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Perceptions of Individual Burnout, Team Burnout, and Coping Resiliency Among Elite Pre-Professional Female Soccer Athletes

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By

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Abstract

Mental illness is a significant contributor to physical illness and disease worldwide and is more prevalent in young adult females. Stress and burnout are both inputs and outputs affecting mental and physical health. Elite athletes are particularly susceptible to stress and burnout due to the added pressures of achieving champion status in their respective sports. Previous studies focused on individual perceptions of athlete burnout, but research is increasingly showcasing the need to understand the social aspect of team sport environments. This study used a cross-sectional survey to assess the levels of perceived burnout in a convenience sample of elite female soccer athletes in the United Soccer League – Women. It included the Athlete Burnout Questionnaire (ABQ), Teammate Burnout Questionnaire (TBQ), and Brief Resilient Coping Scale (BRCS) for determining coping resiliency. Most of the participants reported a moderate level of burnout individually and collectively, and a medium level of coping resiliency. The sample size of this study was a significant limitation for analyses, and thus no significant correlation was found to exist between burnout and coping resiliency. Further studies with a larger sample size assessed longitudinally will help to understand burnout at different times in the participation/competition cycle and ultimately inform better programs and interventions to combat stress and burnout in athlete cohorts.

Keywords: athlete burnout, coping, distress, depersonalization, elite athletes, exhaustion, reduced accomplishment, resiliency, sport devaluation, social constructs, stress, wellness

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Chapter I: Statement of the Problem

Background Information

Wellness is characterized by 8 dimensions: *physical, intellectual, emotional, social, spiritual, vocational, financial,* and *environmental* (Stoewen, 2017). There are two overarching components as well, *physical health* and *mental health* (MedlinePlus, 2020a). These two components are intertwined and maintaining optimal function of one can assist in maintaining positive/healthy status of the other.

Physical health is the optimal functioning of the body; Physically healthy people are able to balance their body needs with tangible resources. This can be achieved with activities/resources such as exercise, eating a nutritional diet, minimizing exposure to harmful substances, and good sleeping habits (The World Book, 2022). Conversely, mental health focuses on the intangible processes related to the mind including feelings, thoughts, problem solving, and social connection (MedlinePlus, 2020a). Mental health can be achieved through connecting with other people, infusing meaning and purpose in life, meditation and relaxation, and striving for overall positivity and gratefulness (World Health Organization, 2022a).

Lack of wellness – or *illness* – is physical and mental as well. Illness can be sporadic (occurring occasionally) or chronic (long-term) (Colligan & Higgins, 2008). There are many causes of both physical illness and mental illness, such as injury, stress, brain chemical imbalance, genetics, chemical exposures, and isolation (MedlinePlus, 2020a). Mental illnesses – alternately termed *mental disorders* (MedlinePlus, 2020b) – can affect thoughts, mood, and behaviors. Common examples of mental illnesses are anxiety disorders, depression and mood disorders, eating disorders, and post-traumatic

stress disorder (PTSD) (MedlinePlus, 2020b). Mental illness affects 1/5 of the US population annually (National Institute of Mental Health, 2022), and is 10% more prevalent in women than in men. People with mental disorders experience double the mortality risk as those without mental health issues (Walker et al., 2015). This translates to roughly a 10-year loss of life with greater than 8 million deaths annually across the world. This poor quality of life is estimated to impact the global economy at an average rate of nearly $1 trillion annually by 2030 (Evans-Lacko et al., 2017; Stead et al., 2010). The most recent worldwide data suggests that less than 30% of people who have mental health concerns receive treatment/care.

Stress and burnout are both components of mental health disorders and poor physical health. Stress, burnout, and mental health problems have an interconnected and sometimes cyclical relationship (Gustafsson et al., 2017). Colligan and Higgins (2008) posit that stress is not merely a response to a situation, but an interaction between the individual, their environmental demands, and coping abilities (real or perceived) (Colligan & Higgins, 2008). *Eustress*, or positive stress, can help people achieve goals, enjoy fulfilling activities and relationships, and work productively through challenges. *Distress*, or negative stress, can lead to illness and emotional issues. *Burnout* describes a level of exhaustion or lack of commitment/interest in a particular situation or event, and can precede or proceed stress (Madigan et al., 2022).

Stress and burnout can result in serious mental health problems which in turn can be exacerbated by and lead to development of additional stress/burnout symptoms. Stress can manifest in a variety of ways, including psychiatric/mental, cardiovascular, and immune-related diseases (Elsenbruck & Enck, 2017). It is estimated that as many as 75%

of doctors' visits are stress related (Salleh, 2008), and stress is a major contributing factor in the US leading causes of death (Centers for Disease Control and Prevention, 2021).

Early research on burnout focused on worksite stressors (Maslach & Jackson, 1981), but stress and burnout are pervasive in many industries and activities, including athletics (Smith, 1986). Athletes experience burnout at all performance levels related to poor mental health, as it affects how people handle stress, and their capacity to manage and adapt to change (Bianco & Eklund, 2001). Athletes are under additional physical performance stress: the stress to succeed by achieving champion status, particularly at elite levels. Thus, athlete burnout is categorized into three constructs: (1) emotional and physical exhaustion, (2) sport devaluation, and (3) reduced sense of personal accomplishment (Raedeke & Smith, 2001). Limited information exists in this area, but moderate burnout has been reported in athlete studies (Appleby et al., 2022; Davis et al., 2018; Kalinowski et al., 2020). Moreover, Madigan et al. (2022) published evidence that burnout in athletics is increasing, and athletes are currently at greater risk of experiencing diminished accomplishment and sport devaluation than ever before (Madigan et al., 2022).

More recently, the social aspect of sports has been highlighted as an aspect in need of further understanding (Al-Yaarabi & Kavussanu, 2017; Pacewicz et al., 2020). Social constructs related to burnout include negative social interactions, added pressure from teammates, poor social environments in schools, and lack of belonging in group settings (Castaldelli-Maia et al., 2019; Gouttebarge et al., 2019). As with individual burnout, all levels of performance are affected by social stressors. Antisocial behavior has been reported to correlate directly with burnout (Appleby et al., 2022; see also Al-Yaaribi

and Kavussanu, 2017). Additionally, the limited research in this area has predominantly focused on male soccer athletes at *elite* levels of participation (Appleby et al., 2022) – meaning they've reached a national or international competitive level of mastery in their respective sports (Swann et al., 2015).

Resilient coping studies have shown that utilizing social coping strategies such as seeking support from others plays a major role in combatting burnout, distress, and mental illness (Currie et al., 2021; Mohammed et al., 2018; Shannon et al., 2019; Udry et al., 1997). Other coping strategies include mindfulness, breathing exercises, focusing on positives, sense of humor, physical exertion, and altruism (Wu et al., 2013). These can be useful internal tools to proactively increase coping capabilities and improve adaptability. External factors have been studied that impact resiliency as well such as genetics, brain chemicals, and developmental experiences. Understanding the interconnectedness of these factors within athlete cohorts can help identify proactive wellness strategies to use in athletic settings.

Statement of the Problem

The existing knowledge regarding stress, coping, and burnout in social aspects lacks data on female athletes in team sports. The extremely limited data that exists on female athletes shows higher rates of stress and mental illness (Beable et al., 2017; National Collegiate Athletics Association, 2022; Wilson et al., 2022). Mental health concerns such as feeling overwhelmed, exhaustion, and anxiousness are reported at higher levels in female athletes at high school and collegiate levels (National Collegiate Athletics Association, 2022 ; Ward et al., 2023). Further, individual athlete burnout has

been reported as prevalent in up to 9% of female athletes (Defreese & Smith, 2013, Ingrell et al., 2019, Isoard-Gautheur et al., 2016, as cited in Moseid et al., 2023).

In these areas of stress, coping, and burnout, there is more data on male team sports, particularly soccer (Appleby et al., 2022; Castaldelli-Maia et al., 2019; Davis et al., 2018; Gouttebarge et al., 2019; Kalinowski et al., 2020; Rice et al., 2016). Comparatively, Guisti et al. (2022) found that female athletes had 43% higher levels of exhaustion than males in collegiate cohort. Studies have also shown that high extroversion (as a social construct) is linked to higher coping ability (Kaisler et al., 2012, as cited in Kalinowski et al., 2020). Further, most current data reflects low levels of perceived burnout among teammates (Appleby et al., 2022).

Resilience is positive adaptability to change (Sinclair & Wallston, 2004), hence, resilient coping involves the compounding effect of being able to adapt to change over time (Dwyer & McGuinness, 1996). Nichols et al. (2022) found a correlation between increased use of coping strategies and decreased burnout symptoms (Nicholls et al., 2022). They also identified a potential data gap, as their study only included male athletes and consequently might not be able to be generalized in female athletics.

Intensifying the issue, athletes in all levels of participation face barriers in seeking help for stress, burnout, and other mental health concerns (Castaldelli-Maia et al., 2019). The main issues are stigma, lack of tools and resources, and lack of mental health knowledge overall (Ward et al., 2023). This combined with limited research in female team sports and the lack of understanding regarding levels of burnout and coping resiliency create a prime opportunity for assessment.

Significance of the Problem

Stress and burnout can lead not only to poor physical health but can manifest emotionally and mentally. Mental disorders are a primary concern globally, where 1 in 5 people will experience a mental disorder in their lifetime (Kelloway, 2019; Kristman et al., 2019). Further, between ¼ and ½ of all adults will have a mental health difficulty at least once in their life (Madigan et al., 2022). In fact, in 2019, over 500 million people internationally were estimated to be living with a serious mental health problem (Caulfield, et al., 2018).

Specifically in the United States, 50 million adults experience mental illness annually (National Institute of Mental Health, 2022). Strikingly, the prevalence in females is higher than males, and the group that experiences the most adverse mental health is young adults aged 18-25. These problems include stress and anxiety, depression, and mood disorders (MedlinePlus, 2020b). A study conducted on male soccer players in Sweden assessed the relationship between *psychological factors* and *injury occurrence*, and found psychological factors (i.e., anxiety and stress susceptibility) significantly increase injury risk (Ivarsson & Johnson, 2010).

There is additional evidence that stress and burnout are associated with increased prevalence of physical illness such as heart conditions and diabetes (Melamed et al., 2006) – both of which are in the global top ten causes of death annually (World Health Organization, 2019). As of 2019, ischemic heart disease was listed as the leading cause of death annually, amassing 8.9 million deaths (World Health Organization, 2019), while 18.5 million annual deaths can be attributed to all cardiovascular diseases (Ritchie et al.,

2019). Diabetes, ranking 9th (World Health Organization, 2019) accounts for 1.5 million deaths annually worldwide (Ritchie et al., 2019).

While athlete burnout has historically focused on individual perceptions, recent studies have shown the importance of a collective or social view, particularly relating to team sports (Pacewicz et al., 2019; Appleby et al., 2022; Davis et al., 2018). In sports, social interactions and environments can positively affect performance (Bianco & Eklund, 2001 as cited in Appleby et al., 2022). They can also negatively impact athletes as well, particularly in the aspects of trustworthiness, cohesion, communication, and interactions of teammates, coaches, and managers (Gustafsson et al., 2017; Appleby et al., 2022). Perception of teammate burnout is a recently defined construct that focuses on the social aspect of athletics, and only a few studies have been conducted in this area (Appleby et al., 2022).

A majority of athletes at the high school level with elevated stress levels are more comfortable discussing mental health concerns with a friend than a professional, coach, or even a family member (Ward et al., 2023). Stigma, previous interactions with health professionals, time commitment, resource availability, and lack of support from coaches and institutions are barriers to seeking help across all participation levels of athletics. At the collegiate level, only 50% of student-athletes reported mental health as a priority of their athletics departments, and just slightly higher prevalence of supportive coaches on the seriousness of mental health (National Collegiate Athletics Association, 2022). Strikingly, most student athletes surveyed said they did not feel comfortable seeking help on campus.

Purpose Statement

The purpose of this research project is to assess and compare perceptions of individual and team burnout to contribute to the knowledge of social impact upon burnout and coping resiliency among female elite athletes.

Research Questions

- To what extent does individual burnout occur in elite female soccer athletes?
- To what extent does team burnout occur in elite female soccer athletes?
- What is the correlation between individual burnout perception and level of coping resiliency?

Limitations

The limitations of the study are outlined as follows.

- 2022 was the inaugural season of the USLW, so there is only one season of performance for athletes to reflect upon.
- The athletes are "out of season" while they are taking the survey, so will be relaying information having had time off to reflect. Thus, they are not currently experiencing the same stress of performance they were under while in competition.
- The survey is given to athletes who are continued participants in the league, so experience *active burnout;* others experiencing burnout may have chosen to discontinue playing altogether.
- The participants were not randomly selected.

- The sample size of athletes surveyed is small compared to total number of athletes in the USLW and hinged upon coaches/managers willingness to participate by distributing the survey to their teams.
    - Two teams agreed to participate.
    - 13 total responses were complete for data analysis. A total of 13 athletes fully participating in this USLW study is a significant limitation, as the minimum acceptable correlational research sample size is 30 to determine relationships (Frankel & Wallen, 2003, as cited by Cottrell & McKenzie, 2011). This confines the usefulness of the data, as it hinders generalizability.

Delimitations

The following parameters were placed on the study.

- Study includes volunteer participants of USLW teams that have completed one season in the league (2022).
- The participants are female soccer athletes in the USLW Women's Soccer League.
    - Athletes are aged 18 – 25.
    - There are 44 teams in the league and the survey was given to 2 teams.
    - These teams are located in Minnesota and Georgia.

