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An Exploration of the Relationship Between Burnout and Depression in Intercollegiate Athletes

Arianna Martignetti

Western Washington University, martiga@wwu.edu

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**An Exploration of the Relationship Between
Burnout and Depression in
Intercollegiate Athletes**

By
Arianna Martignetti

Accepted in Partial Completion
of the Requirements for the Degree
Master of Science

Kathleen L. Kitto, Dean of Graduate School

ADVISORY COMMITTEE

Chair, Dr. Jessyca Arthur-Cameselle

Dr. Linda Keeler

Dr. Gordon Chalmers

MASTER'S THESIS

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**An Exploration of the Relationship Between
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A Thesis
Presented to
The Faculty of Western Washington University

In Partial Completion
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Master of Science

By
Arianna Martignetti
May 2017

Abstract

Researchers in occupational settings have found similarities in the symptomatology of workplace burnout and depression (Bianchi, Schonfeld, & Laurent, 2015). However, sport psychology researchers have stated that sport burnout and depression are separate constructs (Cresswell & Eklund, 2006). The purpose of the current study was to investigate the relationship between burnout and depression to help determine if their symptoms are indeed distinct, or if they potentially overlap. An additional purpose was to assess gender differences. At present, there are no studies examining the relationship between burnout and depression in an intercollegiate athlete sample. Participants were 422 intercollegiate athletes from all divisions of the NCAA, NAIA and NJCAA. Athletes completed an anonymous online survey consisting of the Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001), the Zung Self-Rating Depression Scale (SDS; Zung, 1965), and two symptom checklists designed for this study. Results revealed a strong, statistically significant positive correlation ($r = .600$) between total burnout and depression scores. Moreover, each subscale of the ABQ was statistically significantly correlated to total depression scores. The correlation between burnout and depression was stronger in female athletes compared to male athletes; however, this difference was not statistically significant. Sixty-six percent of the sample reported having experienced what they defined as burnout from sport. Of this subsample, forty-seven percent reported that while “burned out,” they experienced five or more *Diagnostic and Statistical Manual (DSM-V*, American Psychiatric Association, 2013) symptoms of depression, with at least one being a depressed mood or loss of interest. The current study demonstrates there is a strong relationship between sport burnout and depression in intercollegiate athletes, indicating a possible overlap in symptoms. Thus, the findings suggest that the two constructs may be more similar than

previously understood. Further, an increased understanding of the relationship between burnout and depression in sport may assist with prevention or screening, as well as contribute to more substantial treatment for burned out athletes.

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Chapter I

The Problem and Its Scope

Introduction

The construct of “burnout” was investigated via workplace studies by Maslach (1976) and has more recently been applied to understanding athletes’ experiences in sport. Occupational burnout is comprised of three dimensions: depersonalization, emotional exhaustion and a reduced sense of self-accomplishment (Maslach, Schaufeli, & Leiter, 2001). Similarly, sport burnout consists of an athlete experiencing three key symptoms: sport devaluation, emotional/physical exhaustion and a sense of reduced accomplishment (Raedeke & Smith, 2001). Although researchers have found that collegiate athletes experience burnout (Cremades, University, & Wiggins, 2008; Holmberg & Sheridan, 2013; Lai & Wiggins, 2003), the definition of burnout is still considered problematic (Gustafsson, Lundkvist, Podlog, & Lundqvist, 2016).

Potential predictors of burnout have been found, which include a loss of motivation, overtraining, feelings of entrapment or chronic stress (Goodger, Gorley, Lavalley, & Hardwood, 2007; Raedeke, 1997; Smith, 1986). Unfortunately, according to some, once an athlete has become burned out, there are not any effective treatments that are supported (Raedeke, Smith, Kenttå, Arce, & De Francisco, 2014). Further, there is only one study to date that has included an exploration of treating burnout, stress and well-being in athletes (Dubuc-Charbonneau & Durand-Bush, 2015). Those who continue to participate in sport while experiencing burnout may experience as much stress as athletes who have discontinued playing, due to burning out (Gould, Udry, Tuffey, & Loehr, 1996a). In addition, athletes may continue experiencing consequences of burnout even if they leave their sport (Goodger, Wolfenden, & Lavalley, 2007).

Researchers have suggested that due to differences between occupation and sport, such as settings, personal relationships and responsibilities, burnout should be assessed within each respective domain (De Francisco, Arce, del Pilar Vilchez, & Vales, 2016). In an occupational setting, researchers have found burnout and depression to share common symptomatology (Bianchi, Schonfeld, & Laurent, 2014; Bianchi, Schonfeld, & Laurent, 2015; Bianchi & Schonfeld, 2016; Schonfeld & Bianchi, 2015). However, there is a dearth of research examining both burnout and depression together in a sport setting.

Researchers have found that depressive symptoms are prevalent amongst collegiate athletes (Armstrong & Oomen-Early, 2009; Donohue et al., 2004; Proctor & Boan-Lenzo, 2010; Simon & Docherty, 2014; Weigand, Cohen, & Merenstein, 2013; Wolanin, Hong, Marks, Panchoo, & Gross, 2016; Yang et al., 2007). Researchers have found that sport burnout includes symptoms like learned helplessness, low energy, and low motivation (Gould, Udry, Tuffey, & Loehr, 1996b), which are similar to symptoms of depression. According to the *Diagnostic and Statistical Manual V* (DSM-V), in a 12-month period, the prevalence of a major depressive disorder in the United States is 7% (American Psychiatric Association [APA], 2013). Those between the ages of 18 and 29 are three times more likely to experience a major depressive disorder in a 12-month period compared to those who are 60 years old and older (APA, 2013). Undergraduate student-athletes fall into this former age range. Therefore, in order to better understand the construct of burnout and the mental health of athletes, the main interest of the current research is to explore the relationship between burnout and depression in a sport setting.

Purpose of the Study

The purpose of this study was three-fold: 1) to examine the correlation between burnout and depression levels in current intercollegiate athletes, 2) to determine any gender differences in

burnout and depression relationships among intercollegiate athletes, and 3) to determine if burned out athletes report concurrently experiencing diagnostic symptoms of depression.

Null Hypotheses

There is no statistically significant correlation between burnout and depression in current intercollegiate athletes. There is no statistically significant difference in the relationship of burnout and depression levels in male compared to female intercollegiate athletes. Symptoms of burnout and depression are not concurrently being experienced, as reported by the participants.

Significance of the Study

Researchers have determined that occupational burnout shares similar symptomatology with depression (Bianchi et al., 2014; Bianchi et al., 2015; Bianchi & Schonfeld, 2016; Schonfeld & Bianchi, 2015). However, Cresswell & Eklund (2006) stated that sport burnout and depression are separate “constructs” (p. 218) after assessing the convergent and discriminant validity of the Maslach Burnout Inventory-General Survey (MBI-GS), the Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001) and the Depression Anxiety Stress Scale (DASS). However, one study is insufficient to deem burnout and depression to be separate from one another, particularly with a sample population limited to elite male rugby players. A study with a larger, multisport sample is needed to determine if they are separate or related constructs. The current study will recruit a large, diverse sample in effort to address this limitation.

Depression and burnout can negatively impact aspects of life such as academics, social relationships and overall satisfaction (Armstrong & Oomen-Early, 2009). The importance of mental health should be recognized and understood by athletes, coaches, athletic personnel and anyone involved in the lives of athletes (Armstrong & Oomen-Early, 2009). Researchers have assessed the correlation of burnout and depression in workplace settings (Bianchi et al., 2014;

Bianchi et al., 2015; Bianchi & Schonfeld, 2016; Schonfeld & Bianchi, 2015), but research on both burnout and depression are lacking in sport contexts. Researchers in sport have found burnout to be linked to mood disturbances, coping skills and levels of enjoyment or motivation (Eklund & DeFreese, 2015). If positive correlations and concurrent symptoms exist between burnout and depression in athletes, then treatments that are effective in reducing depression may be applicable for athletes experiencing a state or process of “burnout.”

Research that explores the possible connection between burnout and depression is necessary to potentially help with treatment, prevention and screening, or perhaps to determine if burnout is a serious mental health issue amongst the athletic population. The current study’s exploration of sport burnout and depressive symptoms in intercollegiate athletes, as well as gender differences, may help others better understand and improve the theoretical framework of burnout. The current findings may provide further support or will refute Cresswell and Eklund’s (2006) claim that burnout and depression are distinct constructs.

Limitations of the Study

This study was comprised of the following limitations:

1. Due to participants recalling past athletic experiences, recall bias may have occurred.
2. The study was a cross-sectional design and the researchers cannot determine a causal relationship between burnout and depression, nor account for the fluctuations in each across a sport season.
3. Participants were not asked what the duration was for experiencing their burnout. Given the intent to determine if burnout symptoms were similar to depressive symptoms, knowing the duration of the participants “burnout” is necessary as the DSM-V indicates

that for a person to be diagnosed with MDD, symptoms must be persistent for at least a two-week period.

4. Participants were either in pre-season for their sport, in-season or in their off-season, which resulted in a lack of standardization of timing.
5. The surveys were self-report measures, which has potential flaws such as underreporting or dishonesty. However, the anonymity may have helped reduce those possibilities.
6. Participants were current National Collegiate Athletic Association, National Association of Intercollegiate Athletics, and National Junior College Athletic Association athletes; some burned out athletes may have discontinued their sport prior to being able to participate in this study.
7. A volunteer bias may have occurred given that participation was voluntary.

Definition of Terms

Burnout (Occupational): A response to prolonged emotional and relational stressors in the workplace, defined by three dimensions: emotional exhaustion, depersonalization or cynicism, and a reduced sense of accomplishment or inefficacy (Maslach et al., 2001).

Burnout (Sport): A multi-faceted syndrome comprised of emotional/physical exhaustion, devaluation from sport and a sense of reduced accomplishment in sport (Raedeke & Smith, 2001).

Depression: Major depressive disorder is described as five or more symptoms persisting for a two-week period, consisting of either a depressed mood or a loss of interest/pleasure (anhedonia). Symptoms include: 1) a depressed mood, 2) diminished interest or pleasure in activities, 3) weight loss/gain, 4) fatigue, 5) loss of energy, 6) lack of sleep, 7) feelings

of worthlessness, 8) inability to think, or 9) recurrent thoughts of death or suicide (DSM-V; APA, 2013).

Overreaching: Short-term performance decrements that are a result of cumulated training and/or non-training stressors (Meeusen et al., 2013). Short-term performance decrements can occur for several days to several weeks before restoration (Armstrong & VanHeest, 2002; Kreher & Schwartz, 2012; Meeusen et al., 2013).

Overtraining syndrome: Overtraining syndrome (OTS) is considered to be a prolonged maladaptation experienced by an athlete, which can include biological, hormonal and neurochemical mechanisms due to accumulated stress (Gleeson, 1998; Meeusen et al., 2013); this stress can include various life stressors. OTS is considered to be sport-specific (Meeusen et al., 2013). There is a lack of conclusive diagnostic criteria for OTS (Angeli, Minetto, Dovio, & Paccotti, 2004; Meeusen et al., 2013). However, a decrement in performance in the absence of an organic disease is a definitive sign of OTS. A trigger for OTS is a disproportion between amount of training and rest/recovery (Meeusen et al., 2013). Overtraining syndrome is not a requisite for burnout (Raedeke et al., 2014).

Staleness: Staleness is the first sign of psychological difficulties when adapting to sport demands and is a consequence of overtraining (Kenttå, Hassmén, & Raglin, 2001; Morgan, Brown, Raglin, O'Connor, & Ellickson, 1987; Silva, 1990; Tobar, 2005). Staleness occurs when a decrement in performance persists for weeks, due to overtraining without proper recovery, as opposed to injury or illness (Gould & Dieffenbach, 2002). Psychosocial stressors can also contribute to staleness (Kenttå et al., 2001).

