress among married & unmarried police officers. *Frontier Women University Journal of Social Sciences*, 43-47.
- Kelley, B. C., Eklund, R. C., & Ritter-Taylor, M. (1999). Stress and burnout among collegiate tennis coaches. *Journal of Sport Science & Exercise Psychology*, 21, 113-130.
- Lazarus, R. S. (2012). Evolution of a model of stress, coping, and discrete emotions. In V. H. Rice, *Handbook of Stress, Coping, and Health: Implications for Nursing Research, Theory, and Practice* (2nd ed., pp. 199-225). Thousand Oaks, California: SAGE Publications, Inc.
- Lindstrom, K., Elo, A.-L., Skogstad, A., Dallner, M., Gamberale, F., Hottinen, V., Orhede, E. (2000). *User's Guide for the QPS Nordic*. Retrieved from Svensk Nationell Datatjänst: <https://snd.gu.se/sv/catalogue/file/3228>.
- List of current NCAA Division I baseball coaches*. (n.d). Retrieved from Wikipedia: [https://en.wikipedia.org/wiki/List\\_of\\_current\\_NCAA\\_Division\\_I\\_baseball\\_coaches](https://en.wikipedia.org/wiki/List_of_current_NCAA_Division_I_baseball_coaches).
- List of current NCAA Division I FBS football coaches*. (n.d). Retrieved from Wikipedia: [https://en.wikipedia.org/wiki/List\\_of\\_current\\_NCAA\\_Division\\_I\\_FBS\\_football\\_coaches](https://en.wikipedia.org/wiki/List_of_current_NCAA_Division_I_FBS_football_coaches).
- List of current NCAA Division I FCS football coaches*. (n.d). Retrieved from Wikipedia: [https://en.wikipedia.org/wiki/List\\_of\\_current\\_NCAA\\_Division\\_I\\_FCS\\_football\\_coaches](https://en.wikipedia.org/wiki/List_of_current_NCAA_Division_I_FCS_football_coaches).
- List of current NCAA Division I men's basketball coaches*. (n.d). Retrieved from Wikipedia: [https://en.wikipedia.org/wiki/List\\_of\\_current\\_NCAA\\_Division\\_I\\_men%27s\\_basketball\\_coaches](https://en.wikipedia.org/wiki/List_of_current_NCAA_Division_I_men%27s_basketball_coaches).
- List of current NCAA Division I men's ice hockey coaches*. (n.d). from Wikipedia: [https://en.wikipedia.org/wiki/List\\_of\\_current\\_NCAA\\_Division\\_I\\_men%27s\\_ice\\_hockey\\_coaches](https://en.wikipedia.org/wiki/List_of_current_NCAA_Division_I_men%27s_ice_hockey_coaches).

- List of current NCAA Division I women's basketball coaches.* (n.d). Retrieved from Wikipedia:  
[https://en.wikipedia.org/wiki/List\\_of\\_current\\_NCAA\\_Division\\_I\\_women%27s\\_basketball\\_coaches](https://en.wikipedia.org/wiki/List_of_current_NCAA_Division_I_women%27s_basketball_coaches).
- List of NCAA Division I softball programs.* (n.d). Retrieved from Wikipedia:  
[https://en.wikipedia.org/wiki/List\\_of\\_NCAA\\_Division\\_I\\_softball\\_programs](https://en.wikipedia.org/wiki/List_of_NCAA_Division_I_softball_programs).
- Macquet, A.-C., & Skalej, V. (2015). Time management in elite sports: How do elite athletes manage time under fatigue and stress conditions? *Journal of Occupational and Organizational Psychology*, 88(2), 341-363.
- Martin, J., Kelley, B., & Dias, C. (1999). Stress and burnout in female high school athletic directors. *Women in Sport and Physical Activity Journal*, 8(1), 101-116.
- Nafian, S., Vajdi, E., Dehkordi, A. N., Shahraki, F. G., Aghdaei, M., & Partovi, H. (2014). Evaluation of stress and burnout levels among individual and team male athletes. *Medicinski Glasnik/Medical Gazette*, 19, 29-36.
- Olusoga, P., Maynard, I., Butt, J., & Hays, K. (2014). Coaching under pressure: mental skills training for sports coaches. *Sport and Exercise Psychology Review*, 10(3), 31-44.
- Parul, S., Anuradha, D., Sanjeev, D., Arvind, S., Shrivastave, K., & Bansal, R. (2014, August). Occupational stress among staff nurses: Controlling the risk to health. *Indian Journal of Occupational and Environmental Medicine*, 18(2), 52-56.
- Pastore, D. L., & Judd, M. R. (1993). Gender differences in burnout among coaches of women's athletic teams at 2-year colleges. *Sociology of Sport Journal*, 10(2), 205-212.
- Pflanz, S. E., & Ogle, A. D. (2006). Job stress, depression, work performance, and perceptions of supervisors in military personnel. *Military Medicine*, 171(9), 861-865.
- Puente-diaz, R., & Anshel, M. H. (2005). Sources of acute stress, cognitive appraisal, and coping strategies among highly skilled exican and U.S. competitive tennis players. *The Journal of Social Psychology*, 145(4), 429-446.
- Rationale for NIOSH Generic Job Stress Questionnaire.* (n.d.). Retrieved from cdc.gov:  
<https://www.cdc.gov/niosh/topics/workorg/tools/pdfs/Rationale-For-Niosh-Generic-Job-Stress-Questionnaire.pdf>.
- Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and health: Psychological, behavioral, and biological determinants. *Annual Review of Clinical Psychology*, 1, 607-628.