Assumptions

It is assumed that all participants can read and understand the questionnaire, that they will respond honestly, and they were on the team in the 2022 inaugural season.

Additionally, the research will be anonymous and voluntary; the subjects can choose to withdraw from the study at any time.

Definition of Terms

Athlete Burnout

Athlete burnout is defined as a cognitive affective syndrome denoted by physical, psychological, and emotional exhaustion (Raedeke & Smith, 2004; Schmahmann & Sherman, 1998). Typically, it is accompanied by a reduction in sense of accomplishment and decreased interest in sport(s) or physical activity (Gustafsson et al., 2014; Raedeke, 1997). Athlete burnout can result in short-term and long-term negative effects ranging from lack of motivation in sport and performance issues to cessation or dropout.

Cerebellar Cognitive Affective Syndrome (CCAS)

Cerebellar cognitive affective syndrome (CCAS) has cognition (mental) symptoms, emotional symptoms, and motor (physical) symptoms (Schmahmann, 2004). It is based on the conceptual autonomous functioning of the cerebellum to maintain balanced behavior. Essentially, the motor part of the brain automatically functions to control behavior, and when it is not functioning properly, CCAS can occur. CCAS is accompanied by impaired cognitive abilities impacting movement, reasoning, and speaking and can range from periodic stunting to chronic psychosis.

Coping

Coping deals with the capacity to adapt to changes brought upon by stressors, to mitigate effects and maintain balance (Colligan & Higgins, 2006).

Coping Resiliency

Coping Resiliency is a measure of personal capability to handle stress by being able to quickly adapt to changes and situations (Sinclair & Wallston, 2004). More specifically, it refers to the ability to rebound from and positively adapt to significant stressors (Dyer & McGuinness, 1996). The level of coping resiliency a person maintains can be assessed by the Brief Resilient Coping Scale (BRCS) which results in one of three classifications: low, medium, and high resiliency (Sinclair & Wallston, 2004).

Depersonalization

Depersonalization is characterized by a negative/uncaring view of other people (Raedeke, 1997). A person experiencing this can be impersonal, detached, and uncaring in reaction/response toward others.

Elite Athletes

Though a consistent definition of *elite athletes* is lacking in the literature, most researchers can agree that elite athletes are high performers in their sports, competitive at a national or international level (Swann et al., 2015). Further, popularity of the sport and participation rates are important in reaching an elite level of success. To be termed an elite athlete, one must have participated in an immense amount of practice and competitions toward mastery of skills.

Exhaustion

Exhaustion, as it relates to stress and burnout, is bivariate (Maslach & Jackson, 1981). Physical and emotional exhaustion are increasingly present as

resources (i.e., energy, focus, capability) are depleted, resulting in a lack of ability to contribute oneself as desired.

Reduced Accomplishment

Negative attitudes, feelings, and perceptions (of oneself and others) are contributors to a sense of *reduced accomplishment*, or achieving less than potential (Maslach & Jackson, 1981). In turn, as things are more difficult to achieve, these feelings deepen.

Sports Devaluation

The value athletes place on participation in the sport is a significant factor in retention and achievement (Appleby et al., 2022; see also Gustafsson et al., 2017; Raedeke, 1997). *Devaluation*, related to sports, occurs when the perceived merits/benefits of being in the sport decrease.

Social Constructs

Athletes in team sports are not isolated in performance goals and objectives (Appleby et al., 2022). Rather, they rely upon other members of the team to perform their job skills to succeed. *Social constructs* are mind, body, and behavioral (psychophysiological) influences (Bates & Buckman, 2013) in a team or group environment that affect performance and well-being of both the individual and the collective (Appleby et al., 2022).

Stress

Stress is defined as physical/mental changes developed from situations (stressors) that are challenging or threatening (Krantz et al., 1985, and Zimbardo et al., 2003, as cited in Colligan & Higgins, 2006).

Wellness

Wellness is defined as actively participating in healthy decision making (Global Wellness Institute, n.d.) including tangible and intangible dimensions. These 8 overall dimensions of wellness: *physical, intellectual, emotional, social, spiritual, vocational, financial*, and *environmental* must work together for optimal health (Stoewen, 2017).

Chapter II: Literature Review

Introduction

The purpose of this research project is to assess and compare perceptions of individual and team burnout to contribute to the knowledge of social impact upon burnout and coping resiliency among female elite athletes. This chapter will examine existing research on health, wellness, and illness as it manifests mentally and physically. Particular emphasis will be placed on stress and burnout with regard to athletics and the social constructs of team sports. Additionally, coping resiliency is discussed, and the positive outcomes related to stress management as well as the negative impacts lack of stress mitigation strategies have upon burnout.

Wellness

Wellness is defined as actively participating in healthy decision making (Global Wellness Institute, n.d.). This includes making cognitive decisions on where to expend energy, positive thoughts and interactions, and healthy lifestyle choices (Stoewen, 2017). There are 8 overall dimensions of wellness: physical (relating to the body), intellectual (relating to our thoughts), emotional (relating to our feelings), social (regarding interactions with others), spiritual (regarding our life/higher purpose), vocational (what we do), financial (monetary stability), and environmental (the spaces in which we exist). Achieving an overall state of wellbeing requires a multifaceted approach, incorporating all of these dimensions. While there are many aspects, health can be simplified into two categories regarding how it is achieved: physical health and mental health (The World Book, 2022).

Physical Health

Physical health deals with ensuring maintaining optimal body function (National Institutes of Health, 2022) with physical habits that promote wellness. Staying active, maintaining a healthy diet, and making other health-oriented decisions help to achieve positive physical health. Aside from the energy benefits, these habits can lower your risk of disease and can help to decrease stress.

Vocational, financial, and environmental health also have physical characteristics, and it is important to balance them together, as all the dimensions are interdependent (Stoewen, 2017). Jobs can be physically demanding; financial health affects environmental health in where people are able to live, what resources they have access to, how they spend their time, ability to make healthy decisions, etc. If balance is not maintained, it can result in physical illness.

Mental Health

Mental health is the optimal functioning of the brain and its associated intangible processes (World Health Organization, 2022a). The social, emotional, spiritual, and intellectual dimensions of wellness have many mental health characteristics and implications (Can, 2017). How people express their thoughts, feelings, interact with others, and solve problems interact mentally.

Mentally healthy people are able to cope with stressors, make healthy decisions, and develop and maintain healthy social relationships. Centers for Disease Control and Prevention (2023) adds emotional and psychological wellness into this definition as motivators of thoughts, feelings, and decisions to act (Centers for Disease Control and Prevention, 2023a). The stasis of mental wellness is dependent upon balancing

psychological, biological, and environmental factors in a way that promotes resiliency and adaptability (World Health Organization, 2022). Individually, mental wellness is experienced at different levels and is constantly fluctuating, meaning overall mental health can change over time. Exposure to protective and productive environments is crucial to premium positive functionality.

Mental Illness

Conversely, mental illness results from poor function of the brain and associated processes (World Health Organization, 2022a). Poor mental health not only manifests as mental disorders, but it also has broader implications worldwide. In 2010, the World Health Organization (WHO) reported mental illness as the main source of disability - contributing to 13% of disease across the globe (Caufield et al., 2018). Prevalence has only increased, and as of 2019 mental disorders still rank among the top 10 causes of burden (Global Burden of Disease 2019 Mental Disorders Collaborators, 2022). The Covid-19 pandemic compounded mental illness incidence, and early estimates suggest an average 27% increase in anxiety and depression from 2019-2020 (World Health Organization, 2022b). Concerningly, those who experience severe mental illnesses are more likely to die prematurely than those who do not (Caufield et al., 2018). Poor quality of life associated with disabling mental illness also has a detrimental economic impact. It is estimated that over a 19-year period (2011 through 2030) this cost will reach 16.3 trillion dollars.

Mental illness affects over 50 million adults in the US annually, which represents roughly 21% of the population (National Institute of Mental Health, 2022). Mental illness is more prevalent in women (25%) than men (15%) by ten percentage points, according

to data from the 2020 National Survey on Drug Use and Health (NSDUH) and is also more prevalent in young adults aged 18-25.

The World Health Organization (WHO) has repeatedly reported on the need for governments to take action and prioritize mental health (Caulfield et al., 2018), but few countries have broad programs, policies, or legislation to promote mental wellness (Dimoff & Kelloway, 2019). Additionally, research has shown that there is a large gap between suffering from poor mental health and seeking treatment (Stead et al., 2010). In the United States from 1990-2003, roughly 30% of the population were assessed to have some level of mental disorder while only 26% of those (on average) received treatment (Kessler et al., 2005; Stead et al., 2010). Data from worldwide surveys conducted by WHO through 2016 showed similar statistics, averaging 29% of people who have mental health concerns are receiving care (Evans-Lacko et al., 2017). Complicating the treatment statistics further, significant variances were found when assessing income and education levels. This highlights the need to understand mental illness and provide stress mitigation/coping solutions at organizational levels (Colligan & Higgins, 2008).

Mental and Physical Illness Intersection

The necessity to combine the parallel disciplines of primary care medicine (focused on physical health) and specialized care for mental health led to the concomitant term *biopsychosocial*, combining *biological*, *psychological*, and *sociological* (Campo, 2012). Though conceptually health can be divided into groups of physical and mental, the practical truth is that a unified approach is necessary to maintain wellness and diagnose illness.

Biopsychosocial health as a more holistic approach to healthcare, ultimately explains that poor mental health can manifest with physical symptoms (Campo, 2012). These symptoms can include physical strain such as chest pains, stomachache, headache, numbness/tingling/pain in the extremities, and dizziness (Chaturvedi & Desai, 2013). Often, these physical symptoms are unexplained in terms of causality, onset, and association with a single diagnosis (Campo, 2012). Thus, the pain is termed *functional somatic symptom* (FSS). In children and adolescents, FSS is found more frequently in females and has been found to increase with age as seen in a sample of Nordic adolescents where FSS prevalence increased 10% (to 23%) from age 6 to age 13 (Berntsson & Kohlerm 2001, as cited in Campo, 2012). The 23% prevalence was supported in a more recent study of Danish children (Rask et al., 2009, as cited in Campo 2012). Additionally, these studies supported results from other studies showing a direct relationship between numbers of FSS and mood disorders (Campo, 2012).

Other illnesses can present as well, such as diarrhea, fatigue, hallucinations, and delusions (Chaturvedi & Desai, 2013). It is difficult to quantify some of these illnesses because they are subjective, as in the case of fatigue (Watanabe et al., 2008). Fatigue is a state of exhaustion and is associated with poor physical health. *Chronic fatigue* occurs when fatigue is consistently present, affecting up to 2.5 million people in the US annually; diagnoses being much higher in women (4:1) than men (Centers for Disease Control and Prevention, 2023b). Watanabe et. al. (2008) determined from a study of people in the United Kingdom that chronic fatigue, physical, and mental illness had strong associations (Watanabe et al., 2008). Through logistic regression they found an odds ratio (OR) of 1.79 for physical illness and average OR of 4.81 for mental illness

associated with reported fatigue. Accordingly, they concluded that mental and physical health problems overlap, though fatigue is often ignored in physical diagnoses.

Stress

Stress is the effect challenging or threatening stimuli - tasks/ideas/conditions – have on the physical and/or mental states of the body. These stressors (i.e., stimuli) range in breadth and depth, and are characterized as eustress (good stress) and distress (bad stress). The complexity of stress, and response to stress, varies from person to person. Resources needed to handle stress (such as energy) and the changes involved deplete inversely with the increased duration of stress (Lazarus, 2000, as cited in Colligan and Higgins, 2008). As such, stress can also be classified by three levels – acute stress, episodic stress, and chronic stress - classified according to severity and amount of time experienced (Colligan & Higgins, 2008).

Alarmingly, emotional stress is a contributing factor to 6 of the top ten leading causes of death annually – heart disease, cancer, accidental injuries, respiratory disorders, cirrhosis, and suicide (Salleh, 2008; Tian et al., 2022). In 2008 the CDC estimated 3/4 of doctors' visits in the US are stress related (Salleh, 2008), and from 1999-2020 underlying mental and behavioral disorder cause of death was as high as 40/100,000 people (Centers for Disease Control and Prevention, 2021).

Eustress

Eustress is the positive manifestation of stress accompanying improvement, success, or accomplishment (American Psychology Association, n.d.). Eustress challenges are seen as enjoyable or worthwhile. Some examples of Eustress include personal and cultural milestones, positive changes in job, family, or personal status such

as buying a home or getting a dog, and winning competitions (Colligan & Higgins, 2008).

Distress

Distress has been shown to contribute to physical and mental illness (Colligan & Higgins, 2008). Distress enhances the potential development/severity of mental health disorders such as anxiety, post-traumatic stress (PTSD) (Carr et al., 2013; Rohner et al., 2021), depression, and substance abuse (Keyes et al., 2011; Rohner et al., 2021). Physically, distress can be linked to poor cardiovascular health and disease, obesity, and diabetes (Kivimäki & Kawachi, 2015; Rohner et al., 2021).

Stress Levels

Lazarus (2000) grouped stress into three levels and the emotional/physiological symptoms that differentiate them (Lazarus, 2000, as cited in Colligan & Higgins, 2008).