Chapter II

Review of the Literature

Introduction

Nearly five to seven million high school students participate in competitive sports annually, as well as over 400,000 National Collegiate Athletic Association (NCAA) student-athletes (Wolanin, Gross, & Hong, 2015; Wolanin et al., 2016). While participation in sport has many benefits, such as a source of enjoyment (Gustafsson, Kenttå, & Hassmén 2011), an increase in self-esteem or a distress buffer (Proctor & Boan-Lenzo, 2010), sport may also place high demands on an athlete and may negatively affect a person both physically and psychologically (Eklund & DeFreese, 2015; Wolanin et al., 2015; Wolanin et al., 2016). Burnout can affect an athlete's mental health and they may then experience mood disturbances, anxiety (Goodger et al., 2007), a loss of energy and motivation, learned helplessness, weight gain/loss, poor sleep or frustration (Gould et al., 1996a). It is of note that the aforementioned symptoms are similar to those of depression, yet research is lacking in regards to studying both burnout and depression within a collegiate athletic population.

The mental health of athletes may be as important as their physical health from sport, and athletes should be taken care of both psychologically and physically in order to address their overall well-being (Armstrong & Oomen-Early, 2009; Eklund & DeFreese, 2015; Wolanin et al., 2015). Exploring the relationship between athletes' burnout and depressive symptoms will potentially expand on the theoretical concept of burnout in order to monitor and manage the complex phenomena. In the following sections, theories on the causes of burnout in athletes and past literature on burnout, depression and other mental health issues in athletes will be discussed.

Definition of Burnout

The construct of “burnout” was investigated by Maslach (1976), who studied social services and healthcare professionals whose positions were demanding and intense given that they care for others; the relationship between the caregiver and the recipient appears to be at the core of healthcare occupations. Early researchers focused on burnout occurring from this interpersonal context, rather than burnout occurring from individual stress (Maslach, 1976). The interest in burnout quickly began to expand to other occupations such as the military, managers and teachers, and Maslach et al. (2001) developed its structure into broader terms. Rather than focusing on interpersonal relationships, burnout was considered more contextual and pertained to one’s occupation. Now, burnout is considered a psychological syndrome that results from chronic stressors or a “misfit between self and job” (Maslach et al., 2001, p.413). Some factors of the workplace that can cause chronic stress include: a demanding workload, feeling a lack of accomplishment, not being rewarded, losing social support or connections, as well as perceived unfairness and a conflict with one’s own values, such as being asked to act unethically (Maslach et al., 2001). According to Maslach et al. (2001), burnout has three dimensions: a reduced sense of self-accomplishment, depersonalization and emotional exhaustion. Each dimension can be respectively defined as feeling ineffective or incompetent, losing concern or feeling detached and cynical towards different facets of one’s job, and feeling overexerted or worn-out (Maslach, 1976; Maslach et al., 2001).

The term *burnout* was later applied to sport with slightly adapted symptoms that include a reduced sense of accomplishment, sport devaluation, and emotional and physical exhaustion (Raedeke & Smith, 2001). A sense of reduced accomplishment is defined as not feeling competent to perform anymore, which refers to an athlete’s own perceptions of personal skills or

abilities (Raedeke, 1997). For instance, a swimmer may no longer feel confident to race in the first swim heat, or a basketball player may no longer feel capable of taking free-throw shots. Another component of burnout, sport devaluation, was adapted from symptoms of “depersonalization” and is defined as an athlete experiencing a disconnect between themselves and the sport, as opposed to healthcare workers and their patients (Raedeke, 1997; Raedeke & Smith, 2001). Devaluation is described as athletes’ resentment or lack of care about their performance and/or the sport itself, which was once of importance (Raedeke & Smith, 2001). For example, a burned out baseball player who once kept track of his batting average or on-base percentage in order to monitor his improvements or successes, may feel detached and no longer care about keeping up with his statistics. Lastly, emotional and physical exhaustion may be caused from high demands from sport, intense training or competition (Raedeke, 1997; Raedeke & Smith, 2001). Although not all athletes who experience burnout will drop out of their sport, many will (Gould et al., 1996a).

Overtraining Syndrome, Staleness and Burnout in Athletes

Achieving peak performance through use of an increase in training stimulus or above optimal training volumes may only be beneficial if sufficient recovery and rest follow (Kenttå & Hassmén, 1998; Kreher & Schwartz, 2012; Meeusen et al., 2013; Morgan et al., 1987). The term “overreaching” is used when an athlete has an imbalance between training volume and recovery time, which results in short-term performance decrements (Armstrong & VanHeest, 2002). If an athlete does not adequately adapt to the training and/or has insufficient recovery, performance decrements can occur along with “prolonged maladaptation” (p. 3) and result in what is deemed overtraining syndrome (OTS) (Meeusen et al., 2013, p. 3). Performance decrements can persist for several weeks to several months with OTS (Kreher & Schwartz, 2012; Meeusen et al., 2013).

OTS, staleness and burnout are terms that have been used synonymously by researchers in past literature due to common features such as exhaustion. However, Silva (1990) theorized that the three are distinct syndromes that exist on a continuum, with burnout at the extreme end. OTS may be an antecedent of burnout, but is not a pre-requisite (Raedeke et al., 2014). OTS is defined as an excess of training with inadequate recovery time, which results in underperformance and chronic fatigue as a response to stress (Gleeson, 1998). Common characteristics between OTS and major depression have been found, such as fatigue, mood disturbances, possible adrenal dysfunction and a change in the balance of the autonomic nervous system; however, OTS is considered a physical phenomenon (Armstrong & VanHeest, 2002).

Overtraining can be thought of as a stimulus, with staleness and psychological symptoms being the consequence (Morgan et al., 1987; Tobar, 2005). Staleness includes psychological difficulties and occurs when a decrement in performance persists for weeks due to overtraining and under-recovery, as opposed to performance decreases due to injury or illness (Gould & Dieffenbach, 2002). The main factor predicting staleness is insufficient recovery, along with an initial failure for an individual to cope with the psychological stress from training, which is dependent upon an individual's capacity to cope or handles the stress (Kenttå & Hassmén, 1998; Morgan et al., 1987; Silva, 1990). It is of note that not all athletes who have over-trained will experience staleness (Tobar, 2005).

Morgan et al. (1987) suggested that moods should be monitored prior to overtraining in order to prevent staleness, performance decrements and mood disturbances that come along with it. To reach this conclusion, Morgan et al. (1987) studied 200 men and 200 women over 10 years from the University of Madison-Wisconsin who completed the Profile of Mood States (POMS) to monitor the training cycle of competitive swimmers. The greatest amount of mood

disturbances throughout the study occurred during late January, which followed the most intense swimming cycle. Prior to intense training loads, swimmers had positive mood states. Although individual differences occurred, overtraining resulted in mood disturbances and disturbances retreated to baseline following reduced training. From the results, mood disturbances may increase as training load increases and may, therefore, produce performance decrements (Morgan et al., 1987).

A distinguishable feature of burnout from overtraining and staleness is the result of a withdrawal (Smith, 1986). For example, Silva (1990) qualitatively examined athletes' perceptions of overtraining, staleness and burnout in a sample of 25 female athletes and 43 male athletes from 10 different collegiate sport teams (Silva, 1990). Participants answered open-ended questions regarding overtraining, staleness and burnout. Example questions were, "How did you know you were stale?" "List the symptoms that accompany the staleness," and "Is there any particular time of the season that you get stale?" (Silva, 1990, p.12). Silva found that 72% of the athletes experienced staleness, with 54.8% reporting that it was a tolerable part of training. Symptoms reported were a loss of enthusiasm, physical fatigue and poor performances. Burnout was reported by 46.9% of the athletes in Silva's study, and 81.3% indicated that it was the worst response an athlete could experience from training stress. Burnout was experienced 1.5 times, on average, throughout their involvement as collegiate athletes. The multiple occurrences of the athletes experiencing burnout illustrates that many will continue to compete while experiencing burnout, rather than dropping out. Participants indicated that symptoms included a loss of interest, intense exhaustion and a decrease in caring. Lastly, the primary symptom identified by the athletes who experienced burnout was withdrawal. The descriptive data from Silva's study provided a first-hand account of the athletes' experiences. From the results, Silva (1990)

suggested that overtraining, staleness and burnout all share physical and mental components, with burnout being perceived as the worst response for an athlete to experience from training.

Researchers have suggested that perhaps stale athletes reach the state of burnout because their high motivation fuels their continuance in training, and athletes may become burned out once they lose their motivation (Kenttå et al., 2001). This claim emerged from Kenttå et al.'s (2001) study that examined 272 elite Swedish high school athletes (108 women and 164 men) from a variety of team and individual sports, and assessed the frequency and nature of their staleness. The researchers found the prevalence of staleness to be 37%, which differed between team sports (30%) and individual sports (48%). Out of the athletes who reported themselves as being stale, 41% experienced a loss of motivation. Athletes reporting motivation while remaining in a stale state suggests that the two can occur at the same time, whereas motivation and burnout cannot. In addition, athletes in less physically demanding sports, such as sailing and golf, experienced a lower rate of staleness, with an average of 18%. It is important to note that staleness developed even with a moderate level of physical intensity, suggesting psychosocial stressors also play a role in staleness. The researchers also found mood disturbances to increase as training intensity increased, and mood disturbances were statistically significantly higher for stale athletes (Kenttå et al., 2001).

Overall, based on past research, it appears that if an athlete is over-trained or stale, motivation for training tends to remain, as opposed to a burned out athlete who will experience a loss of motivation, devaluation, contempt or possibly withdraw (Kenttå et al., 2001; Kenttå & Hassmén, 1998; Lemyre, Roberts, and Stray-Gunderson, 2007; Raglin, 1993). To better understand the reason that burnout occurs in athletes, the following section includes a review of theoretical understandings and explanations for burnout in sport.

Theories and Explanations of Burnout in Sport

Theories on causes of burnout include Smith's (1986) cognitive affective model of stress, Coakley's (1992) unidimensional model and Raedeke's (1997) theory of entrapment. Ryan and Deci's (2000) self-determination theory (SDT) can also be applied to explain burnout. The core features of each theory will be discussed throughout this section.

According to Smith (1986), who first theorized about the causes of burnout in sport, the process of burnout can be depicted as a four-part cycle, that is based on general cognitive models. The first stage of the cycle initiates with a situation that is demanding. The second stage is an athlete's cognitive appraisal of that demanding situation. For athletes who experience burnout, they perceive the situation as threatening due to a sense of overload, lack of accomplishments or feelings of helplessness. From this perception of threat comes the third stage, physiological responses of tension, anxiety, fatigue or depression. The fourth and final stage is an athlete's behavioral responses, which may include a performance decrement, or possible psychological and physical withdrawal, such as burnout (Smith, 1986). According to Smith's (1986) model, because it is an athlete's individual interpretation of a situation as threatening, not all athletes will burn out when faced with the same demands or stressors.

The unidimensional identity model theorizes burnout to be more than chronic stress (Coakley, 1992). Coakley (1992) stated that burnout was not a personal failure, but rather a broader social issue. Athletes' sense of autonomy may be compromised if they experience a lack of control over their sport decisions due to their parents or coaches making decisions for them, specifically for youth athletes. Coakley concluded that the athletes' stress from discontinuing their sport was not a cause, but rather a symptom of burnout. Coakley also suggested that burnout is due to athletes' social identities being formed by the sport that they play. For example,

a collegiate baseball player who began his career at a young age may have sacrificed his summer seasons and weekends in order to practice or compete in his sport. The commitment continues through middle school, high school and then college, with his primary social group potentially only being his teammates. He may not have an identity or other interests outside of sport, which can be dangerous if he stops playing well, if team or coach dynamics negatively change, if he has a career-ending injury or if he must stop playing after college.