- Smith, C. (2014). *What is the all time average coaching tenure for every SEC school?* Retrieved from Saturday Down South: <https://www.saturdaydownsouth.com/sec-football/average-sec-head-coaching-tenure/>.
- Stanetic, K. D., Savic, S. M., & Racic, M. (2016). The prevalence of stress and burnout syndrome in hospital doctors and family physicians. *Medicinski Pregled/Medical Review*, 69(11/12), 356-365.
- Stress Research*. (2014). Retrieved from stress.org: <https://www.stress.org/stress-research/>.
- Tabei, Y., Fletcher, D., & Goodger, K. (2012). The relationship between organizational stress and athlete burnout in soccer players. *Journal of Clinical Psychology*, 6, 146-165.
- Thelwell, R. C., Weston, N. J., Greenlees, I. A., & Hutchings, N. V. (2008). Stressors in elite sport: A coach perspective. *Journal of Sport Sciences*, 26(9), 905-918.
- Thelwell, R., Weston, N., & Greenlees, I. A. (2005). Defining and understanding mental toughness within soccer. *Journal of Applied Sport Psychology*, 17(4), 326-332.
- Zulfiqar, K., Khan, N. U., Shoaib, R. M., & Wamar, K. (2017). Workplace stressors and their effects on health of mid-career female doctors of a semi government ospital. *Pakistan Armed Forces Medical Journal*, 67(4), 554-559.



# APPENDIX

## Human Subjects IRB Approval

Date: 4-25-2018

**IRB #:** IRB-FY2018-428  
**Title:** Professional Stress in College Sport Coaches  
**Creation Date:** 12-4-2017  
**End Date:** 1-22-2019  
**Status:** **Approved**  
**Principal Investigator:** Melinda Novik  
**Review Board:** MSU  
**Sponsor:**

### Study History

|                                |                              |                                 |
|--------------------------------|------------------------------|---------------------------------|
| <b>Submission Type</b> Initial | <b>Review Type</b> Expedited | <b>Decision</b> <b>Approved</b> |
|--------------------------------|------------------------------|---------------------------------|

### Key Study Contacts

|                             |                                    |  |
|-----------------------------|------------------------------------|--|
| <b>Member</b> Melinda Novik | <b>Role</b> Principal Investigator | <b>Contact</b><br>melindanovik@missouristate.edu |
|-----------------------------|------------------------------------|--|

|                            |                             |  |
|----------------------------|-----------------------------|--|
| <b>Member</b> James Seratt | <b>Role</b> Primary Contact | <b>Contact</b><br>jseratt@live.missouristate.edu |
|----------------------------|-----------------------------|--|

|                              |                          |   |
|------------------------------|--------------------------|---|
| <b>Member</b> Riley Galloway | <b>Role</b> Investigator | <b>Contact</b><br>rileygalloway@missouristate.edu |
|------------------------------|--------------------------|---|

|                              |                          |   |
|------------------------------|--------------------------|---|
| <b>Member</b> Wayne Mitchell | <b>Role</b> Investigator | <b>Contact</b><br>waynemitchell@missouristate.edu |
|------------------------------|--------------------------|---|