Acute Stress

Acute stress is the base level of stress experienced when a new stimulus is introduced which increases demand above an individual's capacity at which they can adapt (Lazarus, 2000, as cited in Colligan & Higgins, 2008). Generally, symptoms are short lived and can include increased anxiety and frustration along with fatigue, dizziness, and headaches. Acute stress is punctuated by specific marking of the onset and offset of symptoms associated with the stressor (Zimbardo et al., 2003 as cited in Colligan & Higgins, 2008).

Episodic Stress

Episodic Stress occurs more frequently than acute stress and in multiple *episodes* or events (Colligan & Higgins, 2008). Aggression, impatience, and

urgency are noted symptoms - as well as increased experience of physical symptoms such as pain (e.g., chest, jaw, back), persistent or recurring headaches, and asthma (Lazarus, 2000, as cited in Colligan & Higgins, 2008).

Chronic Stress

Chronic stress involves an almost continuously present or prolonged accumulation of stressors (Lazarus, 2000, Zimbardo et al., 2003, as cited in Colligan & Higgins, 2008). The problems created by chronic stress are resource exhaustive and increase vulnerability to disease and death including irritable bowel syndrome (IBS), heart attacks, and psychosis (Zimbardo et al., 2003 as cited in Colligan & Higgins, 2008).

Athlete Stress and Mental Illness

Psychosomatic stress symptoms, or symptoms that present physically but are psychologically caused, can adversely affect performance, and diminish function in athletes (Daumiller et al., 2022; Raedeke & Smith, 2004). These symptoms can include headache, weight loss, and reduction in sleep quality and quantity - which can inhibit optimal mental and physical wellness (Asplund & Chang, 2020, as cited in Daumiller et al., 2022). Ultimately, these negative stressors can manifest in mental illness.

Stress is prevalent among athletes at all levels of sport and leads to heightened mental health concerns in high school, collegiate, and elite level cohorts. A recent study on a sample of 200 high school athletes found 58% of athletes reported feeling moderately to extremely stressed (Ward et al., 2023). Of those who experienced stress, 1/4 documented stress as negatively impacting performance. To measure athletes in higher education, the National Collegiate Athletics Association (NCAA) conducts athlete

well-being studies annually. Data from the 2021 survey reported between 25% and 47% of student athlete respondents experienced mental health concerns *constantly* or *most every day* (National Collegiate Athletics Association, 2022). This level of mental health concerns was more prevalent in women's sports, where feeling overwhelmed, mentally exhausted, and anxiety were assessed at 47%, 38%, and 29% of respondents respectively.

Though historically the term *elite* has been utilized inconsistently in athletics, Swann et al. (2015) analyzed 91 studies to determine a more unified expression – most commonly relating to the level of success/expertise in sport (Swann et al., 2015). Elite athletes are competitive and perform at an international or national level. Additionally, the popularity and participation rates of the sport are useful in reaching this level of success. As in the case of soccer (aka football), in order to reach national level competition and beyond, athletes are more likely to have participated in an immense amount of practice/competition. Thus, elite athletes are required to maintain performance at exceedingly high levels and their continuous achievements require good physical and mental health (Daumiller, et al., 2022). These feats can result in added stressors. A 2017 study assessing elite athletes utilized 12 daily stressors to determine prevalence of stress (Beable et al., 2017). Notably, 42 % to 75% of athletes surveyed experienced these stressors frequently. A broader meta-analysis and review conducted on 34 studies unearthed a prevalence of mental illness in current and former elite athletes ranging from 19% to 34% (Gouttebarge et al., 2019).

Research on elite level team sports has most frequently been conducted upon male football (aka soccer) athletes (Appleby et al., 2022; Castaldelli-Maia et al., 2019; Davis et al., 2018; Gouttebarge et al., 2019; Kalinowski et al., 2020; Rice et al., 2016).

Internationally, soccer is the most popular sport with over 3.5 billion fans (Veroutsos, 2022) and roughly 275 million active players (Federation Internationale de Football Association, 2019). With that kind of reach, there is potential for larger scale studies and programs developed to address mental health in social (team) contexts.

Within the athlete cohort, women are significantly underrepresented in current studies (Appleby et al., 2022; Currie et al., 2021; Davis et al., 2018; Daumiller et al., 2022; Wilson et al., 2022). The data we do have, however, depicts women with greater incidence and prevalence of stress and mental illness (Beable et al., 2017; National Collegiate Athletics Association, 2022; Wilson et al., 2022). Moreover, there is a focus on individual rather than team sports (Appleby et al., 2022; Currie et al., 2021).

Combined, these statistics emphasize the need for additional research on female athletes in team sports. Since soccer is so popular, and we have data on male soccer athletes, analysis of stress and mental health among female soccer leagues could provide important comparative insights.

Burnout

Burnout is an amalgamation of stress. Maslach and Jackson (1984) first assessed burnout within organizational worksites and determined it to be diagnosable in people who worked with other people in some capacity (Maslach & Jackson, 1984; Raedeke & Smith, 2001). Their research incorporated stress as a trigger to this psychological syndrome presenting with three categorical components: *emotional exhaustion, reduced sense of accomplishment,* and *depersonalization*. Intense demands, negative attitudes regarding personal efficacy, and negative feelings toward others leading to detachment comprise these syndrome presentations. This definition pervaded the field of burnout

research until 1986 when Smith extrapolated the concepts to apply to athletics, identifying sport stressors that can contribute to burnout (Smith, 1986).

Athlete Burnout

Stress associated with athlete burnout can be an influencer, an exacerbator, or a result (Gustafsson et al., 2017). Burnout occurs when stress and mental illness issues are exacerbated. Competition, time and energy demands, social structure and support, lack of autonomy, lack of success/accomplishment, and inadequate sport specific skills are all stressors that athletes can experience leading to physical and emotional burnout (Smith, 1986). Ultimately, this burnout in athletes can be categorized as a loss of meaningfulness and devaluation of the sport.

Athlete burnout can be sorted into two overarching types, *individual burnout* and *team burnout*. Some athletes who burnout discontinue participation in the sport altogether while others "actively" burnout (termed *active burnouts*) wherein they experience the stress and burnout but decrease involvement rather than discontinue. This creates difficulty in data quantification and analysis, as people who discontinue activity due to burnout are rarely included in research studies.

Individual Burnout

In athletics, defining a standard definition of burnout took many years (Raedeke & Smith, 2001). Ultimately, Raedeke developed dimensional constructs through compilation of previous theories from Maslach and Jackson (1984) and Eades (1990) along with Gould, Udry et al. (1996). Thus, individual burnout is categorized by three dimensions: Emotional/physical exhaustion, reduced sense of

accomplishment, and devaluation (Eades, 1990, as cited in Raedeke & Thomas, 2001; see also Gould et al., 1996; Maslach & Jackson, 1984; Raedeke, 1997).

Individual athlete burnout has been assessed at moderate level in many studies (Appleby et al., 2022; Davis et al., 2018; Kalinowski et al., 2020). Prevalence of burnout is more difficult to quantify, since it exists on a continuum and few studies have been conducted in this area (Moseid et al., 2023). The few studies that have been done report up to 6% prevalence in male athletes and up to 9% prevalence in female athletes (Defreese & Smith, 2013, Ingrell et al., 2019, Isoard-Gautheur et al., 2016, as cited in Moseid et al., 2023). Additionally, a recent study of Division I NCAA athletes found that female athletes had 43% higher levels of exhaustion than their male counterparts (Giusti et al., 2022). Reduced sense of accomplishment and devaluation, however, were not significantly different when comparing by sex in this same study.

Team Burnout

In the early 1990s, researchers determined there to be a social aspect linked to burnout, and further necessitated a multivariate diagnostic (Gould et al., 1996). Sports are inherently social - with athletes engaging with other athletes, coaches, organizations, and fans. As such, social constructs should be assessed when discussing stress and burnout (Pacewicz et al., 2019).

Research in this area was first published in 1996 when Gould et al. interviewed tennis athletes who experienced burnout and found that negative social interactions affected the experiences of burned-out athletes (Gould et al., 1996; Pacewicz et al., 2019). Additional studies found negative social interactions such as

team atmosphere, pressure to perform for coaches and fans, coupled with extra scrutiny on performance, to be correlated with burnout (Appleby et al., 2022; Cresswell & Eklund, 2006, 2007, as cited in Pacewicz et al., 2019). Social support, relatedness, and these negative social interactions were reliably measured over multiple studies as social constructs related to burnout and informing a concomitant term - *team burnout* (Pacewicz et al., 2019).

Stress Mitigation and Coping

Studies have been conducted internationally related to stress reduction, mitigation strategies, and coping among athletes (Mohammed et al., 2018; Nicholls et al., 2022; Shannon et al., 2019; Udry et al., 1997). The trend in determining correlation of coping and athlete burnout has been primarily focused upon the individual athlete, utilizing the Athlete Burnout Questionnaire and a coping scale (Nicholls et al., 2022). For example, a study conducted upon 26 F.A. Premier League male football athletes found a higher level of coping (focused and task-oriented) to be associated with a lower level of athlete burnout, agreeing with previous studies (e.g., Hill et al., 2010, Madigan et al., 2020, Schellenberg et al., 2013, as cited in Nicholls et al., 2022). Their results suggested performance levels could be maintained with focused intent, noting an inverse correlation between athletes' use of coping strategies and burnout symptoms (Nicholls et al., 2022). This same study identified a potential data gap, as it might not be able to be generalized in female athletics.

Other studies have shown that utilizing coping strategies such as mindfulness, rebooting, breathing exercises, and seeking support from others play a major role in increasing mental wellness (Currie et al., 2021; Mohammed et al., 2018; Shannon et al.,

2019; Udry et al., 1997). These strategies enforce the onus on coping rather than controlling the causes of and organizational impact on stress (Tinline & Cooper, 2019). Understanding the links between athlete burnout, team burnout, and coping resiliency could inform proactive/ preventative measures to use in combination with reactive/coping strategies (Currie et al., 2021).

Coping Resiliency

Resilience refers to positive adaptability to change (Sinclair & Wallston, 2004). It involves "bouncing-back" from stress to function and thrive (O'Leary & Ikovics, 1995, see also Dyer & McGuinness 1996; Sinclair & Wallston, 2004). Resilience can be compounding, and successful coping strategies can improve resilience for other challenges and changes (Dyer & McGuinness, 1996). Individual characteristics linked to high coping ability are positivity/optimism, sense of humor, extroversion, socialization, physical exertion, and altruism (Wu et al., 2013).

In 1997, Laura Polk defined four classifications - titled *patterns of resilience* – with which to group resilience characteristics (Polk, 1997). These patterns are mechanisms that can be leveraged to increase resiliency, and are titled *dispositional pattern, relational pattern, situational pattern,* and *philosophical pattern*. First, the *dispositional pattern* includes physical attributes that are correlated with resilience as well as self-concept and competence. Some examples of these attributes are intelligence, health, athletic capability, self-esteem, and autonomy. Increasing these mechanisms can result in higher resiliency. Second, the *relational pattern* refers to social relationships within distal and proximal networks. Having positive role models, confidants, and the ability to develop differing levels of relationships are important mechanisms of this

pattern needed for resilient coping. Varied interests and hobbies, seeking education and support, and other social interests are important inputs as well. Third, *situational pattern* attributes cover assessment of stressors. Identification, solution orientation, capacity to act on decisions, and reflection are important steps related to situational resiliency. The ability to break a stressful event or trigger into these steps includes curiosity and creativity. Finally, the *philosophical pattern* of resiliency is defined by personal beliefs and infusing meaning/purpose into life, situations, and contributions. Positive outlook in prospection and retrospection informs a positive resiliency outlook in this pattern.

Though the patterns Polk identified are important, they are not all encompassing. They are an important basis on which to focus resources to improve factors within individual control. More recently, however, external factors have been studied that impact resiliency as well. Genetic factors, brain chemical balance, and development factors outside individual locus of control also affect resiliency (Wu et al., 2013). Understanding the part these factors play is imperative to understanding resilience and coping capabilities. Additionally, some of these can be leveraged in childhood and adolescence to help individuals become more adaptive and resilient as they grow and develop.

Tools and Resources

Athletes across levels of participation are unaware or under-aware of resources to help alleviate stress and facilitate coping resiliency. Coupled with the stigma surrounding mental illness, Ward et al. (2023) found less than 10% of stressed high school athletes would seek help from a medical professional initially versus 50% reporting comfortability in consulting a friend first (Ward et al., 2023). In the same study, over 2/3

of participants who experienced moderate to extreme stress did not receive help, though 23% reported wanting help - but stigma and resource availability hindered assistance seeking.

Numbers are bleak at the collegiate level as well. Over 9,800 student athletes in the NCAA Divisions I, II, and III responded to the most recent survey (Fall 2021) and only half believe their athletics departments prioritize mental health (National Collegiate Athletics Association, 2022). Further, just over half (53%) reported coaches taking mental health concerns seriously – which is 10% lower than they felt their teammates valued mental health concerns. Compounding the issue, 44% of athletes did not know where to find resources on campus for mental health and 53% reported they would not feel comfortable seeking support on campus.

Across the board stigma is a main reason people don't seek help for mental health concerns. Limited research exists on this specifically related to elite athletes (Carmen et al., 1968, Pierce et al., 1969, as cited in Gulliver et al., 2012), but a recent systematic review of the international literature reported stigma as the greatest barrier in seeking treatment, supported by 18 studies (Castaldelli-Maia et al., 2019). There is reason to remain hopeful, however, as stigma is reported to be declining in younger cohorts. Additional barriers include time constraints, ease of access to tools and resources, lack of mental health literacy, and lack of coping skills.