According to Coakley (1992), the commitment to sport at an early age narrows focus, creating this unidimensional identity for an athlete. An athlete may be unable to develop autonomous or independent identities compared to non-competitive sport adolescents. For instance, as found in Kenttå et al.'s (2001) study of Swedish athletes, more than 40% of the participants did not have other hobbies or other interests other than their sport. Kenttå et al. (2001) suggested that the commitment to sport without alternative hobbies or interests may be a contributor to physical or emotional exhaustion. Further, the athlete's burnout process may be connected to his personal social development and the overall social organization of sport due to its competitive nature (Coakley, 1992). While some athletes will enjoy the previously mentioned lifestyle of the baseball player, others may interpret these sport constraints as problematic, leaving them unable to explore alternative opportunities or identities, which may result in burnout. According to Coakley (1992), burnout prevention strategies include the proper structuring or organization of sport programs to include more autonomy for athletes, stress management training or expanding life experiences outside of sport (specifically for youth athletes).

Another theory, from a commitment perspective, according to Raedeke (1997) suggests that athletes may have higher levels of burnout if they experience malcontent and obligation, in

comparison to those who do not. Athletes may feel entrapped and feel as though they must maintain their participation in sport rather than that they want to, leading to burnout (Raedeke, 1997). For example, a collegiate lacrosse player in her junior year may be struggling to maintain her academics and a social life, but would not consider quitting her sport. After dedicating the majority of her life and perhaps substantial financial resources into playing lacrosse, she may feel obligated to play for her last year as a senior. Otherwise, she may perceive her previous years of playing as a waste of time. In reference to Raedeke's (1997) theory, the lacrosse player no longer has a desire to play, rather, she perceives it as an obligation, causing malcontent and feelings of entrapment.

An alternative and less sport-specific theory to explain burnout in athletes is the self-determination theory (SDT; Ryan & Deci, 2000), which explains volitional behavior including sport participation. According to SDT, in order for athletes to feel motivated, they must meet their basic psychological human needs of autonomy, competence and relatedness. These three needs are considered to be innate and the basis for well-being. Autonomy is having a sense of control, competence is one's sense of ability to successfully perform and relatedness is a social connection or feeling of belonging (Ryan & Deci, 2000). Within SDT, motivation can be explained as a continuum from intrinsic, to extrinsic, to amotivation (Ryan & Deci, 2000). Intrinsic motivation means performing an activity or behavior for internal enjoyment. Extrinsic motivation can include performing an activity for approval of others, to gain rewards or to achieve personal goals. Extrinsic motivation has both controlled and autonomous regulatory styles. Controlled regulatory styles include external and introjected regulation, which consist of performing an activity for approval from others or to gain rewards. Autonomous regulatory styles include identified and integrated regulation and can consist of working toward personal

goals or doing an activity because it is consistent with one's own values. The autonomous regulatory styles are considered as more sustainable motivation. The full review of the differentiated types of motivation can be found in Ryan and Deci (2000). Lastly, amotivation consists of having no motivation or intent to perform an activity or behavior (Ryan & Deci, 2000). Athletes meeting the three needs of autonomy, competence and relatedness have more self-determined motivation and, thus, they may be at lower of a risk of burnout (DeFreese, Raedeke, & Smith, 2014). Conversely, athletes with lower self-determined motivation, or those who do not meet all three needs, may be at a greater risk for burnout (Gould et al., 1996a; Holmberg & Sheridan, 2013) and may experience lower levels of intrinsic motivation.

From a motivational standpoint, motivation and burnout appear to be negatively correlated (Holmberg & Sheridan, 2013; Kenttå et al., 2001; Lemyre et al., 2007; Lonsdale, Hodge, & Rose, 2009). For example, Goodger et al. (2007) investigated correlates of burnout in the sport literature by analyzing 58 published studies, with 27 pertaining to athletes, 23 on coaches, and the remainder on athletic directors, trainers and officials. Of the 27 studies on athletes, Goodger et al. (2007) identified 41 psychological factors related to burnout, with three groups of correlates (psychological, demographic and situational), and five themes (motivation, training/recovery responses, roles of significant others, identity and coping with adversity). The aforementioned themes were consistently found to be associated with burnout in all studies. Regarding motivation and burnout, amotivation was positively associated, intrinsic motivation was negatively related and athletes reporting greater autonomy experienced lower burnout (Goodger et al., 2007). Burnout was positively associated with stress and mood disturbances, and negatively associated with coping. There was also a negative association between social support and the burnout dimensions of exhaustion and a reduced sense of accomplishment. Overall, from

the findings of Goodger et al. (2007), one theory by itself may be incomplete in explaining burnout; burnout appears to be a complex construct.

To incorporate the ideas of each of the previously mentioned theories into a broader model, Gustafsson et al. (2011) created a new model to explain both the state and process of burnout or burning out (the model can be found in Gustafsson, Kenttå, & Hassmén, 2011). The model includes antecedents, entrapment characteristics, personality and coping, as well as the environment and its influence on early signs and burnout. Maladaptive consequences of burnout are also included. Examples of possible antecedents are excessive training, demands from school/work, social stress or lack of recovery. Some early signs of burnout are mood disturbances, lack of control, performance decrements, lessened motivation or elevated stress. Entrapment characteristics are similar to Coakley's (1992) unidimensional identity, social constraints or high investments. Personality factors leading to burnout can include perfectionism or trait anxiety. Low social support or low autonomy are also included as influential factors of burnout. The maladaptive consequences are withdrawal, chronic inflammation or long-term performance decrements. The authors concluded that future research could be guided by this new model that incorporates, "what we know and what we need to know" (Gustafsson et al., 2011, p. 10).

It appears that athletes who are burned out experience motivational loss, poor coping skills, high perceived stress/anxiety and mood disturbances (Goodger et al., 2007). Theoretical explanations suggest that burnout for athletes may occur due to feeling entrapped (Raedeke, 1997), a problematic unidimensional athletic self-identity (Coakley, 1992), a loss of self-determined motivation (DeFreese et al., 2014), an overall result from chronic stress (Smith, 1986), or a combination of several of these factors (Gustafsson et al., 2011).

Research on entrapment, stress and burnout in athletes. Identifying athletes who are burned out is difficult, especially since many may have discontinued participating in their sport (Gould et al., 1996a). However, in a study conducted by Gould et al. (1996a), sectional tennis directors were informed of Smith's (1986) chronic-stress model and asked to identify burned out junior tennis players, as well as non-burned out junior tennis players of comparable age, sex and playing experience at a national tennis tournament. In their quantitative study, Gould et al. (1996a) used the term "lost motivation in tennis" (p. 328) as opposed to burnout for all interactions with participants. The authors' reason for the change in terms was because burnout had a negative implication amongst the tennis population. The participants were 30 burned out junior tennis players, and 32 non-burned out junior tennis players. The researchers found that not all burned out players discontinued sport, but decreased their involvement and were described as *active burnouts*. *Active burnouts* were athletes who played less often, at a less competitive level, reduced their effort or made excuses to not play. *Active burnouts* experienced as much stress as players who completely discontinued playing. Burned out players had lower external motivation, reported higher amotivation and were more withdrawn psychologically than those who were not burned out. From the findings, the researchers indicated that athletes can indeed burnout and continue to play while being withdrawn emotionally or motivationally, or they can discontinue altogether (Gould et al., 1996a).

In a follow-up study, Gould et al. (1996b) interviewed 10 elite junior tennis players who reported the highest burnout levels (seven discontinued playing, but three began playing again). The main purpose was to identify variables contributing to burnout, from an athlete's perspective. The percentage of raw-data themes characterizing causes of burnout as reported by the participants were physical concerns (12%), logistical concerns (13%), social/interpersonal

concerns (24%) and psychological concerns (51%). The most frequently reported themes to describe burnout symptoms were a lack of motivation, frustration, irritability and being moody, lacking physical energy, injuries or illness, and feeling isolated or having problems concentrating. The researchers stated that they were unable to reach a definitive conclusion as to what caused the tennis players to burnout, yet it appeared to include an influence of both personal and situational aspects, with all 10 participants referencing psychological factors as a contributor (Gould et al., 1996b). Rather than managing burnout as a personality weakness, the results indicated that perhaps burnout should be dealt with as an interaction between player characteristics and demands of the sport (Gould et al., 1996a).

A commitment perspective on burnout has led researchers to theorize that athletes may remain in their sport while being burned out due to entrapment reasons, as opposed to merely chronic stress (Raedeke, 1997). For example, Raedeke (1997) conducted a study on 236 swimmers who spent nearly 14 hours per week training, for 10.6 months of the year. Participants completed burnout measures, as well as surveys based on enjoyment, benefits and costs, personal investment, attractiveness, social constraints, perceived control and swim identity. Cluster analysis revealed four patterns of characteristics from participants' scores, which were malcontented ($n = 26$), enthusiastic ($n = 104$), obligated ($n = 40$) or indifferent ($n = 66$) towards their sport. The malcontented swimmers scored the highest on burnout. Obligated swimmers scored moderate to high on burnout, with their highest scores on the emotional/physical exhaustion subscale. Obligated and malcontented swimmers showed characteristics of entrapment such as swimming to please others, feeling pressured by teammates, perceived low control, low benefits and had weak swim identities. Therefore, athletes exhibiting psychological characteristics that reflect sport entrapment, such as the obligated and malcontented groups, may

experience higher levels of burnout compared to those in the enthusiastic and indifferent groups. Further, the obligated group may develop characteristics of the malcontented group in the future, thus leading to burnout (Raedeke, 1997).

In a similar study on swimmers, Raedeke and Smith (2004) found stress to be positively, statistically significantly related to all three dimensions of burnout. Athletes who reported greater stress felt more exhaustion, did not value swimming as much, felt less accomplished, and had lower coping skills and social support compared to athletes who reported lower stress. The association between high levels of burnout and high stress demonstrates the heavy demands athletes may experience from sport, and supports Smith's (1986) cognitive-affective model of stress (Raedeke & Smith, 2004).

Athletes may experience different demands throughout an entire sport season, influencing and altering the amount of stress and burnout occurring (Cresswell & Eklund, 2006b; Lai & Wiggins, 2003). For example, Lai and Wiggins (2003) explored the fluctuation of burnout throughout a sport season among 73 Division I soccer players from three different universities. The athletes were given the Burnout Inventory for Athletes (BIA) five times throughout the season. As hypothesized, the researchers found that overall, burnout statistically significantly increased over time, suggesting that as stress increases or energy decreases across a season, burnout can occur. However, the overall burnout scores were not considered as high at any point during the season. Nonetheless, burnout levels should be monitored for athletes across a season (Lai & Wiggins, 2003). Conversely, Cresswell and Eklund (2006b) did not find a linear increase in burnout across a rugby season, but found variations in each dimension of burnout that was dependent upon several variables. Participants were 109 rugby players who completed the ABQ three times during the season (i.e., pre-season, in-season, and end-of-season), over a 30-week

period. Only a sense of reduced accomplishment statistically significantly, negatively changed from the pre-competitive year to during the competitive year. For emotional/physical exhaustion and devaluation, there were positive, statistically significant relationships between playing position, time, injury and experience. Overall, those who stated experiencing more injuries also reported more emotional and physical exhaustion, reduced accomplishment and devaluation from rugby. Taken together, results suggest that the symptoms of burnout may fluctuate over an entire sport season, or with setbacks such as injury, which supports Smith's (1986) cognitive-affective model of stress by illustrating how the increasing demands of a season can lead to overload or burnout (Cresswell & Eklund, 2006b; Lai & Wiggins, 2003).