Regarding the social or team aspect of mental health, an early study reported that athletes in the social atmosphere of a team sport were more likely to seek support than individuals. (Johnson et al., 1997 as cited in Rice et al., 2016). A more recent focus group reported being most concerned people would view seeking help as weak, but determined

ultimately social influences were important in seeking help (Gulliver et al., 2012) which aligned with other studies (Rickwood et al., 2005, as cited in Gulliver et al., 2012).

Summary

Stress can arise from any situation where change is required (Colligan & Higgins, 2006). It can lead to chronic mental and physical problems including burnout (Gustafsson et al., 2017), which in turn can be costly both personally and economically (Caufield et al., 2018). Athletes in team sports influence and are affected by their social environment, so it is important to understand both facets of burnout (Appleby et al., 2022). Resilience requires compounding skills to adapt to stressors/change more efficiently and effectively over time (Masten, 2013; Sinclair et al., 2016; Wu et al., 2013). Those who have high resilient coping behaviors tend to focus on goals, believe in their self-efficacy when in stressful situations, and find success in their challenges (Sinclair & Wallston, 2004).

Existing research on stress related burnout and coping resiliency identifies the need for further study in specific areas. Female athlete cohorts are a significantly under-represented group (Currie et al., 2021). Coupled with traditional studies focused on individual rather than team/social stress, there is a need for studies that can address these combined factors (Appleby et al., 2022). The social/team sport with the broadest interest globally is soccer, with hundreds of millions of active participants (Federation Internationale de Football Association, 2019) and billions of fans (Veroutsos, 2022). Therefore, studying female soccer athletes can provide important insight compared with what is currently understood from studies on male soccer athletes. Further, perception of teammate burnout using the Teammate Burnout Questionnaire (TBQ) should focus on different age groups, competitive levels, interactions, and number of individuals on

teams. Armed with this additional knowledge, teams can focus interventions and activities related to collective levels of stress and burnout their athletes experience (Currie et al., 2021), and work on resilient coping to mitigate the associated mental health harms (Sinclair & Wallston, 2004) and increase comfortability with seeking help.

Chapter III: Methodology

Introduction

The purpose of this research project is to assess and compare perceptions of individual and team burnout to contribute to the knowledge of social impact upon burnout and coping resiliency among female elite athletes. It seeks to answer the following:

- To what extent does individual burnout occur in elite female soccer athletes?
- To what extent does team burnout occur in elite female soccer athletes?
- What is the correlation between individual burnout perception and level of coping resiliency?

Research Design

There were 44 teams in the United Soccer League – Women (USLW) that competed during the 2022 inaugural season (United Soccer League – Women, n.d.). Each team is capped at a total of 30 athletes, and 11 are on the field at any given time.

The cross-sectional (single point survey) methodology (Cottrell & McKenzie, 2011) was chosen due to the timing of the league performance (summer) season and to preliminarily study the assessment instrument to see if further use is warranted. A non-experimental design aligned with the research questions to simplify the survey collection procedure to a single, contactless response, and elicit a greater number of respondents. Additionally, the athletes are scattered across the country in the off season, and an online survey can be taken from anywhere. Thus, a league targeted survey was given once online to compare levels of burnout and coping resiliency among intact teams of the same

sport. Social constructs are increasingly identified as related to burnout, and recently developed tools require additional studies to add to the depth of knowledge (Appleby et al., 2022).

Subject Selection

The priority population was selected as a convenience sample of elite pre-professional soccer athletes in cohort of USLW Women's Soccer League teams. Participants in a convenience sample are chosen because of accessibility and ease of inclusion/exclusion of specific criteria (Cottrell & McKenzie, 2011). For this research, convenience sampling was chosen because of accessibility to an intact group of elite female athletes aged 18-24+ in the USLW league. Also, the USLW aims to focus on gender equity through the opportunities of a national lens by increasing resources and access to women's soccer (United Soccer League – Women, n.d.). This mission and vision align with the goals of the study – to assess a typically underrepresented group of participants - elite female athletes (Currie et al., 2021).

Team representatives from each of the 44 league teams participating in the 2022 inaugural season were contacted (via email and phone numbers found on their team sites) regarding approval for participation in an online survey about stress and coping among their athletes. Ultimately, the survey was sent to two teams. A total priority population of 60 female soccer athletes exists among these two teams.

Instrumentation

The 37-item online survey sent to United Soccer League - Women (USLW) athletes was anonymous, voluntary, and comprised of the three following scales: 1) Athlete Burnout Questionnaire (ABQ), 2) Teammate Burnout Questionnaire (TBQ), and

3) Brief Resilient Coping Scale (BRCS). The questionnaire was designed for distribution electronically through Qualtrics (version XM). This method was chosen for reduced response time, ease of data transferability to a statistical software package (i.e. SPSS (version 29)), and cost of materials (Cottrell and McKenzie, 2011). Additionally, the target population consists of young adults who are more likely to be familiar with electronic technologies.

The ABQ and TBQ consist of 15 items each, totaling 30 scaled response items. Additionally, the Brief Resilient Coping Scale (BRCS) is comprised of four scaled response questions. Including the multiple-choice demographic questions of age range, race, and ethnicity, the survey incorporated 37 items. Grouped into eleven overall question groups for response flow, the survey in its entirety was estimated to take each individual fifteen minutes or less. IRB approval of the study was granted (Appendix A).

Athlete Burnout Questionnaire (ABQ)

The Athlete Burnout Questionnaire (ABQ) was developed in 2001 by Thomas Raedeke and Alan Smith (Raedeke & Smith, 2001). The instrument addressed the need for a standardized questionnaire to assess the three dimensions/subscales of athlete burnout Raedeke originally identified in 1997. The three dimensions/subscales are emotional/physical exhaustion, reduced sense of accomplishment, and devaluation (Raedeke & Thomas, 2001; see also Maslach & Jackson, 1984, Raedeke, 1997).

Questions

Consisting of 15 scaled items, it can be tailored to a specific sport, and quickly became the standard tool to survey athlete burnout (Gerber et al., 2018). Athletes were asked to select how frequently they experience situations that affect

their personal performance and motivation ranging from “Almost Never to “Almost Always”.

Three subscales exist within the ABQ instrument. 1) *Physical and emotional exhaustion* (e.g., feeling overly tired from soccer), 2) *reduced accomplishment* (e.g., not performing to ability in soccer), and 3) *sport devaluation* (e.g., not caring about performing well in soccer) (Appleby et al., 2022). Research using the ABQ has found the subscales to be valid and reliable while internally consistent ($\alpha \geq 0.85$) (Raedeke and Smith, 2001, 2009, as cited in Appleby et al., 2022).

Scoring

Responses are assigned numbers 1-5 to correlate with the responses from “Almost Never” to “Almost Always” respectively; coded for a higher summation score to represent a higher presence of burnout (Raedeke & Smith, 2001).

Items 1 and 14 in the instrument are reverse coded to align with this scoring. A total ABQ burnout score of 75 is possible. ABQ burnout scores 1-25 are considered low, scores 26-50 are deemed moderate, and 50-75 is high.

Scoring Subscales

The responses to the ABQ questionnaire are broken into three subscales, reduced sense of accomplishment (RA), emotional/physical exhaustion (E), and devaluation (D) (Raedeke & Smith, 2001). Each of these subscales has a maximum value of 25. Scoring 5-11 = low burnout, 12-18 = moderate burnout, and 19-25 = high burnout.

Teammate Burnout Questionnaire (TBQ)

Research has consistently shown the importance of the social environment on athlete burnout (Arnold et al., 2016, DeFreese & Smith, 2014, and Fletcher et al., 2006, as cited in Davis et al., 2018). The need to address the social aspect of burnout in sport was the impetus for creating a new instrument to assess individual perceptions of their teammate's burnout on the same scaled response as the ABQ (Pacewicz et al., 2020). As such, the Teammate Burnout Questionnaire (TBQ) was developed as a complementary tool to the ABQ to offer a more wholistic view and assess how individuals perceive their teammates' burnout, for particular use in team sport arenas (Davis et al., 2018). Three studies, totaling 512 athlete participants, have been published utilizing the TBQ across a variety of sports and levels (Appleby et al., 2017; Davis et al., 2018; & Appleby et al., 2022). Directions for further study utilizing the TBQ as identified by Appleby in 2022, suggest utilizing teams that consist of more than two or three individuals (Appleby et al., 2022).

Along with preliminary validation, the authors identified continued analysis across a variety of competitive sports environments as critical to validate the diversity of the instrument further and provide insight into the impact of social conditions upon athlete burnout (Appleby et al., 2022). This instrument was selected for use in the current study for these reasons.

Reliability and Validity

The TBQ contains 15 scaled self-report questions and was recently validated by surveying a 290-person sample of athletes from various sports disciplines for three different subscale dimensions: 1) *teammate physical and emotional exhaustion* (e.g.,

teammates are overly tired from soccer), 2) *teammate reduced accomplishment* (e.g., soccer teammates are not performing to their abilities), and 3) *teammate sport devaluation* (e.g., teammates don't care as much about soccer anymore) (Appleby et al., 2022). Correlations between reduced accomplishment and sport devaluation were statistically significant (factor $r = 0.634$, $p < 0.001$), exhaustion and sport devaluation correlated (factor $r = 0.153$, $p = 0.100$), and exhaustion and reduced accomplishment correlated as well (factor $r = 0.139$, $p = 0.116$). This was used as justification for these three different constructs in the TBQ. Initial research using this questionnaire arrived at good internal consistency ($\alpha \geq 0.80$) on each subscale (Appleby et al., 2018; Appleby et al., 2022). When analyzed again for preliminary validation, these dimensions were correlated using Pearson's correlation coefficients and the subscales for TBQ were established to be positively and significantly correlated ($r = 0.358$-0.703). Additionally, positive and significant correlations were observed in the subscales for ABQ ($r = 0.242$-0.530) and between ABQ and TBQ instruments ($r = 0.198$-0.648) (Appleby et al., 2022). Using confirmatory factor analysis (CFA) to evaluate factorial validity of the ABQ and TBQ; they were then combined into one test for multi-trait multi method (MTMM) analysis to determine discriminant and convergent validity of the questionnaires (Appleby et al., 2022). Within these analyses, convergent and discriminant validity were supported.

Scoring

Utilizing the same scaled rating as the ABQ, ranging from "*Almost Never"* to "*Almost Always"*, the items are coded from 1-5 respectively where a higher overall score represents greater burnout (Appleby et al., 2018).

Questions 1 and 14 were reverse coded in this instrument as well to align with this rating (Appleby et al., 2022). A total TBQ burnout score of 75 is possible. TBQ burnout scores 1-25 are considered low, scores 26-50 are deemed moderate, and 50-75 is high.

Scoring Subscales

The responses to the TBQ questionnaire are broken into three subscales, team reduced sense of accomplishment (RA), team emotional/physical exhaustion (E), and team devaluation (D) (Appleby et al., 2018). Each of these subscales has a maximum value of 25. Scoring 5-11 = low burnout, 12-18 = moderate burnout, and 19-25 = high burnout.

Brief Resilient Coping Scale (BRCS)

The Brief Resilient Coping Scale (BRCS) was developed in 2004 to assess a personal level of resiliency to stressors using social constructs and interrelated coping ability (Sinclair & Wallston, 2004). From the early work on resilience by Polk (1997), lengthy coping scales were created for adolescents and elderly adults – ranging from 35-45 questions per instrument – piggybacking off Polk's characteristics. BRCS was the first instrument created and applied for resilient coping in adults. This served the dual purpose of assessing adults and providing a more truncated questionnaire, which the field was lacking. This instrument uses a five-attribute approach of perseverance, self-reliability, meaningfulness, existential aloneness, and composure that closely aligns with the dispositional and philosophical patterns Polk (1997) identified (Gallardo-Peralta et al., 2020; Sinclair & Wallston, 2004). The BRCS is a scaled response survey that consists of four total questions.

Reliability and Validity

Preliminary validity testing paired BRCS scores with coping resources, behaviors, and psychological well-being to find a consistency in correlations (Sinclair & Wallston, 2004). The authors created an Outcome Index using variables from measures of well-being and then analyzed these items (finding an alpha reliability of $\alpha = .86$), ultimately determining BRCS scores before the intervention significantly predicted outcomes after ($b = 2.35$; $p < .03$). Internal consistency was found in the instrument using Cronbach's alpha reliability upon each administration of the test where $\alpha = 0.64$, $\alpha = 0.76$, $\alpha = 0.69$, and $\alpha = .71$. Analysis was then conducted on the pooled sample resulting in $\alpha = 0.69$. Test-retest reliability correlation prior to the intervention was .71 ($n = 87$; $p < .001$) and after the intervention .68($n = 83$; $p < 001$) showing stability in the measure.

Studies across the globe have further utilized and validated the BRCS among multiple ethnicities and nationalities (Limonero et al., 2014; Kocalevent et al., 2017; Fung, 2020; Gallardo-Peralta et al., 2020; Sharp et al., 2023).

Scoring

The BRCS scores range from 1- *Does not describe me at all* to 5 - *Describes me very well* (Sinclair & Wallston, 2004) where a higher score signifies a higher level of resilient coping ability. Participants select one response that self-reportedly describes them and then scores are added together for an overall resilient coping score. Total scores of 4-13 points are considered low resilient copers, 14-16 points considered medium resilient copers, and 17-20 points are considered high resilient copers.

Data Collection Procedures

An online questionnaire was created using Qualtrics to collect data anonymously from athletes. This survey consisted of scaled response items from the identified instruments and included demographic questions of age range, race, and ethnicity. Upon IRB approval, the survey was sent to team managers / head coaches via email explaining the study and requesting they distribute it to their teams (Appendix B). The survey was open for three weeks. A reminder email was sent to the managers/coaches when there was one week remaining (Appendix C).

Informed consent was obtained at the beginning of the survey, and athletes were advised their responses were confidential (Appendix C). Additionally, it was clarified that participation was voluntary and could be discontinued at any time, there were no incentives associated with completing the survey, and potential risks were no greater than minimal day-to-day activities.

Analysis

The data was cleaned to remove incomplete responses, and the proper items were reverse coded on. The data from completed surveys was entered into IBM SPSS Statistics (version 29) for descriptive statistics and additional correlational and inferential analyses. The survey data specifications are located below (see Table 1*)* describing the level of data and analysis used in evaluating the research questions. First, the distribution of the data was assessed to determine which statistical analyses to use. Descriptive statistics analyzed by SPSS (version 29) present a skewness of the ABQ at .995 (SD 11.98), the TBQ was found to be skewed .293 (SD 8.18), and the BRCS skewness was found to be -.263 (SD 1.76). The closer the skewness variable is to zero, the more the data approaches

a normal distribution. However, it has to be presented in conjunction with the standard deviation. The acceptable range of skewness for normally distributed data falls between -2 and +2 with a SD < 1.98 (Dancey et al., 2014). Therefore, we can conclude the ABQ and TBQ data were not normally distributed. The BRCS data falls within the acceptable normalcy limits, however the comparison data does not. Thus, the bivariate relationship between athlete burnout and coping resiliency was assessed using Spearmen's rho for skewed data.

Table 1

Table of Specifications

Research Questions (RQ)	Survey Items Used to Assess RQ	Level of Data (Nominal, Ordinal, Interval/Ratio)	Analysis needed to assess RQ
To what extent does individual burnout occur in elite female soccer athletes?	Survey questions 1-3	Ordinal	Descriptive statistics - frequencies, percentages
To what extent does teammate burnout occur in elite female soccer athletes?	Survey questions 4-6	Ordinal	Descriptive statistics - frequencies, percentages
What is the correlation between individual burnout perception and level of coping resiliency?	Survey questions 1-3 and Survey question 7	Interval/ratio	Descriptive statistics - frequencies, percentages, and Spearman's rho for correlational analysis

Summary

In this cross-sectional study, USLW female athletes were surveyed to determine the level of burnout experienced individually and collectively alongside overall level of coping resiliency. The convenience sample of athletes was selected based on league participation and self-reported levels of burnout and coping. Instrumental rationale, data

collection process, and analysis were also thoroughly appraised to optimize this study and inform the next chapter.

Chapter IV: Findings of the Study

The purpose of this research project is to assess and compare perceptions of individual and team burnout to contribute to the knowledge of social impact upon burnout and coping resiliency among female elite athletes. The data collected was analyzed manually and using IBM SPSS Statistics (Version 29). The study was used to answer the following research questions:

- To what extent does individual burnout occur in elite female soccer athletes?
- To what extent does team burnout occur in elite female soccer athletes?
- What is the correlation between individual burnout perception and level of coping resiliency?

Participants

The participants in this study comprised a convenience sample of 18 female athletes in the United Soccer League – Women (USLW). Due to missing responses / incomplete surveys, a total of 13 were used for analysis. These female athletes ranged in age from 18-24+ with 77% (n = 10) in the 21-23 age range. Additional demographic information was collected regarding race and ethnicity where 23% (n = 3) were Spanish, Hispanic or Latino, 15% (n = 2) reported being multiracial, 77% (n = 10) White or Caucasian, and 8% (n = 1) other (Table 2).

Table 2

Demographic Information

Variable	**Frequency (n)**	**%**
Ethnicity		
Spanish, Hispanic, Latino	3	23%
Not Spanish, Hispanic, Latino	10	77%
Race		
White or Caucasian	10	77%
Multiracial	1	8%
Other	2	15%
Age Range		
18-20	2	15%
21-23	10	77%
24+	1	8%

Results

Research Question: To what extent does individual burnout occur in elite female soccer athletes?

Overall individual burnout scores were calculated using the Athlete Burnout Questionnaire (ABQ). The range of scores was 44 (19 points – 36 points), with a mean score of 34.92 (SD = 11.98). Over half of the athletes (n = 8, 62%) reported feeling successful at soccer and that they had many worthwhile accomplishments. Further, 46% (n = 6) reported sometimes feeling mentally and physically exhausted from soccer (Table 3). Most of the athletes experienced moderate burnout (n = 9, 69%), and only one reported high burnout (Table 4).

Table 3

Survey Questions ABQ

Survey Question How often do **you** feel this way?	**Almost Never n (%)**	**Rarely n (%)**	**Sometimes n (%)**	**Frequently n (%)**	**Almost Always n (%)**
Q1.1 I am accomplishing many worthwhile things in soccer.	0	0	2 (15%)	8 (62%)	3 (23%)
Q1.2 I feel tired from training that I have trouble finding energy to do other things.	0	2 (15%)	8 (62%)	3 (23%)	0
Q1.3 The effort I spend in soccer would be better doing other things.	4 (31%)	5 (38%)	3 (23%)	1 (8%)	0
Q1.4 I feel overly tired from my soccer participation.	4 (31%)	3 (23%)	4 (31%)	2 (15%)	0
Q1.5 I am not achieving much in soccer.	6 (46%)	5 (38%)	1 (8%)	1 (8%)	0
Q2.6 I don't care as much about soccer as I used to.	4 (31%)	4 (31%)	2 (15%)	3 (23%)	0
Q2.7 I am not performing up to my abilities in soccer.	1 (8%)	3 (23%)	5 (38%)	4 (31%)	0
Q2.8 I feel "wiped out" from soccer.	3 (23%)	3 (23%)	3 (23%)	2 (15%)	2 (15%)
Q2.9 I'm not into soccer like I used to be.	5 (38%)	3 (23%)	3 (23%)	2 (15%)	0
Q2.10 I feel physically worn out from soccer.	3 (23%)	3 (23%)	3 (23%)	3 (23%)	1 (8%)
Q3.11 I feel less concerned about being successful in soccer than I used to.	6 (46%)	4 (31%)	1 (8%)	1 (8%)	1 (8%)
Q3.12 I am exhausted by the mental and physical demands of soccer.	2 (15%)	4 (31%)	6 (46%)	0	1 (8%)
Q3.13 It seems that no matter what I do, I don’t perform as well as I should.	3 (23%)	6 (46%)	2 (15%)	1 (8%)	1 (8%)
Q3.14 I feel successful at soccer.	0	1 (8%)	3 (23%)	8 (62%)	1 (8%)
Q3.15 I have negative feeling towards soccer.	8 (62%)	1 (8%)	3 (23%)	1 (8%)	0

Table 4

ABQ Score Results (Overall)

Instrument	Frequency (n)	%
ABQ		
Low Burnout (1-25)	3	23%
Moderate Burnout (26-50)	9	69%
High Burnout (51-75)	1	8%

Data was also calculated on the subscales of the ABQ instrument separately by grouping sets of the 15 overall items together into three dimensions. These dimensions - *reduced accomplishment* (see Table 5), *emotional and physical exhaustion* (see Table 6), *and devaluation* (see Table 7) are scored and categorized by level. A majority of the athletes surveyed reported low levels of reduced accomplishment (n = 9, 69%), moderate levels of exhaustion (n = 7, 54%), and low levels of devaluation (n = 9, 69%).

Table 5

ABQ Reduced Accomplishment (RA) Results

Instrument	Frequency (n)	%
ABQ RA		
Low Reduced Accomplishment (5-11)	9	69%
Moderate Reduced Accomplishment (12-18)	3	23%
High Reduced Accomplishment (19-25)	1	8%

Table 6

ABQ Emotional/Physical Exhaustion (E) Results

Instrument	Frequency (n)	%
ABQ E		
Low Exhaustion (5-11)	5	38%
Moderate Exhaustion (12-18)	7	54%
High Exhaustion (19-25)	1	8%

Table 7

ABQ Devaluation (D) Results

Instrument	Frequency (n)	%
ABQ D		
Low Devaluation (5-11)	9	69%
Moderate Devaluation (12-18)	3	23%
High Devaluation (19-25)	1	8%

Research Question: To what extent does teammate burnout occur in elite female soccer athletes?

Results from the Teammate Burnout Questionnaire were used to determine athletes' perceptions of their teammates regarding burnout behavior. Many of the participants noted *sometimes* their teammates experience exhaustion in feeling tired with difficulty finding energy for other activities (n = 10, 77%) and feeling overly tired (n = 9, 69%). Moreover, 54% (n = 7) reported *sometimes* teammates are not performing to their potential (i.e., reduced accomplishment) (Table 8). All three of these constructs fall in line with a moderate level of burnout. The range of overall burnout scores was 31 (54 points – 23 points), with a mean score of 37.77 (SD = 8.18). Most athletes, 84% (n = 11), perceived a moderate level of burnout regarding their teammates (Table 9).

Table 8

Survey Questions TBQ

Survey Question How often do your **teammates** feel this way?	**Almost Never n (%)**	**Rarely n (%)**	**Sometimes n (%)**	**Frequently n (%)**	**Almost Always n (%)**
Q4.1 My teammates are accomplishing many worthwhile things in soccer.	0	2 (15%)	4 (31%)	5 (38%)	2 (15%)
Q4.2 My teammates feel tired from training and have trouble finding energy to do other things.	0	1 (8%)	10 (77%)	2 (15%)	0
Q4.3 The effort my teammates spend in soccer would be better doing other things.	3 (23%)	5 (38%)	5 (38%)	0	0
Q4.4 My teammates feel overly tired from my soccer participation.	0	3 (23%)	9 (69%)	1 (8%)	0
Q4.5 My teammates are not achieving much in soccer.	5 (38%)	4 (31%)	3 (23%)	1 (8%)	0
Q5.6 My teammates don't care as much about soccer as I used to.	2 (15%)	6 (46%)	4 (31%)	1 (8%)	0
Q5.7 My teammates are not performing up to their abilities in soccer.	1 (8%)	5 (38%)	7 (54%)	0	0
Q5.8 My teammates feel "wiped out" from soccer.	0	4 (31%)	6 (46%)	3 (23%)	0
Q5.9 My teammates are not into soccer like they used to be.	1 (8%)	6 (46%)	4 (31%)	2 (15%)	0
Q5.10 My teammates feel physically worn out from soccer.	0	4 (31%)	5 (38%)	2 (15%)	2 (15%)
Q6.11 My teammates feel less concerned about being successful in soccer than they used to.	5 (38%)	4 (31%)	3 (23%)	1 (8%)	0
Q6.12 My teammates are exhausted by the mental and physical demands of soccer.	0	4 (31%)	6 (46%)	3 (23%)	0
Q6.13 It seems that no matter what my teammates do, they don’t perform as well as they should.	4 (31%)	4 (31%)	3 (23%)	2 (15%)	0
Q6.14 My teammates feel successful at soccer.	0	1 (8%)	6 (46%)	4 (31%)	2 (15%)
Q6.15 My teammates have negative feeling towards soccer.	3 (23%)	4 (31%)	6 (46%)	0	0

Table 9

TBQ Score Results (Overall)

Instrument	Frequency (n)	%
TBQ		
Low Burnout (1-25)	1	8%
Moderate Burnout (26-50)	11	84%
High Burnout (51-75)	1	8%

As with the ABQ, data was also calculated on the subscales of the TBQ instrument separately by grouping the overall items together into three dimensions. These dimensions – *teammate reduced accomplishment* (Table 10), *teammate emotional and physical exhaustion* (Table 11), and *teammate devaluation* (Table 12) – are scored and categorized below. Notably, a majority of the athletes surveyed reported moderate levels of teammate reduced accomplishment (n = 8, 62%), while they self-reported low levels individually. Similarly to individual reports, the dimensions of teammate exhaustion (n = 9, 69%) and teammate devaluation (n = 8, 62%), were moderate and low respectively.

Table 10

TBQ Reduced Accomplishment (RA) Results

Instrument	Frequency (n)	%
TBQ RA		
Low Reduced Accomplishment (5-11)	5	38%
Moderate Reduced Accomplishment (12-18)	8	62%
High Reduced Accomplishment (19-25)	0	0%

Table 11

TBQ Emotional/Physical Exhaustion (E) Results

Instrument	Frequency (n)	%
TBQ E		
Low Exhaustion (5-11)	1	8%
Moderate Exhaustion (12-18)	9	69%
High Exhaustion (19-25)	3	23%

Table 12

TBQ Devaluation (D) Results

Instrument	Frequency (n)	%
TBQ D		
Low Devaluation (5-11)	8	62%
Moderate Devaluation (12-18)	5	38%
High Devaluation (19-25)	0	0%

Research Question: What is the correlation between individual burnout perception and level of coping resiliency?

Athletes overall resilient coping scores were determined by the BRCS and ranged from 13 points to 18 points (range = 5) with a mean score of 15.38. The score that was self-reported most often was 16 points (n = 4, 31%) (Table 13) which translates to a medium level of resilient coping ability. Ultimately, three athletes reported low resilient coping, six athletes reported medium resilient coping, and four reported high resilient coping.