Athletes with high levels of stress are at risk for experiencing burnout (Raedeke & Smith, 2004; Smith, 1986) as are athletes who exhibit feelings of obligation or malcontent (Raedeke, 1997). With the differentiated demands throughout a sport season, levels of burnout can fluctuate and it may be important to monitor athletes' levels throughout a season (Cresswell & Eklund, 2006b; Lai & Wiggins, 2003). It is important for athletic personnel to be able to identify burnout in order to monitor, work with or possibly refer athletes to appropriate counselors or clinicians (Gould & Whitley, 2009). Knowing the psychological and motivational correlates of burnout (Goodger et al., 2007), mental well-being and stress management may be as important as the physical aspects of sport in preventing burnout.

Burnout, motivation and the self-determination theory. A loss of motivation may also be linked to the process of burnout; therefore, self-determined motivation has been studied as a predictor of overtraining and burnout. For example, Lemyre et al. (2007) conducted a study with 81 male and 60 female elite Winter athletes (junior elite athletes and Olympians). Participants completed a motivation scale, an overtraining questionnaire and the ABQ at the beginning of

their season and at the end. The researchers found a negatively moderate, but not statistically significant, correlation between burnout and self-determined motivation for the junior athletes, suggesting that low motivation at the beginning of a season may contribute to burnout at the end. The findings between self-determined motivation and burnout can support the assumption that an athlete can be over-trained and still have motivation; whereas, motivation can deteriorate if the athlete is burned out (Lemyre et al., 2007).

Researchers have further examined self-determined motivation as a potential antecedent of burnout in a sample of 121 female and 80 male elite Canadian athletes (Lonsdale et al., 2009). Participants completed the Behavioral Regulation in Sport Questionnaire (BRSQ), the ABQ and a 10-item survey assessing athlete perceptions of the three needs according to the self-determination theory. The researchers found a positive relationship between controlled motivation styles and all three symptoms of burnout, whereas autonomous styles were negatively related to burnout. In addition, sport devaluation was predicted by autonomy and was the most strongly linked to self-determined motivation, suggesting that devaluation may be the most cognitive dimension of burnout compared to exhaustion or reduced accomplishment. Lastly, exhaustion was predicted by each of the three needs, but only autonomy and competence were predictive of reduced accomplishment and burnout overall. Lonsdale et al. (2009) indicated that each of the three symptoms of burnout may potentially have different antecedents. Holmberg and Sheridan (2013) also investigated collegiate athletes' self-determined motivation and the dimensions of burnout using the same surveys. The researchers found a negative correlation between intrinsic motivation and burnout, and a positive correlation between amotivation and burnout. Furthermore, burnout was positively correlated to the controlled regulatory styles and negatively correlated to the autonomous regulatory styles; external regulation and amotivation

showed a very strong positive relationship to devaluation. Therefore, the researchers suggested that athletes with autonomous regulatory styles may be less likely to experience high burnout scores compared to athletes demonstrating controlled regulatory styles (Holmberg & Sheridan, 2013).

Unfortunately, there are no agreed cut-off scores for high versus low burnout on the ABQ, which creates difficulty in determining a definitive diagnosis of burnout (Hodge, Lonsdale, & Ng, 2007). Hodge et al. (2007) used criteria from past research to create cut-off scores of athlete burnout on the ABQ for their participants, dividing them into low and high burnout groups. Athletes in the high burnout group reported statistically significantly lower scores on fulfillment of autonomy and competence. Surprisingly, the burnout subscale of exhaustion was not related to the basic psychological needs. The researchers suggested that the three needs and burnout have a strong, negative relationship, and stated that burnout cutoff values must be determined for the ABQ (Hodge et al., 2007).

Overall, the studies indicate that individuals participating in sport due to enjoyment or valued outcomes, such as intrinsic motivation and meeting the three psychological needs according to SDT, may be less likely to report burnout symptoms (Hodge et al., 2007; Holmberg & Sheridan, 2013; Lemyre et al., 2007; Lonsdale et al., 2009). Further, those experiencing low levels of need fulfillment for competence and autonomy are at greater risk for burnout (Hodge et al., 2007; Lonsdale et al., 2009). Sport environments that satisfy the three needs (autonomy, relatedness and competence) promote more self-determined athletes, potentially preventing burnout (Lonsdale et al., 2009). Given that many athletes who experience burnout will continue to participate in sport (Gould et al., 1996a), monitoring or managing levels of autonomous motivation or need fulfillment can be strategies to moderate or prevent burnout.

Demographic variables and burnout in athletes. Research findings on burnout rates and sport type have been inconsistent. Further, there has been minimal research examining the prevalence of burnout in male and female athletes. Lai and Wiggins (2003) explored burnout differences in 34 male and 39 female Division I soccer players. The athletes were given the BIA five times throughout the season, which included preseason and post-season. Men scored higher on the BIA ($M = 17.62$) compared to women ($M = 14.92$) during all five times, but the differences were not statistically significant. Conversely, a study conducted by Cremades et al. (2008) on Division I and Division II athletes found that women ($n = 74$) scored statistically significantly higher than men ($n = 56$) on the physical/emotional exhaustion and devaluation subscales of the ABQ. Female athletes of individual sports also reported greater levels of reduced accomplishment compared to female athletes of team sports. Similarly, individual sport athletes (both women and men) reported greater levels of a sense of reduced accomplishment than athletes of team sports. Cremades et al. (2008) suggested that social support may be a buffer against team sport athletes experiencing burnout, and that female athletes may be at more of a risk for burnout than male athletes.

Similar results for female athletes were found in a study utilizing the Eades Athletic Burnout Inventory (EABI) with a sample of high school athletes (Gustafsson, Kenttå, Hassmén, & Lundqvist, 2007). Women of individual sports ($n = 293$) reported higher frequencies on all three components of burnout compared to women of team sports ($n = 109$). By contrast, men of team sports ($n = 206$) reported statistically significantly higher burnout scores (small effect size) compared to those of individual sports ($n = 372$) for physical/emotional exhaustion. Although cut-off scores of the EABI are not established nor adequate for diagnosis, Gustafsson et al. (2007) adopted a previous method that was used by a past researcher to determine low, moderate

and high frequencies of burnout. Gustafsson et al. (2007) found that the prevalence of burnout was 11% for individual athletes, and 4.6% for team sport athletes. In addition, the prevalence of high burnout was between 2% and 6% for men, 1% and 9% for women, with 1% to 2% of the sample experiencing severe burnout. There was no link between the burnout scores and training load in either women or men, suggesting that training/overtraining may be independent from burnout (Gustafsson et al., 2007), and further supported the notion that overtraining may not be a requisite for burnout (Raedeke et al., 2014).

Overall, it appears that female athletes of individual sports experience more burnout, specifically a greater sense of reduced accomplishment (Cremades et al., 2008; Gustafsson et al., 2007), yet male athletes of team sports have higher burnout scores than individual sport athletes (Cremades et al., 2008; Gustafsson et al., 2007; Lai & Wiggins, 2003). Limitations of two of the three prior studies are the use of the BIA (Lai & Wiggins, 2003) and EABI (Gustafsson et al., 2007) as measures of burnout. The ABQ has high discriminant validity and reliability in regards to the three dimensions of sport burnout and has also been found to be a more valid measure of burnout in athletes (Cresswell & Eklund, 2006). Due to the use of different burnout assessments in the prior studies, there is a need for future research on gender and sport type differences in burnout with use of the ABQ.

Depression and Other Mental Health Issues in Sport

Some may assume that only athletes who are emotionally and mentally tough are capable of competing at elite levels and being successful (Hammond, Gialloredo, Kubas, & Davis, 2013; Junge & Feddermann-Demont, 2015; Markser, 2011). Although it appears that athletic participation may influence mental health in a positive way (Donohue et al., 2004), athletes are not “immune or resistant to depression” (Wolanin et al., 2015, p. 59). Therefore, the following

sections will include a discussion of the research on depression prevalence in current and former athletes, the influence of specific sport factors on depression and gender differences.

Depression prevalence in current and former athletes. Although exercise or sport participation has its benefits, there can also be high psychological, physical and social costs (Kerr, DeFreese, & Marshall, 2014; Simon & Docherty, 2014). For example, Simon and Docherty (2014) compared 232 former Division I athletes' and 225 former college student non-athletes' responses on a health related quality of life scale and the Patient-Reported Outcomes Measurement Information System (PROMIS). The PROMIS measures depression, anxiety, fatigue, interference of pain, disturbance in sleep, physical functioning and social role satisfaction. Former athletes scored statistically significantly worse on five of the seven PROMIS scales (e.g., depression, physical function, sleep disturbance, fatigue, and pain interference) compared to non-athletes, and reported more chronic injuries and more limitations on daily activities compared to the general population. Therefore, researchers concluded that athletes have a lower quality of life post-college than their non-athlete peers (Simon & Docherty, 2014). However, contradicting results were found in a study examining the influence of sport participation on athletes' long-term health and overall well-being (Kerr et al., 2014). Participants were 787 male and female former collegiate athletes of a Division I university who completed questionnaires on physical and mental health. Results from athletes' physical and mental health composite scores were compared to the means of physical and mental composite scores of United States normative data. Former athletes had healthier, yet similar mean mental and physical health scores, than those of the general population. Researchers also found that former athletes who did not experience a career-ending injury or several concussions may have higher levels of physical health than former athletes who experienced career-ending injuries or

concussions. Although former athletes may have similar mental and physical health scores compared to normative data, specific sport experiences such as injuries or concussions may negatively influence an athlete's long-term mental and physical health (Kerr et al., 2014).

When comparing current athletes to the general population, Junge and Feddermann-Demont (2015) found a similar prevalence in depression, yet a lower prevalence of anxiety in football players. Participants were male and female elite level Swiss soccer players and the prevalence of depression was 9% in men and 13% in women. The researchers suggested that athletes may be at the same risk for developing depression as the general population (Junge & Feddermann-Demont, 2015). As for comparing current athletes to former athletes, Weigand et al. (2013) found mean depression scores to be statistically significantly higher in current intercollegiate student-athletes ($n = 134$, 83.2%) compared to recently graduate athletes ($n = 103$, 92%). Participants were current and former Division I student-athletes who completed the Wakefield Depression Scale. Although there is not a clinical cutoff level, individuals who scored a 15 or greater were considered depressed. For those who scored ≥ 15 , current student-athletes ($n = 27$, 16.8%) had significantly greater scores than the former student-athletes ($n = 9$, 8.0%). Surprisingly, there were no statistically significant differences in depression scores based on gender. From the findings, the researchers suggested that current collegiate student-athletes may be experiencing overtraining, pressure to perform, or injury, in addition to stress related to their schoolwork; whereas, former athletes may no longer experience the stressors or demands from school and sport (Weigand et al., 2013).

Current intercollegiate athletes were also compared to recreational athletes and a general college sample of non-athletes in a study which assessed for psychiatric symptoms (Donohue et al., 2004). Participants answered a 90-item questionnaire assessing bodily dysfunction, obsessive

compulsive thoughts or actions, depression, anxiety, hostility, paranoia, phobias and interpersonal feelings. The researchers found similar psychiatric functioning scores for the NCAA athletes ($n = 72$) and the recreational students ($n = 64$), as well as both men and women. The researchers then compared both the NCAA and recreational athletes to a general college sample of non-athletes. In that overall comparison, the athletes reported less psychiatric symptom severity. However, women reported greater psychiatric symptom severity compared to men. From the findings, athletic participation may not necessarily increase general psychological disturbance risk and may influence mental health in a positive way (Donohue et al., 2004).