Table 13

Brief Resilient Coping Scale (BRCS) Frequency Table

BRCS TOTAL SCORE		
Score	**Frequency**	**Percentage**
13 (low)	3	23%
14 (medium)	2	15%
16 (medium)	4	31%
17 (high)	3	23%
18 (high)	1	8%
TOTAL	**13**	**100%**

A non-parametric test for skewed data (Spearman's rho) was run on the correlation between the two variables of athlete burnout using ABQ and coping resiliency using BRCS. Spearman's rho was calculated at .976 which indicates a very strong correlation (Cohen, 1988 as cited by Dancey et al., 2014). Additionally, there is statistical significance (p = <.001; rho = .976, {two-tailed}), so we can conclude there is a very strong correlation between level of burnout and coping resiliency.

Summary

The purpose of this study was to determine perceptions of individual burnout, team burnout, and level of coping resiliency among elite female soccer athletes in the USLW. The researcher conducted a study of athletes from two teams participating in the inaugural 2022 season for levels of burnout and the social impact on burnout. Additionally, the researcher examined the relationship between level of individual burnout and coping resiliency.

Most of the athletes in the study were assessed as moderately burnt out in both individual and team reports. The majority also considered themselves medium resilient

copers. Importantly, there was a very strong, significant correlation between burnout and coping resiliency.

Chapter V: Conclusions and Recommendations

On average 1 in 4 females experiences mental illness and it is most prevalent in young adults aged 18-25 (National Institute of Mental Health, 2022). Since stress, burnout, coping resiliency, and mental illness are interrelated (Wallston & Sinclair, 2004; Colligan & Higgins, 2006; De Francisco et al., 2016; MedlinePlus, 2020a, 2020b), it is important to understand the role burnout plays in different environments. Burnout in team athletes exists individually and collectively (Gustafsson et al., 2017; Appleby et al., 2018) and there is a need to study female cohorts of athletes as they are traditionally underrepresented in research studies (Currie et al., 2021). This chapter will summarize the study, discuss primary results, and offer prospective opportunities for future research as well as applicability with Health Education.

Summary

This study was conducted on elite pre-professional female soccer athletes in the United Soccer League – Women. These athletes, aged 18-24+ self-reported perceptions of both individual and team burnout along with coping resiliency. Data was collected using an electronic survey with 37 items, grouped by instrument and subscale. The survey was distributed to the athletes by their managers/coaches via email. A total of 13 athletes fully participated in the study.

Athletes self-reported a moderate level of individual burnout and a moderate level of team burnout, which is higher than previous studies (Appleby et al., 2022). They also reported a medium level of coping resilient ability. Further, there was a very strong, significant correlation between athlete burnout and coping resiliency (p = <.001; rho = .976, {two-tailed}).

Discussion and Conclusion

Among the 13 participants, there was a mean individual burnout score of 35 (on a 75-point scale), a mean teammate burnout score of 38 (on a 75-point scale), and a mean coping resiliency score of 15 (on a 20-point scale). These numbers coincide with a moderate level of perceived burnout and a medium level of coping resiliency. The burnout scores are slightly higher than previous studies using both ABQ and TBQ scales which typically rank in the low burnout range (Appleby et al., 2022). These numbers could be elevated over previous research due to a variety of factors including visibility to mental health concerns, the decreasing stigmatization surrounding burnout and mental illness, gender differences, and other constructs specific to elite soccer environments (intensity and amount of team interaction, hierarchy within the organization, coaching style, relationships with other members of the organization, etc.). Results from the Harris Poll conducted by the American Psychological Association show that people in the US are increasingly open about mental health issues (American Psychological Association, 2019). This could factor into decreasing stigmatization resulting in more respondents being open to honest responses than previous cohorts were or having increased mental health literacy.

Importantly, this is the first study that attempted to use a combined instrument of the ABQ and TBQ with the BRCS. The correlational analysis in this study between athlete burnout and coping resiliency resulted in a very strong, significant relationship. The prominent takeaway from these results is that burnout exists in the elite athletic arena of female soccer players, and that coping resiliency and perceived burnout level are

related. This study supports the problem of stress among elite athletes, even when not currently in competition season, and warrants further use of the combined instrument.

Recommendation for Health Education

Research in the areas of elite athlete and teammate burnout are increasing, but currently there is little evidence-based intervention literature on the subject (Appleby et al., 2022; Rice et al., 2016). A literature review of stress management intervention in all levels of athletes in 2012 found 40% of studies to that point had been conducted on team sports (Rumbold et al., 2012). Health educators should note that within these interventions, multi-modal techniques stood out as being most effective. For example, self-talk combined with imagery and relaxation was the most effective technique for combatting anxiety. Another example involves replacing negativity with positivity and cognitive appraisals facilitate effective coping behaviors.

Among Canadian collegiate student athletes, interventions strengthening social support have offered promising results on improving stress management with a sense of cohesion and belonging (Storey et al., 2022). These interventions include an online stress management tool called MyStudentBody-Stress (Chiauzzi et al., as cited in Storey et al., 2022), a shared leadership program, a social group relationship development program called GROUPS 4 HEALTH, and interventions supporting improved sleep training (Storey et al., 2022). Other studies support creation of new intervention materials to target issues specific to athletes and organizational climates that are sport specific (Gulliver et al., 2012; Rice, et al., 2016).

The lack of confidence in organizations prioritizing mental health (National Collegiate Athletics Association, 2022) and 53% of coaches interested in mental health

promotion are also good avenues for health educators to focus mental health resources, training, and tools. Nearly half of collegiate athletes not knowing where to find resources and more than half uncomfortable seeking help on campus are other areas for improvement. Programs and interventions targeting increasing mental health literacy and resource support could help to create a shift in stigma and confidence as well.

The USLW serves as a bridge between high school/collegiate athletics and professional sports. As such, health educators can focus on stress mitigation and coping strategies while athletes are in school. An example of a resource that was created for this purpose is the *Student Athlete Connections* website, which helps to guide volleyball players through the recruitment process and has good stress management/burnout mitigation resources as well (Student Athlete Connections, 2023). Expanding on this concept could provide more student athletes with resources to manage stress and practice coping as well as connecting to a broader network. This could help them to make better connections with their social environments that can be extrapolated from the more homogenous school cohorts to broader communities, both in and out of sport. Further, health educators can provide the tools to coaches/teams to help them address mentally healthy habits directly, assist in relationship building to provide an optimal environment, and encourage meaningful interactions. Proactive initiatives could help to change the team sport environment, rather than having players burnout – necessitating an intervention or reactive approach.

Implications for Future Research

This study focused on two teams of elite female athletes in the USLW league. The small sample size (n = 13) hinders the ability to produce results that can be applied on a

broader scale but doesn't negate the fact that stress and burnout are prevalent at a moderate level within this population. This particular survey was conducted on female athletes during the off-season, while previous studies were conducted on male athletes during competition seasons. Interestingly, the results in the current study expressed higher levels of burnout out of season than other studies in season, and additional studies need to be done both in and out of season to determine if these differences are due to gender or some other variable. Further, the study should be conducted using this instrument on other sports to assess the magnitude of stress and burnout in all team sports. From there, programs can be developed to combat the negative effects and increase coping resiliency.

Moreover, the USLW league competed inaugurally in 2022. Future research repeating the questionnaire could be useful, as current cross-sectional research establishes an initial burnout level, but does not provide the benefit of a longitudinal study. Repeating this study in the same population could offer a better understanding of the level of burnout and coping resiliency that occurs across the league during competition. Determining the levels of teammate burnout over time could provide insight into additional needs to combat stress within group sports and help to design programs and interventions focused on addressing stress and burnout collectively.

Additionally, more studies should be done to incorporate athlete and team stress/burnout with more in depth analysis on specific coping measures, facilitators and barriers to seeking assistance, and helpful resources to combat stress, burnout, and mental health concerns.

References

Al-Yaaribi, A., & Kavussanu, M. (2017). Teammate prosocial and antisocial behaviors predict task cohesion and burnout: The mediating role of affect. *Journal of Sport & Exercise Psychology, 39,* 199-208. https://doi.org/10.1123/jsep.2016-0336

American Psychological Association. (n.d.). *APA Dictionary of Psychology: Eustress.* https://dictionary.apa.org/eustress

American Psychological Assocication. (2019, May 1). *Survey: Americans Becoming More Open About Mental Health.* https://www.apa.org/news/press/releases/2019/05/mental-health-survey

Appleby, R., Davis, P., Davis, L., & Gustafsson, H. (2017). Examining perceptions of teammates' burnout and training hours in athlete burnout. *Journal of Clinical Sport Psychology, 12*(3), 316-332. https://doi.org/10.1123/jcsp.2017-0037

Appleby, R., Davis, P.A, Davis, L., Stenling, A., & Vickery, W. (2022). Preliminary psychometric validation of the teammate burnout questionnaire. *Frontiers in Psychology, 13,* 894308. https://doi.org/10.3389/fpsyg.2022.894308

Bates, M.E., & Buckman, J.F. (2013). Chapter 20 – Integrating body and brain systems in addiction neuroscience. *Biological Research on Addiction, 2,* 187-198. https://doi.org/10.1016/B978-0-12-398335-0.00020-0

Beable, S., Fulcher, M., Lee, A.C., & Hamilton, B. (2017). SHARPSports mental health awareness research project: Prevalence and risk factors of depressive symptoms and life stress in elite athletes. *Journal of Science and Medicine in Sport, 20*(10), 1047-1052. https://doi-org.ezproxy.mnsu.edu/10.1016/j.jsams.2017.04.018

Bianco, T., & Eklund, R.C. (2001). Conceptual considerations for social support research in sport and exercise settings: The case of sport injury. *Journal of Sport & Exercise Psychology, 23,* 85-107. https://doi-org.ezproxy.mnsu.edu/10.1123/jsep.23.2.85

Campo, J. (2012). Annual research review: Functional somatic symptoms and associated anxiety and depression – developmental psychopathology in pediatric practice. *The Journal of Child Psychology and Psychiatry, 53*(5), 575-592. https://doi-org.ezproxy.mnsu.edu/10.1111/j.1469-7610.2012.02535.x

Carr, C.P., Martins, C.M.S., Stingel, A.M., Lemgruber, V.B., & Juruena, M.F. (2013). The role of early life stress in adult psychiatric disorders, a systematic review according to childhood trauma subtypes. *The Journal of Nervous and Mental Disease, 201*(12). 1007-1020. https://doi.org/10.1097/NMD.0000000000000049

Castadelli-Maia, J.M., de Mello e Gallinaro, J.G., Falcao, R.S., Gouttebarge, V., Hitchcock, M.E., Hainline, B., Reardon, C.L., & Stull, T. (2019). Mental health symptoms and disorders in elite athletes: a systematic review on cultural influencers and barriers to athletes seeking treatment. *British Journal of Sports Medicine.* http://dx.doi.org.ezproxy.mnsu.edu/10.1136/bjsports-2019-100710

Caufield, A., Vatansever, D., Lambert, G., & Van Bortel, T. (2018). WHO guidance on mental health training: a systematic review of the progress for non-specialist health workers. *BMJ Open, 9,* e024059. http://dx.doi.org/10.1136/bmjopen-2018-024059

Centers for Disease Control and Prevention. (2021). *National Vital Statistics System, Mortality 1999-2020* on *CDC WONDER Online Database.* https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=EF7B7CB3D1E7980FFC353CD2FE10

Centers for Disease Control and Prevention. (2023a, April 25). *About mental health.* https://www.cdc.gov/mentalhealth/learn/index.htm

Centers for Disease Control and Prevention. (2023b, March 21). *Myalgic Encephalomyelitis / Chronic Fatigue Syndrome Epidemiology.* https://www.cdc.gov/me-cfs/healthcare-providers/presentation-clinical-course/epidemiology.html

Chaby, L.E., Zhang, L., & Liberzon, I. (2017). The effects of stress in early life and adolescence on posttraumatic stress disorder, depression, and anxiety symptomatology in adulthood. *Current Opinion in Behavioral Sciences, 14,* 86-93. https://doi-org.ezproxy.mnsu.edu/10.1016/j.cobeha.2017.01.001

Chaturvedi, S.K., & Desai, G. (2013). Measurement and assessment of somatic symptoms. *International Review of Psychiatry*, *25*(1), 31-40. https://doi-org.ezproxy.mnsu.edu/10.3109/09540261.2012.727787

Colligan, T.W., & Higgins, E.M. (2006). Workplace stress. *Journal of Workplace Behavioral Health, 21(*2*),* 89-907. https://doi.org/10.1300/J490v21n02_07

Cottrell, R. R., and McKenzie, J.F. (2011). *Health Promotion and Education Research Methods Using the Five-Chapter Thesis/Dissertation Model* (2nd ed.). Jones and Bartlett Publishers.

Currie, A., Blauwet, C., Bindra, A., Budgett, R., Campriani, N., Hainline, B., McDuff, D., Mountjoy, M., Purcell, R., Putukian, M., Reardon, C.L., & Gouttebarge, V. (2021). Athlete mental health: future directions. *British Journal of Sports Medicine, 55*(22), 1243-1250. https://doi.org/10.1136/bjsports-2021-104443

Dancey, C.P., Reidy, J.G., & Rowe, R. (2014). *Statistics for the health sciences*. SAGE Publications Inc.