In line with previous findings, when comparing athletes versus non-athletes, Proctor and Boan-Lenzo (2010) found 15.6% of Division I athletes reported depression compared to 29.4% of non-athletes based off the Center for Epidemiological Studies Depression Scale (CES-D). Participants were all men from two university baseball teams and reported that the mean hours per week they dedicated to sport during their competitive season was 20.7, with a range of 4-40 hours. Dedicating nearly 40 hours per week to training for sport is similar to committing to a full-time job, yet student-athletes have additional demands of being a full-time student. The demanding hours of sport may lead to fewer days of rest (Proctor & Boan-Lenzo, 2010). Fewer days of rest or lack of sleep has been shown to be a predictor of depression (Armstrong & Oomen-Early, 2009). For example, researchers compared a sample of collegiate athletes ($n = 104$) to non-athletes ($n = 123$) and assessed for depression, self-esteem and social connectedness using survey measures (Armstrong & Oomen-Early, 2009). Female college students (including both athletes and non-athletes) had statistically significantly higher levels of depression compared to male college students. Athletes, overall, reported statistically significantly lower depressive symptoms, as well as statistically significantly greater levels of social connectedness

and self-esteem compared to non-athletes. Lastly, 33.5% of the overall population reported clinical statistically significant levels of depression. Predictors of depression consisted of low self-esteem, social connectedness and fewer days of rest (Armstrong & Oomen-Early, 2009).

Overall, it appears that more studies are warranted to determine which population is more at risk for depression and other mental health related issues. Although collegiate athletes, compared to non-athletes, had lower levels of depression in the prior population samples (Armstrong & Oomen-Early, 2009; Donohue et al., 2004; Proctor & Boan-Lenzo, 2010), depressive symptoms were evident in athletes, nonetheless, across all studies. Social factors, gender and sleep were shown to be predictors of depression, and women seem to report higher depressive symptoms than men (Armstrong & Oomen-Early, 2009; Donohue et al., 2004; Junge & Feddermann-Demont, 2015; Yang et al., 2007). Junge and Feddermann-Demont (2015) suggested that both mental health issues in general and depression for athletes are neglected and inadequately treated.

Sport specific factors in relation to depression. Though research has shown athletes to be at similar risk for mental health issues as the general population (Kerr et al., 2014), there may also be sport-specific factors that can lead to depression such as overtraining, injuries, concussions or excessive stress (Nixdorf, Frank, & Beckmann, 2016). Researchers suggested that an athlete's life can be perceived as 'stressful' given that acute stress (i.e., a critical competition or possible injury) and chronic stress (i.e., frequent competitions and constant training) are common occurrences (Nixdorf, Frank, Hautzinger, & Beckmann, 2013). Nixdorf et al. (2013) explored potential correlates with depression such as chronic stress, coping strategies, exhaustion and recovery amongst a 162 elite German athletes. The athletes were divided into professionals, junior professionals and amateurs based on their demographic responses. Major depression

prevalence rates among the professionals, junior professionals and amateurs were 15%, 20%, and 29% respectively. Further analyses only included professional and junior professional athletes. The researchers found higher levels of chronic stress to be associated with higher levels of depressive symptoms for both groups of athletes. There was also a positive, statistically significant correlation between both general and sport-specific stress and depressive symptoms. Recovery, both general and sport-specific, were negatively, statistically significantly correlated with depressive symptoms. In addition, prevalence rates of depression for the German population is between 6% and 17%, which placed the athletes' prevalence rates as similar or higher than the general population. The researchers suggested that elite athletes are as affected by depressive symptoms as the general population is. Lastly, Nixdorf et al. (2013) found that there were more depressive symptoms reported among athletes of individual sports.

Researchers found results in line with previous findings when comparing German elite athletes of individual and team sports, ages 13 to 16 years old (Nixdorf et al., 2016). Individual sport athletes reported statistically significantly higher depressive symptoms compared to athletes from team sports. Further, athletes in individual sports had higher scores for negative attribution following failure, which is a sport-specific factor. Depression scores were in a non-clinical range, on average, yet the presence of depression may suggest that there are potential “underlying mechanisms” (Nixdorf et al., 2016, p. 5) for the development of depression. which are “sport inherent from an early stage” (Nixdorf et al., 2016, p. 5). The researchers also found that team cohesion and depression were negatively correlated (Nixdorf et al., 2016). As aforementioned, Armstrong and Oomen-Early (2009) also found low social support to be correlated with higher depressive scores in athletes. It is important to note that team cohesion and social support are relevant to relatedness, one of the three innate needs identified in SDT (Ryan

& Deci, 2000). Further, it is also noteworthy that the finding that athletes of individual sports have statistically significantly higher depressive symptoms (Nixdorf et al., 2016), mirrors previous findings that athletes of individual sports have higher levels of burnout compared to team sport athletes (Cremades et al., 2008; Gustafsson et al., 2007). The eminently similar findings regarding high risk groups for both burnout and depression suggest that perhaps the two constructs are more alike than previously understood.

Gender differences of depression in current athletes. A consistent finding across past studies is that women report more depressive symptoms than men (Armstrong & Oomen-Early, 2009; Donohue et al., 2004; Junge & Feddermann-Demont, 2015; Wolanin et al., 2016; Yang et al., 2007). Yang et al. (2007) found that 21% of their participant population of Division I student-athletes scored a 16 or higher on the CES-D, which indicated a clinical level of depressive symptoms. Freshman student-athletes reported the highest frequency of depression symptoms. Yang et al. (2007) also found depression and anxiety scores to be highly correlated for both men ($n = 167$) and women ($n = 90$) in the study. In addition, female student-athletes experienced statistically significantly higher depressive symptoms compared to male student-athletes (Yang et al., 2007). Wolanin et al. (2016) found similar results in a cross-sectional study over a three-year period of 465 Division I college athletes. Participants completed the CES-D and researchers found that 23.7% of the sample scored at least a 16, indicating depressive symptoms that were clinically relevant. The prevalence of moderate to severe depressive symptoms was 6.3%. In addition, female student-athletes had statistically significantly higher CES-D scores than males. Regarding prevalence based on sport type, researchers found that track and field athletes, overall, had statistically significantly higher CES-D scores than any other sport. Conversely, men's lacrosse had statistically significantly lower depressive scores

than other gendered sports. The difference in depressive symptoms among the aforementioned sports may be attributable to social support factors between team and individual sport, injuries or other team characteristics. Taken together, the results help to discredit the assumption that athletes are unlikely to experience depression (Yang et al., 2007; Wolanin et al., 2016).

Researchers have consistently found that depression was reported to be higher for female athletes compared to male athletes (Armstrong & Oomen-Early, 2009; Donohue et al., 2004; Junge & Feddermann-Demont, 2016; Yang et al., 2007), which has also been the case for burnout (Cremades et al., 2008; Gustafsson et al., 2007). Both depression and burnout have also been found to be higher in individual sport athletes (Cremades et al., 2008; Gustafsson et al., 2007; Nixdorf et al., 2013; Nixdorf et al., 2016). The research findings for both depression and burnout affecting the same groups further illustrates the similarities between the two constructs. Unfortunately, past research samples have consisted of participants from one university or one division level (Armstrong & Oomen-Early, 2009; Proctor & Boan-Lenzo, 2010; Simon & Docherty, 2014; Weigand et al., 2013; Wolanin et al., 2016; Yang et al., 2007). The current study will be useful in providing a large sample size across the nation with various division levels and sports that assesses depression and burnout levels of both genders in current intercollegiate student-athletes.

The Relationship Between Depression, Other Mental Health Issues and Burnout

Researchers in workplace settings have found burnout and depression to have a considerable overlap in symptoms (Bianchi, Schonfeld, & Laurent, 2014; Bianchi, Schonfeld, & Laurent, 2015; Bianchi & Schonfeld, 2016). Bianchi et al. (2015) conducted a systematic literature search on occupational burnout and depression yielding 67 cross-sectional studies and 25 longitudinal studies. The research from the literature search showed professional burnout to

overlap at a symptom level with depression, and that depressive symptoms were reported in participants experiencing burnout in both cross-sectional and longitudinal studies. Recent research by Bianchi and Schonfeld (2016) examined professional burnout and its association to a depressive cognitive style in 1,386 public school teachers in the United States. Participants completed a depression survey, a burnout measure and an attitude scale. The researchers found no participants who were burned out to be free of depressive symptoms, suggesting, “the burned out individual seems to live in a depressive cognitive world” (Bianchi & Schonfeld, 2016, p. 4). Similarly, Schonfeld and Bianchi (2015) found 86% of a burned out teacher sample to meet criteria for MDD, along with strong correlations between burnout and depressive symptoms. The authors suggested that burnout and depression may be circularly causal, with burnout being both predictive and predicted by symptoms of depression (Bianchi et al., 2015). An issue with the causal nature between burnout and depression could be the arbitrariness of the definition of burnout; the authors suggested that burnout cannot be reduced to the three symptoms that it is defined as. In sum, Bianchi et al. (2015) considered burnout to be weak from a conceptual standpoint. This may also be the same issue with the definition of burnout in sport.

As defined by the DSM-V, symptoms of clinical depression are described as a depressed mood, diminished interest or pleasure in activities, weight loss/gain, fatigue, loss of energy, lack of sleep, feelings of worthlessness, inability to think, or recurrent thoughts of death or suicide (APA, 2013). Similarly, athletes experiencing burnout have been described as suffering from motivational loss, feeling helpless, depressed mood, loss of enjoyment, physical and emotional exhaustion, a sense of reduced accomplishment, and psychologically or physically withdrawing from peers or sport (Gould et al., 1996a; Gould et al., 1996b; Gustafsson et al., 2007; Gustafsson et al., 2011; Raedeke, 1997; Raedeke & Smith, 2004; Silva, 1990; Smith, 1986). The similarity

of symptoms in people experiencing either burnout or depression appears to be evident, and the relationship between the two in sport appears to be relatively unexamined and disregarded.

Due to the differences in factors between occupation and sport, it has been suggested that burnout for each domain should be assessed separately from one another (De Francisco et al., 2016). Researchers continue to examine the relationship and similarity of burnout and depression in the workplace, whereas the research of burnout in sport has failed to include depression as a variable amongst collegiate athletes. Only a few studies have been conducted regarding sport burnout and its relation to other mental health issues.

In order to determine if burnout was discriminant from depression as a construct, Cresswell and Eklund (2006) examined the DASS and two assessment tools of burnout: the ABQ and the MBI-GS. Participants were 392 male rugby players from New Zealand, between the ages of 18 and 42, who completed the ABQ, MBI-GS and the DASS. The researchers found convergent validity within the subscales of both the ABQ and MBI, which suggests that each of the three components of burnout are correlated, indicating adequate measures. Discriminant validity was also found between the subscales within each measure. Further, stronger results for sport devaluation were found using the ABQ compared to the MBI-GS, indicating that the ABQ may be more appropriate for a sport setting. In addition, there was discriminant validity between burnout subscales, and depression and anxiety. The correlations between the burnout subscales (i.e., exhaustion, reduced accomplishment and devaluation) and anxiety were low with r values of .39, .40 and .34, respectively. The correlations between the same burnout subscales and depression were moderate with r values of .57, .45 and .57. However, Cresswell and Eklund (2006) stated that burnout and depression are similar yet discriminant from one another. Cresswell and Eklund's study was the first attempt at distinguishing the two as separate concepts

in the sport setting, and suggested that further research is warranted to clarify the theoretical discrepancy between burnout and depression in sport.

Common mental disorders such as depression, anxiety, distress, sleep disturbances, adverse nutrition, alcohol and smoking behaviors were examined in 295 retired professional rugby players (Gouttebauge, Kerkhoffs, & Lambert, 2015). Participants from France, Ireland and South Africa completed surveys on each aforementioned factor, along with measures of career dissatisfaction and life events. There was a statistically significant positive correlation between levels of career dissatisfaction and distress, as well as a statistically significant positive association between life events and distress symptoms. In addition, a quarter of the participants showed symptoms of distress, 28% experienced anxiety/depression, 29% reported sleep disturbances and 69% experienced adverse nutrition behavior. Although career dissatisfaction and all mental disorder symptoms measured were not necessarily causal, they were statistically significantly correlated amongst the retired rugby players (Gouttebauge et al., 2015). Perhaps “career dissatisfaction” may in other words be considered as a sense of reduced accomplishment, which is one of the three key symptoms of burnout. Gouttebauge et al. (2015) suggested raising awareness, developing preventative measures or providing support for common mental disorder symptoms amongst rugby players and those involved. However, due to demands and commitment of sport participation, the aforementioned is relevant to any athlete who may be experiencing symptoms.

The common occurrence of both psychosocial and mental health issues were examined in former and current professional male football players from several different countries (Gouttebauge, Frings-Dresen, & Sluiter, 2015). The researchers hypothesized that players with greater psychosocial stressors (injury, low social support, major life events and surgery) would

have greater mental health problems. Gouttebarga et al. (2015) found that for both groups, the highest prevalence rates were for anxiety/depression and adverse nutrition behavior. In addition, 5% of current players ($n = 149$) reported burnout and 26% reported depression/anxiety. In comparison, 15% of former players ($n = 104$) reported burnout and 39% reported depression/anxiety. For current players, major life events were positively associated with burnout, anxiety/depression and distress. Further, burnout was positively associated with low social support from coaches or trainers. Although former players were more likely to report a higher prevalence of mental health issues in comparison to current players, it is important to consider that both experience disorders such as depression and anxiety, as well as burnout. A limitation to this study was the use of all male participants from a professional football union, yet the effects from sport may possibly continue to play out with an athlete even after participation has concluded (Gouttebarga et al., 2015).

Due to the likely overlap between burnout and depressive symptoms, such as lack of enjoyment, low energy and motivation, learned helplessness, emotional/physical withdrawal and frustration (Gould et al., 1996a; Gould et al., 1996b) further research is needed before describing them as completely distinct from one another. A recent cross-sectional study on an adolescent sample of Spanish athletes ($N = 453$, 68.7% male athletes and 31.3% female athletes) explored the relationship between stress, burnout and depression (De Francisco et al., 2016). The researchers found stress to have a positive, statistically significant direct effect on depression, and a positive, statistically significant indirect effect on depression via burnout. In addition, burnout had a statistically significant positive direct effect on depression. As interpreted from the results, stress may be a determinant of burnout and burnout may be a predictor of depression.

Due to the cross-sectional nature of the study, the circular or causal nature between burnout and depression is still unclear (De Francisco et al., 2016).

No known research has explored burnout and depression together within a collegiate athlete population. The research has been limited to male contact sports at the professional level (Cresswell & Eklund, 2006) and an adolescent Spanish population (De Francisco et al., 2016). Studies on collegiate student-athletes, as well as the relationship between burnout and depression are needed which the current study will research.

Summary

Burnout in occupational settings and depression share common symptomatology (Bianchi et al., 2014; Bianchi et al., 2015; Bianchi & Schonfeld, 2016; Schonfeld & Bianchi, 2015). However, in sport, burnout and depression were deemed as two distinct constructs (Cresswell & Eklund, 2006). It has been argued that burnout is experienced specifically in regards to the occupational context, whereas depression manifests in each domain of one's life (Maslach et al., 2001). The current research is exploratory in theorizing that athletic burnout is a form of depression that is specific to sport. Athletes who experience burnout may use the label of "burnout" in order to continue appearing as healthy and psychologically stable (as opposed to weak or unstable), rather than considering themselves to be in a depressive state.

Athletes experiencing burnout may also experience depressive symptoms (De Francisco et al., 2016; Gouttebauge et al., 2015; Kerr et al., 2014). At present there are only two studies that examined a correlation between burnout and depression in sport, one on a professional rugby population (Cresswell & Eklund, 2006) and another on an adolescent sample from Spain (De Francisco et al., 2016). Cresswell and Eklund (2006) found convergent and discriminant validity between the MBI-GS, ABQ and DASS, yet there still appears to be overlap in symptoms of

burnout and depression such as a lack of enjoyment, lowered energy and motivation, learned helplessness, emotional/physical withdrawal, poor sleep and frustration (Gould et al., 1996; Gould et al., 1996b). In addition, although there are higher mental health issues in former athletes than non-athletes (Simon & Docherty, 2014; Kerr et al., 2014; Gouttebauge et al., 2015), current collegiate student-athletes are noticeably experiencing depression (Armstrong & Oomen-Early, 2009; Proctor & Boan-Lenzo, 2010; Weigand et al., 2013; Wolanin et al., 2016; Yang et al., 2007), with one fifth of an athletic population reporting depressive symptoms (Wolanin et al., 2016; Yang et al., 2007).

Depressive symptoms are experienced by athletes (Armstrong & Oomen-Early, 2009; Proctor & Boan-Lenzo, 2010; Weigand et al., 2013; Wolanin et al., 2015; Wolanin et al., 2016; Yang et al., 2007) and because athletic burnout and depression both incorporate similar symptoms as mentioned previously, (Bianchi, Schonfeld, & Laurent, 2014; Bianchi, Schonfeld, & Laurent, 2015; Bianchi & Schonfeld, 2016) they may be considerably correlated. Further, there is minimal research on burnout levels and gender differences, although research has shown higher depression levels in female athletes (Armstrong & Oomen-Early, 2009; Yang et al., 2007; Wolanin et al., 2015). As such, the present research aims to study the relationship between burnout and depression levels in current intercollegiate athletes and explore gender differences. Depression and burnout can both impact aspects of life such as academics, social relationships and overall satisfaction, and recognition of its importance should be acknowledged by all of those involved in the lives of athletes or sport in general (Armstrong & Oomen-Early, 2009; Wolanin et al., 2016).

It was hypothesized that burnout and depression were statistically significantly positively correlated, with female athletes having statistically significantly higher levels of both than males.

Creating awareness of the potential relatedness in symptoms can help athletes in the future who may be experiencing what is perceived as “burnout,” but may require treatment given its potential similarity to depression. In other words, “burnout” may be a safer term for athletes to utilize and may perhaps be masking the true percentage of athletes with depression. Outcomes of the study can inform treatment, may help in prevention or screening or help enhance the theoretical framework of burnout in sport.

Chapter III

Methods and Procedure

Introduction

The purpose of this study was to examine the relationship between burnout and depressive symptoms in male and female intercollegiate athletes. Research has shown that burnout is associated with other mental health issues, such as stress, anxiety and mood disturbances (Goodger et al., 2007; Kerr et al., 2014; Raedeke & Smith, 2004; Smith, 1986). However, there is no reported research exploring burnout and depressive symptoms specifically in intercollegiate athletes, nor of the potential gender differences in the correlation of both variables. The present study utilized a correlational design to investigate the relationship between depression and burnout scores, as well as any differences in correlations of those scores between male and female athletes. A frequency checklist was also used to corroborate information with the survey assessments to examine if there was any overlap in the symptomatology of burnout and depression experienced by participants.

Description of the Study Population

Participants were 422 National Collegiate Athletic Association (NCAA, 37.2%, $n = 157$), National Association of Intercollegiate Athletics (NAIA, 42.9%, $n = 181$), and National Junior College Athletic Association (NJCAA, 19.8%, $n = 84$) athletes. See Table 1 for the demographics of the participants. Gender identity was measured by athletes indicating male, female or transgender. The sample was 24.4% men and 74.9% women. One participant indicated they were transgender and two participants chose “prefer not to answer.” The age of participants ranged from 18 to 23 ($M = 19.36$). Participants were freshmen (40%, $n = 169$), sophomores

(27%, $n = 114$), juniors (19%, $n = 80$), seniors (13.5%, $n = 57$) and graduate school/post-baccalaureate (.5%, $n = 2$). Seventy-two percent of the sample was white.

Table 1

Number and Percentage of Participants for Each Demographic

Demographics	<i>n</i>	%
Gender Identity		
Female	316	74.9
Male	103	24.4
Transgender	1	.2
“Prefer Not to Answer”	2	.5
Race/Ethnicity		
American Indian or Alaska Native	4	.9
Asian	4	.9
Black or African American	18	4.3
Hispanic or Latino/Latina/Latinx	40	9.5
Native Hawaiian and Other Pacific Islander	1	.2
White	304	72.0
Multi-ethnic	47	11.1
Prefer not to respond	4	.9

Participants were athletes from NCAA Division I (8.3%, $n = 35$), NCAA Division II (8.8%, $n = 37$), NCAA Division III (20.1%, $n = 85$), NAIA Division I (29.9%, $n = 126$), NAIA Division II (13.0%, $n = 55$), NJCAA Division I (7.8%, $n = 33$), NJCAA Division II (9.2%, $n =$

39) and NJCAA Division III (2.8%, $n = 12$). Athletes participated in the following sports: basketball (8%, $n = 34$), baseball (3.3%, $n = 14$), beach volleyball (.5%, $n = 2$), bowling (4.1%, $n = 7$), competitive cheer or dance (.7%, $n = 3$), cross country (7.4%, $n = 31$), field hockey (1.4%, $n = 6$), football (1.1%, $n = 5$), golf (2.1%, $n = 9$), gymnastics (.2%, $n = 1$), half marathon (.2%, $n = 1$), indoor track and field (4.4%, $n = 19$), lacrosse (6.4%, $n = 27$), outdoor track and field (8.4%, $n = 34$), rowing (1.7%, $n = 7$), rugby (.5%, $n = 2$), skiing (.2%, $n = 1$), soccer (14.5%, $n = 61$), softball (23%, $n = 97$), swimming and diving (4.2%, $n = 18$), tennis (2.7%, $n = 11$), volleyball (10.6%, $n = 45$), wrestling (7.1%, $n = 30$). The frequencies exceed 100% and the total N is larger than 422, because some participants indicated playing more than one varsity sport. Eighteen percent of athletes indicated being in pre-season ($n = 76$), 53.3% were in their off-season ($n = 225$) and 28.7% ($n = 121$) were in-season. The mean amount of time that was currently being dedicated to their sport was 15.95 hours ($SD = 12.40$).

Design of the Study

The study used a correlational design and a frequency checklist. The dependent variables were burnout and depression, and the independent variable was gender identity (male and female athletes). Although “transgender” was an option to choose for gender identity in the demographic survey, it was not used as an independent variable in order to make it possible to compare the results to past research, which has identified only male and female athletes. Additionally, only one participant identified as transgender; therefore, the n was not large enough to analyze.

Data Collection Procedures

Instruments. Participants were asked to complete three self-report measures: the Athlete Burnout Questionnaire (ABQ; Raedeke, 2001) and the Zung Self-Rating Depression Scale (SDS; Zung, 1965) and a demographic questionnaire. The ABQ (see Appendix C) consists of 15

statements with three subscales and a 5-point Likert scale from 1 (*almost never*) to 5 (*almost always*). Participants rated the statements regarding how they were feeling towards their current sport. The three subscales of the ABQ are: a reduced sense of accomplishment (5 items), devaluation (5 items) and emotional/physical exhaustion (5 items). Some statements of the aforementioned subscales include, respectively: “I’m accomplishing many worthwhile things in [*sport*],” “I have negative feelings towards [*sport*],” and “I feel so tired from my training that I have trouble finding energy to do other things.” The possible range of scores for the ABQ were between 15 and 75. Since there are currently no agreed cutoff points for the classification of burnout on the ABQ (Hodge et al., 2008; Raedeke & Smith, 2001), the participants’ total scores from the ABQ were calculated in the present study, along with mean subscale scores. Higher scores indicated more burnout. Items 1 and 14 are reverse scored. Cronbach’s reliability coefficient of the ABQ had alpha levels between .86 and .92 and supportive construct validity (Raedeke & Smith, 2001). The ABQ is the most commonly used measure of burnout in sport and is preferable to non-sport burnout measures such as the MBI (Cresswell & Eklund, 2006).