Daumiller, M., Rinas, R., & Breithecker J. (2022). Elite athletes' achievement goals, burnout levels, psychosomatic stress symptoms, and coping strategies. *International Journal of Sport and Exercise Psychology, 20*(2), 416-435. https://doi.org/10.1080/1612197X.2021.1877326

Davis, L., Appleby, R., Davis, P., Wetherell, M., & Gustafsson, H. (2018). The role of coach-athlete relationship quality in team sport athletes' psychophysiological exhaustion: implications for physical and cognitive performance. *Journal of Sports Sciences, 36(*17*),* 1985-1992. https://doi.org/10.1080/02640414.2018.1429176

De Francisco, C., Arce, C., Vilchez, M.D.P., & Vales, A. (2016). Antecedents and consequences of burnout in athletes: Perceived stress and depression. *International Journal of Clinical Health and Psychology, 16,* 239-246. https://doi.org/10.1016/j.ijchp.2016.04.001

Di Fronso, S., Montesano, C., Costa, S., Santi, G., Robazza, C., & Bertollo, M. (2021). Rebooting in sport training and competitions: Athletes' perceived stress levels and the role of interoceptive awareness. *Journal of Sports Sciences, 40*(5), 542-549. https://doi-org.ezproxy.mnsu.edu/10.1080/02640414.2021.2004679

Dimoff, J.K., & Kelloway, E.K. (2019). Mental health problems are management problems: Exploring the critical role of managers in supporting employee mental health. *Organizational Dynamics, 48,* 105-112. http://doi.org/10.1016/j.orgdyn.2018.11.003

Dyer, J.G., & McGuinness, T.M. (1996). Resilience: Analysis of the concept. *Archives of Psychiatric Nursing, 10*(5), 276-282. https://doi-org.ezproxy.mnsu.edu/10.1016/S0883-9417(96)80036-7

Elsenbruch, S., & Enck, P. (2017). The stress concept in gastroenterology: from Selye to today. *F1000 Research, 6,* 2149. https://doi.org/10.2688/f1000research.12435.1

Evans-Lacko, S., Aguilar-Gaxiola, S., Al-Hamzawi, A., Alonso, J., Benjet, C., Bruffaerts, R., Chiu, W.T., Florescu, S., de Girolamo, G., Gureje, O., Haro, J.M., He, Y., Hu, C., Karam, E.G., Kawakami, N., Lee, S., Lund, C., Kovess-Masfety, V., Levinson, D., Navarro-Mateu, F., Pennell, B.E., Sampson, N.A., Scott, K.M., Tachimori, H., ten Have, M., Viana, M.C., Williams, D.R., Wojtyniak, B.J., Zarkov, Z., Kessler, R.C., Chatterki, C. & Thornicroft, G. (2017). Socio-economic variations in the mental health treatment gap for people with anxiety, mood, and substance use disorders: results from the WHO World Mental Health (WMH) surveys. *Psychological Medicine, 48,* 1560-1571. https://doi.org/10.1017/S0033291717003336

Federation Internationale de Football Association. (2019). *FIFA Professional Football Report 2019.* https://digitalhub.fifa.com/m/a59132e138824c1c/original/jlr5corccbsef4n4brde.pdf

Fung, S.F. (2020) Validity of the brief resilience scale and brief resilient coping scale in a Chinese sample. *International Journal of Environmental Research and Public Health, 17*(4), 1265. https://doi-org.ezproxy.mnsu.edu/10.3390%2Fijerph17041265

Gallardo-Peralta, L.P., Rodrigues-Blazquez, C., Ayala-Garcia, A., & Forjaz, M.J. (2020). Validation of the brief resilient coping scale (brcs) in a multiethnic sample of Chilean older people. *Interciencia, 45*(11), 524-531. https://www.proquest.com/scholarly-journals/validation-brief-resilient-coping-scale-brcs/docview/2474304644/se-2

Gerber, M., Gustafsson, H., Seelig, H., Kellman, M., Ludyga, S., College, F., Brand, S., Isoard-Gautheur, S., & Renzo, B. (2018). Usefulness of the Athlete Burnout Questionnaire (ABQ) as a screening tool for the detection of clinically relevant burnout symptoms among young elite athletes. *Psychology of Sport and Exercise, 39,* 104-113. https://doi.org/10.1016/j.psychsport.2018.08.005

Global Burden of Disease 2019 Mental Disorders Collaborators. (2022). Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990-2019: a

systematic analysis from the Global Burden of Disease Study 2019. *The Lancet Psychiatry*. https://doi.org/10.1016/S2215-0366(21)00395-3

Global Wellness Institute. (n.d.). *What is wellness?* Retrieved February 20, 2023, from https://globalwellnessinstitute.org/what-is-wellness/

Gould, D., Udry, E., Tuffey, S., & Loehr, J. (1996). Burnout in competitive junior tennis players: I. A quantitative psychological assessment. *The Sport Psychologist, 10,* 322-340. https://search-ebscohost-com.ezproxy.mnsu.edu/login.aspx?direct=true&db=s3h&AN=9708020823

Gouttebarge, V., Castaldelli-Maia, J.M., Gorczynski, P., Hainline, B., Hitchcock, M.E., Kerkhoffs, G., Rice, S.M., & Reardon, C.L. (2019). Occurrence of mental health symptoms and disorders in current and former elite athletes: a systematic review and meta-analysis. *British Journal of Sports Medicine, 53,* 700-706. http://dx.doi.org/10.1136/bjsports-2019-100671

Guisti, N.E., Carder, S.L., Wolf, M., Vopat, L., Baker, J., Tarakemeh, A., Bal, K., Randall, J., & Vopat, B.G. (2022). A measure of burnout in current NCAA student-athletes. *Kansas Journal of Medicine, 15,* 325-330. https://doi.org/10.17161/kjm.vol15.17784

Gulliver, A., Griffiths, K.M., & Christensen, H. (2012). Barriers and facilitators to mental help-seeking for young elite athletes: a qualitative study. *BMC Psychiatry, 12,* 1-14. https://doi-org.ezproxy.mnsu.edu/10.1186/1471-244X-12-157

Gustafsson, H., DeFreese, T.D., & Madigan, D.J. (2017). Athlete burnout: Review and recommendations. *Current Opinion in Psychology, 16,* 109-113. http://dx.doi.org/10.1016/j.copsyc.2017.05.002

IBM Corp. Released 2023. IBM SPSS Statistics for Windows, Version 29.0 [computer software]. Armonk, NY: IBM Corp.

Ivarsson, A., & Johnson, U. (2010). Psychological factors as predictors of injuries among senior soccer players. A prospective study. *Journal of Sports Science and Medicine, 9*(2), 347-352. https://link-gale-com.ezproxy.mnsu.edu/apps/doc/A228661640/GPS?u=mnamsumank&sid=bookmark-GPS&xid=deceac01

Kalinowski, P., Bojkowiski, L., Sliwowski, R., Wieczorek, A., Konarski, J., & Tomczak, M. (2020). Mediational role of coping with stress in relationship between personality and effectiveness of performance of soccer players. *International Journal of Sports Science & Coaching, 15*(3), 354-363. https://doi.org/10.1177/1747954120915190

Kelloway, E. K. (2019). Prevention, Intervention, and Accommodation: Introduction to the Special Issue on Mental Health in the Workplace. *Organizational Dynamics, 48,* 73-74. https://doi.org/10.1016/j.orgdyn.2019.03.005

Kessler, R.C., Demler, O., Frank, R.G., Olfson, M., Pincus, H.A., Walters, E.E., Wang, P., Wells, K.B., & Zaslavsky, A.M. (2005). Prevalence and treatment of mental disorders, 1990 to 2003. *New England Journal of Medicine, 352,* 2515-2523. https://doi.org/10.1056/NEJMsa043266

Keyes, K.M., Hatzenbuehler, M.L., & Hasin, D.S. (2011). Stressful life experiences, alcohol consumption, and alcohol use disorders: the epidemiologic evidence for four main types of stressors. *Psychopharmacology, 218*(1), 1-17. https://doi.org/10.1007/s00213-011-2236-1

Kivimaki, M., & Kawachi, I. (2015). Work stress as a risk factor for cardiovascular disease. *Current Cardiology Reports, 17*(9), 388-401. https://doi-org.ezproxy.mnsu.edu/10.1002/smi.3093

Kocalevent, R.D., Mierke, A., Danzer, G., & Klapp, B.F. (2014). Adjustment disorders as a stress-related disorder: A longitudinal study of the associations among stress, resources, and mental health. *PLoS ONE, 9*(5), Article e97303. https://doi.org/10.1371/journal.pone.0097303

Kocalevent, R.D., Zenger, M., Hinz, A., Klapp, B., & Brahler, E. (2017). Resilient coping in the general population: standardization of the brief resilient coping scale (BRCS). *Health and Qualirt of Life Outcomes, 15,* 251. https://doi.org/10.1186/s12955-017-0822-6

Limonero, J.T., Tomas-Sabado, J., Gomez-Romero, M.J., Mate-Mendez, J., Sinclair, V.G., Wallston, K.A., & Gomex-Benito, J. (2014). Evidence for validity of the brief resilient coping scale in a young Spanish sample. *Spanish Journal of Psychology, 17*(34), 1-9. https://doi.org/10.1017/sjp.2014.35

Madigan, D.J., Olsson, L.F., Hill, A.P., Curran, T. (2022). Athlete burnout symptoms are increasing: A cross-temporal meta-analysis of average levels from 1997 to 2019. *Journal of Sports and Exercise Psychology, 44,* 153-168. https://doi.org/10.1123/jsep.2020-0291

Maslach, C., & Jackson, S.E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior 2(*2), 99-113. http://www.jstor.org/stable/3000281

Maslach, C, & Jackson, S.E. (1984). Patterns of burnout among a national sample of public contact workers. *Journal of Health and Human Resources Administration, 7*(2), 189-212. https://www.jstor.org/stable/25780192

Masten, A.S. (2013). Global perspectives on resilience in children and youth. *Child Development, 85*(1), 6-20. https://doi-org.ezproxy.mnsu.edu/10.1111/cdev.12205

MedlinePlus. (May 2020a). *How to improve mental health.* https://medlineplus.gov/howtoimprovementalhealth.html

MedlinePlus. (May 2020b). *Mental Disorders.* https://medlineplus.gov/mentaldisorders.html

Melamed, S., Shirom, A., Toker, S., Berliner, S., & Shapira, I. (2006). Burnout and risk of cardiovascular disease: Evidence, possible causal paths, and promising research directions. *Psychological Bulletin, 132*(3), 327-353. https://doi.org/10.1037/0033-2909

Mohammed, W.A., Pappous, A., & Sharma, D. (2018). Effect of mindfulness based stress (mbsr) in increasing pain tolerance and improving the mental health of injured athletes. *Frontiers in Psychology, 9,* Article 722. https://doi.org/10.3389/fpsyg.2018.00722

Moseid, N.F.H, Lemyre, N., Roberts, G.C., Fagerland, M.W., Moseid, C.H., & Bahr, R. (2023). Associations between health problems and athlete burnout: a cohort study in 210 adolescent elite athletes. *BMJ Open Sport and Exercise Medicine, 9,* 1-11. https://doi.org/10.1136/bmjsem-2022-001514

National Collegiate Athletics Association (2022). *NCAA student-athlete well-being studies (Fall 2021) survey results.* https://ncaaorg.s3.amazonaws.com/research/other/2020/2022RES_NCAA-SA-Well-BeingSurveyPPT.pdf

National Institutes of Health. (December 2022). *Your healthiest self, Physical wellness toolkit*. https://www.nih.gov/health-information/physical-wellness-toolkit

National Institute of Mental Health. (January 2022). *Mental illness.* https://www.nimh.nih.gov/health/statistics/mental-illness

Nicholls, A.R., Madigan, D.J., & Earle, K. (2022). Multi-wave analysis of coping, athlete burnout, and well-being among F.A. Premier League academy players. *Frontiers in Psychology, 13,* Article 979486. https://doi-org.ezproxy.mnsu.edu/10.3389%2Ffpsyg.2022.979486

Pacewicz, C.E., Smith, A.L., & Raedeke, T.D. (2020). Group cohesion and relatedness as predictors of self-determined motivation and burnout in adolescent female athletes. *Psychology of Sports and Exercise, 50,* 101709. https://doi.org/10.1016/j.psychsport.2020.101709

Polk, L.J. (1997). Toward a middle-range theory of resilience. *Advances in Nursing Science*, 19(3), 1-13. https://oce-ovid-com.ezproxy.mnsu.edu/article/00012272-199703000-00002/HTML

Qualtrics. (2023). Qualtrics (Version XM) [Computer software]. https://www.qualtrics.com

Raedeke, T.D. (1997). Is athlete burnout more than just stress? A sport commitment perspective. *Journal of Sport and Exercise Psychology, 19,* 396-417. https://doi.org/10.1123/jsep.19.4.396

Raedeke, T.D., & Smith, A.L. (2001). Development and preliminary validation of an athlete burnout measure. *Journal of Sport and Exercise Psychology, 23,* 281-306. https://doi.org/10.1123/jsep.23.4.281

Raedeke, T.D., & Smith, A.L. (2004). Coping resources and athlete burnout: An examination of stress mediated and moderation hypothesis. *Journal of Sport and Exercise Psychology, 26,* 525-541. https://doi-org.ezproxy.mnsu.edu/10.1123/jsep.26.4.525

Rebar, A.L., Duncan, M.J., Short, C., & Vandelanotte. (2014). Differences in health quality of life between three clusters of physical activity, sitting time, depression, anxiety, and stress. *BMC Public Health, 14,* 1088-1093. http://www.biomedcentral.com/1471-2458/14/1088

Rice, S.M., Purcell, R., De Silva, S., Mawren, D., McGorry, P.D., & Parker, A.G. (2016). The mental health of elite athletes: A narrative systematic review. *Sports Medicine, 46*(9), 1333-1353. https://doi.org/10.1007/s40279-016-0492-2

Ritchie, H., Spooner, F., & Roser, M. (2019). *Causes of death*. Our World In Data. https://ourworldindata.org/causes-of-death#citation

Rohner, S.L., Bernays, F., Maercker, A., & Thoma, M.V. (2021). Salutary mechanisms in the relationship between stress and health: The mediating and moderating roles of sense of coherence – revised. *Stress & Health, 38(*2*),* 388-401. https://doi-org.ezproxy.mnsu.edu/10.1002/smi.3093

Rumbold, J.L., Fletcher, D., & Daniels, K. (2012). A systematic review of stress management interventions with sport performers. *Sport, Exercise, and Performance Psychology, 1*(3), 173-193. https://doi.org/10.1037/a0026628

Salleh, M.R. (2008). Life event, stress, and illness. *The Malaysian Journal of Medical Sciences, 15*(4), 9-18.