The SDS (see Appendix D) was used to measure subclinical depression levels. It consists of 20 statements, 10 positively worded and 10 negatively worded (Zung, 1965). Participants used a 4-point Likert scale from 1 (*a little of the time*) to 4 (*most of the time*). The possible scores on the SDS range from 20-80. Scores between 20-49 is considered a normal range. Scores between 50-59 and 60-69 indicate mild and moderate symptoms of depression, respectively. Scores of 70 or above indicate severe depression. The 10 positively worded statements (i.e., 2, 5, 6, 11, 12, 14, 16, 17, 18, and 20) were reverse scored. The SDS included statements regarding positive affect (9 items; e.g., “My life is pretty full”), negative symptoms (8 items, e.g., “I am more irritable than usual”), and somatic symptoms (3 items; e.g., “I have trouble with constipation”) (Zung,

1965; Shafer, 2006). Cronbach's alpha coefficients ranged from .88 to .93 for depressed and non-depressed clients, respectively (Gabrys & Peters, 1985). Thurber, Snow, and Honts (2002) examined concurrent validity between the SDS and the scale of depression on the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) and found the SDS to be more congruent with DSM criteria compared to the depression scale of the MMPI-2. There was also greater diagnostic accuracy in determining depressed versus non-depressed participants (Thurber et al., 2002). Past researchers have used the SDS in sport settings, including studies on male and female runners, as well as the United States Alpine ski team (Chan & Grossman, 1988; May, Veach, Reed, & Griffey, 1985; Porter, 1985).

Following both surveys, participants responded to two questions: "Have you ever experienced what you would consider to be "burnout" from your sport?" If they checked "yes," they were asked to check-off a list of symptoms that they experienced while being burned out. Eight of the nine depressive symptoms for Major Depressive Disorder (MDD) were listed. An example of a possible symptom was "feeling tired or having a loss of energy" (see Appendix E for the full list of symptoms). The depressive symptom of having recurrent thoughts of death or suicidal ideation was not included in the checklist for ethical reasons. The criteria for MDD as stated in the American Psychiatric Association's DSM-V specifies that a person must experience five of the nine symptoms, with at least one being a depressed mood or a loss of interest, persistently for two weeks (APA, 2013). Five distractors were also included as possible responses (see Appendix E). An example of a distractor was "Skipped classes." Participants were instructed to check off all that applied. Lastly, a demographic survey gathered participants' age, gender, class year, sport type, division and hours per week currently being dedicated to their sport.

Measurement techniques and procedures. Following institutional ethics approval from a Human Subjects Review Committee (HSRC; see Appendix A), participants were recruited via cluster sampling in order to contact a large number of athletes throughout the United States. The websites for the NCAA, NAIA and NJCAA were used in order to gather the universities and colleges to be used in the sampling, as well as the coaches or athletic directors to be contacted. If coaches' emails were not provided, then the athletic director of the college or university was contacted.

The NCAA has three divisions and 24 sports, the NAIA has 21 conferences and 15 sports, and the NJCAA has 24 regions and 17 sports. Twenty schools from each NCAA division were selected using a random number generator from the *NCAA Members by Division* page located on the NCAA website. Two-stage sampling was used to select the schools from the NAIA; seven conferences (approximately one-third of the NAIA conferences) were randomly selected and 10 schools within that cluster were randomly chosen to be contacted. Two-stage sampling was also used to select eight regions of the NJCAA, approximately one-third of the regions. Ten schools within each clustered region were contacted. Coaches or athletic directors from the chosen schools received information regarding the study via email, which included a link to the online anonymous surveys and were asked to share the surveys with their athletes. The email explained the purpose and design of the study (see Appendix G) noting that any athlete's participation would remain anonymous and confidential. The email also stated that the survey link may be forwarded to other coaches or athletic personnel who may know athletes that would be interested in participating; thus, it is possible that some athletes were recruited via snowball sampling.

Using Qualtrics software, the online survey included an electronic informed consent form (see Appendix B), the ABQ and SDS, two follow-up questions and a demographic survey. Athletes remained anonymous, with only age, gender identity, ethnicity, sport and school division as known demographics. Five hundred and twelve people began the survey, and a total of 422 completed the survey. Participants were allowed to discontinue the survey at any time. The correlation between burnout scores and depression scores was analyzed for the total sample ($N = 422$), and the remaining analyses only included male and female athletes ($N = 419$) in order to be consistent with past research. Data was collected for an eight-week period in the fall of 2016. The researcher's email was provided for those who were interested in a summary of results.

For all recruitment and survey materials the terms “burnout” and “depression” were replaced with “motivation” and “mood states” respectively in order to prevent any priming of the participants' answers. This phrasing procedure aligns with past research. For example, Gould et al. (1996a) used the term “motivation” as opposed to “burnout” due to its negative connotation. Cresswell and Eklund (2007) avoided the word “burnout” in their qualitative research due to possible stigma experienced by athletes. Further, Cresswell and Eklund (2007) argued that burnout has several colloquial definitions and did not want the term to influence the participants' conceptualizations of the term during their interviews.

Data Analysis. The quantitative data was analyzed using SPSS 21 statistical software. Several Pearson product correlations were performed. One was performed on the total burnout and depression scores to measure correlation. A scatterplot illustrated the relationships between burnout and depression scores. To interpret the correlations, an r value between ± 0.80 -1.00 was considered a very strong relationship, and an r value between ± 0.60 -0.79 was considered a

strong relationship (Salkind, 2000). Further, an r value between $\pm 0.40-0.59$ represented a moderate relationship, and an r value between $\pm 0.20-0.39$ was a weak relationship. Lastly, an r value between $\pm 0.00-0.10$ represented no relationship (Salkind, 2000). Pearson correlations were also performed on each of the three subscales of the ABQ (i.e., reduced accomplishment, exhaustion and devaluation) and total depression scores. The correlation was performed to determine whether a particular subscale of burnout was more strongly correlated with depression. To determine if the strength of the correlation between burnout and depression differed significantly for women compared to men, a Fisher (1921) r to z transformation was performed.

The responses from the frequency checklist question were compared to depressive symptoms as defined by the DSM-V (APA, 2013). This was performed in order to determine any overlap between burnout and depression from an athlete's perspective. According to the DSM-V, to be diagnosed with MDD, a person must experience five of nine symptoms, with at least one being a depressed mood or a loss of interest, persistently for a period of two weeks (APA, 2013). Therefore, the percentage of athletes who reported five or more symptoms, with at least one being a depressed mood or loss of interest, was tabulated.

Chapter IV

Results and Discussion

Introduction

There were three purposes to the current study. The first purpose was to determine the relationship between burnout and depression levels in current intercollegiate athletes. The second purpose was to examine any gender differences in the burnout and depression relationship among intercollegiate athletes. The third purpose was to investigate if burned out athletes report any symptoms that overlap with the DSM-V's (APA, 2013) clinical symptom criteria for depression. Burnout was assessed using the Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001) and depression was assessed using the Zung Self-Rating Depression Scale (SDS; Zung, 1965). Participants who indicated that they had been burned out also reported depressive symptoms they experienced by using a checklist designed for this survey.

Results

Total burnout and depression scores. Preliminary analyses indicated reliable internal consistency. For example, Cronbach's alpha for the ABQ was .93 and Cronbach's alphas for each subscale of the ABQ (i.e., reduced sense of accomplishment, emotional/physical exhaustion and devaluation) were .85, .89 and .89, respectively. Cronbach's alpha for the SDS was .83. A Cronbach alpha of .70 is considered as strong (Bland & Altman, 1997). As shown in Figure 1, there was a strong, positive, statistically significant relationship ($r = .600$) between total burnout scores and total depression scores for the entire sample. Total burnout scores, as measured by the ABQ can range from 15 to 75. Total depression scores, as measured by the SDS can range from 20 to 80.

Figure 1. Scatterplot of Total Burnout Scores and Total Depression Scores

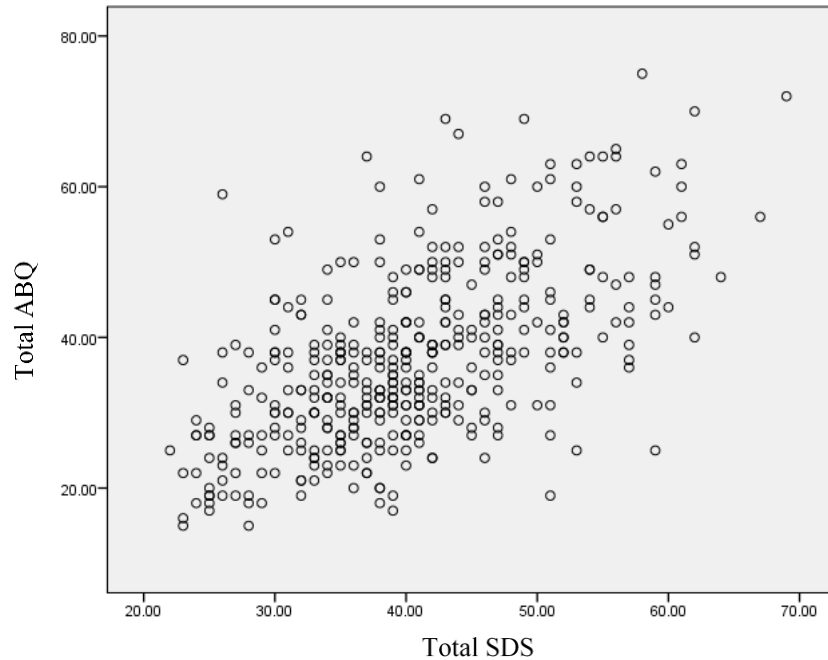


Figure 1. Pearson correlation ($p < .001$) between the total sample's ($N = 422$) burnout score (ABQ) and depression score (SDS).

Gender differences. Means and standard deviations were calculated for both burnout and depression scores by gender (see Table 2). A Pearson product correlation revealed a moderate, positive, statistically significant relationship between total burnout scores and total depression scores for male athletes (see Table 3). There was a strong, positive, statistically significant relationship between total burnout scores and total depression scores for female athletes. A Fisher r to z transformation was performed and determined that the strength of the correlations was not statistically significantly different for men compared to women ($Z = -1.06$, $p = .2891$). Pearson product correlations were also calculated to analyze gender differences between total depression scores and each subscale of the ABQ (see Table 3). Each subscale was positively,

statistically significantly correlated to total depression scores for both men and women.

However, women's r values for each subscale were stronger and ranged from .507 to .557,

whereas men's scores for each subscale ranged from .369 to .486.

Table 2.

Means and Standard Deviations of Burnout and Depression Scores for Gender and Part of Season

	n	ABQ		SDS	
		M	SD	M	SD
Total Sample	422	37.20	11.47	40.44	9.15
Women	316	37.73	11.62	40.79	9.51
Men	103	35.21	10.72	39.11	7.72
Off-Season	225	35.80	11.03	38.97	9.10
Pre-Season	76	38.95	10.06	41.83	8.63
In-Season	121	38.71	12.79	42.31	9.17

Note. Lower scores on the ABQ indicate less burnout and higher scores indicate more burnout (Hodge et al., 2008; Raedeke & Smith, 2001). Scores between 20-49 are considered a normal range, scores between 50 to 69 indicated mild to moderate symptoms of depression and scores of 70 are above indicate severe depressive symptoms (Zung, 1965).