Schmahmann, J.D. (2004). Disorders of the cerebellum: Ataxia, dysmetria of thought, and the cerebellar cognitive affective syndrome. *The Journal of Neuropsychiatry and Clinical Neurosciences, 16(3),* 367-378. https://doi.org/10.1176/jnp.16.3.367

Schmahmann, J.D., & Sherman, J.C. (1998). The cerebellar cognitive affective syndrome. *Brain, 121*(4). 561-79. https://doi.org/10.1093/brain/121.4.561

Shannon, S., Hanna, D., Haughey, T., Leavey, G., McGeown, C., & Breslin, G. (2019). Effects of mental health intervention in athletes: Applying self-determination theory. *Frontiers in Psychology, 10,* Article 1875. https://doi-org.ezproxy.mnsu.edu/10.3389%2Ffpsyg.2019.01875

Sharp, P., Oliffe, J.L., Kealy, D., Rice, S.M., Seidler, Z.E., & Ogrodniczuk, J.S. (2023). Social support buffers young men's resilient coping to psychological distress. *Early Intervention in Psychiatry.* Advance online publication. https://doi-org.ezproxy.mnsu.edu/10.1111/eip.13371

Sinclair, V. G., & Wallston, K.A. (2004). The development and psychometric evaluation of the Brief Resilient Coping Scale. *Assessment, 11 (*1*),* 94-101. https://www.ncbi.nlm.nih.gov/pubmed/14994958

Sinclair, V.G., Wallston, K.A., & Strachan, E. (2016). Resilient coping moderates the effect of trauma exposure on depression. *Research in Nursing and Health, 39*(4), 244-252. https://doi-org.ezproxy.mnsu.edu/10.1002/nur.21723

Sinha, R., Lacadie, C.M., Constable, T., & Seo, D. (2016). Dynamic neural activity during stress signals resilient coping. *Proceedings of the National Academy of Sciences of the United States of America, 113*(31), 8837-8842. https://www-ncbi-nlm-nih-gov.ezproxy.mnsu.edu/pmc/articles/PMC4978278/

Smith, R.E. (1986). Toward a cognitive-affective model of athletic burnout. *Journal of Sport Psychology, 8,* 36-50. https://search-ebscohost-com.ezproxy.mnsu.edu/login.aspx?direct=true&db=s3h&AN=20718086

Stead, R., Shanahan, M.J., & Neufeld, R.W.J. (2010). "I'll go to therapy, eventually": Procrastination stress and mental health. *Personality and Individual Differences, 49*(3). 175-180. https://doi-org.ezproxy.mnsu.edu/10.1016/j.paid.2010.03.028

Stoewen, D.L. (2017). Dimensions of wellness: Change your habits, change your life. *The Candian Veterinary Journal 58*(8), 861-862.

Storey, Q.K., Hewitt, P.L., & Ogrodniczuk, J.S. (2022). Managing daily responsibilities among collegiate student-athletes: Examining the roles of stress, sleep, and sense of belonging. *Journal of American College Health.* https://doi.org/10.1080/07448481.2022.2093610

Student Athlete Connections. (2023). *7 Things Every Student-Athlete Can Do to Manage Stress and Avoid Burnout*. https://www.studentathleteconnections.com/manage-stress/

Swann, C., Moran, A., & Piggott, D. (2015). Defining elite athletes: Issues in the study of expert performance in sport psychology. *Psychology of Sport and Exercise, 16*(1), 3-14. https://doi-org.ezproxy.mnsu.edu/10.1016/j.psychsport.2014.07.004

The World Book. (2022). *What does physical health mean?* Retrieved February 20, 2023, from https://theworldbook.org/physical-health/

Tinline, G., and Cooper, C. (2019). Work related stress: The solution is management not mindfulness. *Organizational Dynamics, 48,* 93-97. https://doi.org/10.1016/j.orgdyn.2019.03.004

Udry, E., Gould, D., Bridges, D., & Tuffey, S. (1997). People helping people? Examining the social ties of athletes coping with burnout and injury stress. *Journal of Sport & Exercise Psychology, 19,* 368-395. https://doi-org.ezproxy.mnsu.edu/10.1123/jsep.19.4.368

United Soccer League – Women. (n.d.). *FAQS*. Retrieved August 18, 2022, from https://www.uslwleague.com/faqs

United Soccer League – Women. (n.d.). *About the W league.* Retrieved March 2, 2023, from https://www.uslwleague.com/about

Veroutsos, E. (2022, October 20). The most popular sports in the world. *World Atlas: Society.* https://www.worldatlas.com/articles/what-are-the-most-popular-sports-in-the-world.html

Walker, E.R., McGee, R.E., & Druss, B.G. (2015). Mortality in mental disorders and global disease burden implications. A systematic review and meta-analysis. *JAMA Psychiatry, 72*(4), 334-331. https://www.doi.org/10.1001/jamapsychiatry.2014.2502

Ward, T., Stead, T., Mangal, R., & Ganti, L. (2023). Prevalence of stress amongst high school athletes. *Health Psychology Research, 11,* 1-6. https://doi.org/10.52965/001c.70167

Watanabe, N., Stewart, R., Jenkins, R., Bhugra, D.K., & Furukawa, T.A. (2008). The epidemiology of chronic fatigue, physical illness, and symptoms of common mental

disorders: A cross-sectional survey from the second British national survey of psychiatric morbidity. *Journal of Psychosomatic Research, 64*(4), 357-362. https://doi-org.ezproxy.mnsu.edu/10.1016/j.jpsychores.2007.12.003

Wilson, S., Harenberg, S., Stillwell, T., Vosloo, J., & Keenan, L. (2022). Prevalence and predictors of depressive symptoms in NCAA division III collegiate athletes. *Journal of Athlete development and Experience,* 4(1), 55-70. https://doi.org/10.25035/jade.04.01.05

World Health Organization. (2019). *Global health estimates: Life expectancy and leading causes of death and disability.* https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates

World Health Organization. (2022a, June 17). *Mental Health.* https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

World Health Organization. (2022b, June 8). *Mental Disorders.* https://www.who.int/news-room/fact-sheets/detail/mental-disorders#:~:text=In%202019%2C%201%20in%20every,of%20the%20COVID%2D19%20pandemic

Weismann, J., Pratt, L.A., Miller, E.A., and Parker, J. (2015). *Serious psychological stress among adults: United States, 2009-2013*. [Data brief] National Center for Health Statistics. https://www.cdc.gov/nchs/data/databriefs/db203.pdf

Wu, G., Feder, A., Cohen, H., Kim, J.J., Calderon, S., Charney, D.S., & Mathe, A.A. (2013). Understanding resilience. *Frontiers in Behavioral Neuroscience, 15,* 1-15. https://doi-org.ezproxy.mnsu.edu/10.3389/fnbeh.2013.00010

Appendix A: IRB Approval

March 13, 2023

Re: IRB Proposal [2016130-2] USLW Coping and Stress
Review Level: Exempt (Level I)

Congratulations! Your Institutional Review Board (IRB) Proposal has been approved as of March 13, 2023.

Please remember that research involving human subjects under the purview of the IRB should adhere to the most current COVID-19 guidelines available, as set by MSU, Mankato and the Minnesota Department of Health.

On behalf of the Minnesota State University, Mankato IRB, we wish you success with your study. Please remember that you must seek approval for any changes in your study, its design, funding source, consent process, or any part of the study that may affect participants in the study (https://research.mnsu.edu/institutional-review-board/proposals/process/proposal-revision/).

Should any of the participants in your study suffer a research-related injury or other harmful outcomes, you are required to report them immediately to the Associate Vice-President for Research and Dean of Extended Campus at 507-389-1242.

When you complete your data collection or should you discontinue your study, you must submit a Closure request. All documents related to this research must be stored for a minimum of three years following the date on your Closure request (https://research.mnsu.edu/institutional-review-board/proposals/process/proposal-closure/).

If the PI leaves the university before the end of the 3-year timeline, he/she is responsible for ensuring proper storage of consent forms (https://research.mnsu.edu/institutional-review-board/proposals/process/leaving-campus/). Please include your IRBNet ID number with any correspondence with the IRB.

Be well,

Julie Carlson, Ed.D.
Co-Chair of the IRB

Chelsea Mead, Ph.D.
Co-Chair of the IRB

Jason A. Kaufman, Ph.D., Ed.D.
Director of the IRB

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Minnesota State University, Mankato IRB's records.

Appendix B: Manager Initial Contact Script

Greetings,

I am a graduate student at Minnesota State University, Mankato and am conducting a survey regarding levels of stress, burnout, and associated coping among pre-professional elite athletes across the USLW soccer league. This research is being conducted by Katie Stapleton under the guidance of Dr. Joseph Visker in the Department of Allied Health Science at Minnesota State University, Mankato.

The survey will take approximately 15-20 minutes. The data collected will be anonymous, once submitted there is no way to adjust your responses.

The survey will remain open for 3 weeks, from March 13, 2023 to April 3, 2023. You will receive a reminder after 2 weeks to complete the survey if your athletes have not done so. Participation is voluntary, and your athletes can opt out of taking it at any time.

Please direct any questions about this study to Dr. Joe Visker at 507-389-2757 or joseph.visker@mnsu.edu.

IRBNet#2016130

In order to participate in the study, your athletes will need to be provided the attached document in its entirety. The link to the survey is provided in the document. Please forward to your athletes for consideration. Thank you.

Appendix C: Manager Follow Up Script

Greetings,

This is a follow-up regarding a survey I am conducting. For clarification, this is for your athletes from the 2022 season.

I am a graduate student at Minnesota State University, Mankato and am conducting a survey regarding levels of stress, burnout, and associated coping among pre-professional elite athletes across the USLW soccer league. This research is being conducted by Katie Stapleton under the guidance of Dr. Joseph Visker in the Department of Allied Health Science at Minnesota State University, Mankato.

The survey will take approximately 15-20 minutes. The data collected will be anonymous, once submitted there is no way to adjust your responses.

The survey will remain open for 1 more week, until April 3, 2023. Please remind your athletes if they have not yet responded and would like to, please complete the survey now. Participation is voluntary, and your athletes can opt out of taking it at any time.

Please direct any questions about this study to Dr. Joe Visker at 507-389-2757 or joseph.visker@mnsu.edu.

IRBNet#2016130

In order to participate in the study, your athletes will need to be provided the attached document in its entirety. The link to the survey is provided in the document. Please forward to your athletes for consideration. Thank you.

Appendix D: Participant Initial Contact Script

Greetings,

The purpose of this electronic survey is to research levels of stress, individual and team burnout behaviors, and associated coping among pre-professional female athletes across the USLW soccer league. This research is being conducted by Katie Stapleton under the guidance of Dr. Joe Visker in the Department of Allied Health Science at Minnesota State University, Mankato.

The survey will take approximately 15-20 minutes and should be taken in a place that can offer maximum privacy (out of view from others). Please make sure your internet connection is secure. The data collected will be anonymous, once submitted there is no way to adjust your responses.

The survey will remain open for 3 weeks, from March 13, 2023 to April 3, 2023. You will receive a reminder after 2 weeks to complete the survey if you have not done so. Participation is voluntary, and you can opt out of taking it at any time.

Please direct any questions about this study to Dr. Joe Visker at 507-389-2757 or joseph.visker@mnsu.edu.

IRBNet#2016130

Thank you for your consideration to participate in this questionnaire.

LINK TO SURVEY:

https://mnsu.co1.qualtrics.com/jfe/form/SV_4MhVzp3yf5tH4Y6

Appendix E: Participant Follow Up Script

Greetings,

The purpose of this electronic survey is to research levels of stress, individual and team burnout behaviors, and associated coping among pre-professional female athletes across the USLW soccer league. This research is being conducted by Katie Stapleton under the guidance of Dr. Joseph Visker in the Department of Allied Health Science at Minnesota State University, Mankato.

The survey will take approximately 15-20 minutes and should be taken in a place that can offer maximum privacy (out of view from others). Please make sure your internet connection is secure. The data collected will be anonymous, once submitted there is no way to adjust your responses.

The survey will remain open for 1 more week, until April 3, 2023. If you have not yet responded and would like to, please complete the survey at this time. Participation is voluntary, and you can opt out of taking it at any time.

Please direct any questions about this study to Dr. Joe Visker at 507-389-2757 or joseph.visker@mnsu.edu.

IRBNet#2016130

Thank you for your consideration to participate in this questionnaire.
If you have already taken this survey, please DO NOT take it again.

LINK TO SURVEY:
https://mnsu.co1.qualtrics.com/jfe/form/SV_4MhVzp3yf5tH4Y6