Table 3

Correlations by Gender Between Total Depression Scores, Total Burnout Scores and Subscales of the ABQ

		Total ABQ	Reduced Sense of Accomplishment	Sport Devaluation	Emotional/Physical Exhaustion
	<i>n</i>				
Men SDS	103	.539**	.369**	.486**	.468**
Women SDS	316	.620**	.556**	.507**	.557**

Note. **Correlation is significant ($p < .001$).

Burnout and depression symptom overlap. Regarding the two follow-up questions on the survey, 66% ($N = 279$) of the total sample (24.4% men and 74.9% women) indicated having experienced what they considered “burnout” from their sport. That subgroup of participants reported experiencing M of 4.25 ($SD = 2.36$) DSM-V (APA, 2013) depressive symptoms at the time they were “burned out.” Of the burned out subsample, 94% indicated at least one depressive symptom experienced. Further, 47% ($n = 131$, 31% of the study sample) of the subsample reported that while “burned out” they experienced five or more symptoms of depression, with at least one being a depressed mood or loss of interest. Therefore, 47% of the athletes who believed they were “burned out” from their sport ($n = 131$) met the diagnostic criteria for MDD, according to their self-report.

Exploratory analysis. Given the strong, statistically significant correlation between burnout and depression, the researchers were curious to see if correlations between burnout and depression scores were similar across different parts of a sport season. The researchers calculated Pearson product correlations between burnout and depression for athletes in their off-season, pre-

season and competitive season (in-season). As shown in Table 4, the correlations ranged from .546 to .662 and each were moderately to strongly, positively, statistically significantly correlated ($p < .001$). Exactly 53.3% of the sample indicated being in off-season, 18% were in pre-season and 28.7% were in-season at the time of the survey (see Table 2 for means and standard deviations). Lastly, athletes reported dedicating a range of hours per week to their sport, from 0 hours (indicated as off-season) up to 78 hours, with a mean of 15.95 hours ($SD = 12.40$).

Table 4

Correlations between ABQ and SDS Total Scores for Athletes in Different Parts of a Sport

Season

Part of Season	<i>n</i>	<i>r</i>
Off-Season	225	.546**
Pre-Season	76	.605**
In-Season	121	.662**

Note. The *r* values are the correlation between ABQ and SDS scores. **Correlation is significant ($p < .001$).

Discussion

This study is the first to examine the relationship between burnout and depression in intercollegiate athletes. The topic of burnout and depression has been explored in professional athletes from New Zealand (Cresswell & Eklund, 2006) and adolescent athletes from Spain (De Francisco et al., 2016), therefore, this study is also the first to address the topic in an athletic sample from the United States. The findings indicate a strong, positive, statistically significant correlation between burnout and depression scores in a sample of 422 intercollegiate athletes, therefore rejecting the first null hypothesis. In the current study, each subscale of the ABQ was

moderately, positively, statistically significantly correlated with total depression scores, with exhaustion having the strongest correlation to depression. Emotional exhaustion has been considered as the core component of burnout (Goodger et al., 2007; Maslach et al., 2001). In an occupational setting, Bianchi et al. (2014) also found exhaustion to be correlated the strongest with depression. The moderately significant correlations contradict Cresswell and Eklund's (2006) findings between the subscales of the ABQ and the depression subscale on the DASS. Cresswell and Eklund found low to moderate correlations between each subscale of the ABQ and the depression subscale of the DASS in an elite, male rugby sample and deemed burnout and depression to be two separate constructs (Cresswell & Eklund, 2006). However, the strong correlations as well as the overlap in symptoms as reported by participants from the current study, indicate possible similarities between both depression and burnout. Therefore, at the very least, athletes with burnout may also need help or treatment for depression, and burnout should be considered a substantial mental health problem when it is identified in athletes.

The mean depression scores for men and women in the current study indicated a normal range of depressive symptoms; no participants scored above a 69. However, 16.6% of the sample reported mild to moderate symptoms, which was within the range of previously reported depressive symptoms in collegiate student-athletes (Proctor & Boan-Lenzo, 2010; Weigand et al., 2013; Yang et al. 2007). The results from the current study appear to confirm that depression is a substantial issue for intercollegiate athletes. Perhaps more mental health resources could be available for the student-athlete population. For example, Dubuc-Charbonneau and Durand-Bush (2015) implemented a person-centered intervention for eight university student-athletes across their sport seasons. The researchers measured how the interventions affected the athletes' burnout, stress, self-regulation and overall well-being. Although it was a small sample size, the

student-athletes reported less burnout and stress, as well as positive changes in their self-regulation and well-being at the end of the intervention. From previous literature, interventions appear to help treat burnout (Dubuc-Charbonneau & Durand-Bush, 2015), yet more research is warranted to further contribute to potential treatments.

Past researchers who have studied burnout and depression separately from one another have found that female athletes report higher burnout (Cremades et al., 2008; Gustafsson et al., 2007; Yang et al., 2007) and higher depressive symptoms than male athletes (Armstrong & Oomen-Early, 2009; Donohue et al., 2004; Junge & Feddermann-Demont, 2015). The correlation between burnout and depression was stronger in female athletes than male athletes. However, using a Fisher r to z transformation, it was determined that the r values for each group were not statistically significantly different. Therefore, the finding fails to reject the second null hypothesis and instead indicates that the relationship between burnout and depression may not differ between men and women.

Related to the third purpose of the study, athletes frequently self-reported clinical depressive symptoms at the time when they were burned out; therefore, the third null hypothesis is rejected. Given the strong correlation between burnout and depression, and participants' responses on the symptoms checklist, it appears that one usually occurs with the other. This is in line with findings from workplace burnout literature (Bianchi et al., 2014; Bianchi et al., 2015; Schonfeld & Bianchi, 2015). For example, Bianchi et al. (2014) found that 85% of their burned out sample ($N = 5,575$) met criteria for MDD. Similarly, Schonfeld and Bianchi (2015) found that 86% of their burned out participants met the criteria for a provisional diagnosis of MDD. As for research on burnout in sport, Gould et al. (1996b) qualitatively found that their burned out sample reported causes of burnout to include a lack of motivation, irritability, frustration, lacking

physical energy or having difficulty concentrating, which are similar to depressive symptoms. As for the current study, 94% of the self-reported burned out sample reported between one and eight symptoms of depression, with nearly half of them reporting five or more. Some symptoms of depression include irritability, a loss in concentration, a decrease in interests, and feeling tired or a loss of energy (APA, 2013). Given that depressive symptoms, as reported by the athletes, occurred while they were experiencing burnout, this may be more evidence that burnout and depression are related or possibly similar.

In an overview of athlete burnout research, Gustafsson et al. (2016) stated that the definition of burnout is problematic and that there is conceptual overlap regarding each dimension (i.e., exhaustion, reduced accomplishment and devaluation). Research has also indicated both in sport and the workplace that the circular or causal nature between burnout and depression is still unclear (Bianchi et al., 2015; De Francisco et al., 2016). Perhaps burnout can cause depression in athletes, or depression can cause athletes to become burned out.

Alternatively, the two constructs may be highly similar and the term burnout may be a safer term that athletes prefer to use, as opposed to depression in order to avoid stigma of having a mental health issue. As indicated by the results of this study, burnout and depression may occur concurrently, or they are conceptually similar. Nonetheless, the findings are not in line with Cresswell and Eklund's (2006) conclusions that burnout and depression were completely separate.

The current study was exploratory in comparing burnout and depression scores between athletes at different times during a sport season. Participants were either in pre-season for their sport, in-season or in their off-season. All three points (i.e., pre-season, in-season and off-season) were moderately to strongly, positively, statistically significantly correlated to both burnout and

depression. It appears that burnout and depression may not only occur during the most competitive part of a season, therefore, monitoring athletes across an entire sport season may be beneficial. It is also of mention that athletes in their off-season reported a moderate, statistically significant correlation between burnout and depression, providing further evidence that overtraining may not be a pre-requisite for burnout.

Hours dedicated to sport (e.g., team meetings, training, travel time, practices, etc.) were also measured in the current study, with a mean of 15.95 hours ($SD = 12.40$). Proctor and Boan-Lenzo's (2010) male athlete participants reportedly dedicated an average of 20.7 hours per week to their sport, with a range of 4 to 40 hours. The NCAA permits a maximum of 20 hours per week to be dedicated to sport during a sport season, and 8 hours per week during an athlete's off-season, during an academic year (The National Collegiate Athletic Association, 2009). Thirty-two and a half percent of the current sample reported dedicating more than 20 hours per week to their sport. Given that student-athletes balance both academics and sport, it may be important for their well-being to adhere to the 20-hour rule in order to have adequate recovery and rest. The demanding hours of sport may lead to fewer days of rest, which has been found to be a predictor of depression (Armstrong & Oomen-Early, 2009). In addition, dedicating a large amount of hours strictly to sport may contribute to an athlete's unidimensional identity, which has been shown to be a predictor of burnout (Coakley, 1992).

While the results of the current study offer a possible new understanding of burnout in sport, there are several limitations that deserve mention. The first was a failure to ask the participants what their duration was for experiencing their "burnout." Given the intent to determine if burnout symptoms were similar to depressive symptoms, knowing the duration of the participants' "burnout" is necessary because, according to the DSM-V, to be diagnosed with

MDD, symptoms must be persistent for at least a two-week period. However, athletes may be unlikely to consider themselves “burned out” if it was only for a few days, so it is expected that they experienced their burnout for at least two weeks. Secondly, the current study was cross-sectional and correlational in nature. Thus, the findings do not provide information about the causal nature of burnout and depression, if they are in fact separate constructs. Also, longitudinal studies are needed to examine the possible fluctuations of burnout and depression at various points during training, or to track an athlete’s mental health, given the different demands of sport across an entire season. However, in the current study, participants indicated which part of the season they were in and comparisons were made. Although participants being in a different part of their season may have resulted in a lack of standardization of timing, off-season, pre-season and in-season each had a moderate to strong, statistically significant correlation between burnout and depression scores. In addition, participants in this study were current athletes. Given that some athletes who burnout leave their sport (Gould et al., 1996a), future investigations would benefit from including athletes who have discontinued their sport to provide further understanding of the nature of burnout.

To continue, the current sample was predominantly white (73%), which may reduce generalizability. However, according to the NCAA’s 2015-2016 student-athlete demographics research, the majority of athletes across all sports and divisions are white (Irick, 2017). Further, the sample was comprised of predominantly women (74.9%). Past researchers have typically used only men as participants (Cresswell & Eklund, 2006; Proctor & Boan-Lenzo, 2010). Therefore, even though the genders were not equally represented, the inclusion of both female and male athlete participants in this study is a strength. Lastly, there could have also been a

volunteer bias for participation, or a recall bias given that athletes were asked if they had ever experienced burnout from their sport, limiting findings.

There are several strengths of the current study, such as a large sample size, the inclusion of 23 different sports and women, and recruitment of athletes from across the NCAA, NAIA and NJCAA. The use of stratified sampling resulted in a nationwide sample of athletes and the anonymous surveys likely increased participant honesty. Past studies have rarely recruited such large and diverse samples, as well as including both male and female athletes. For example, Cresswell and Eklund (2006) who concluded that burnout and depression were distinct from one another used all male participants from one sport. In other studies, Yang et al. (2007) and Wolanin et al. (2016) found information on depression in collegiate athletes, but participants were only from one university. Lastly, DeFrancisco et al. (2016) examined the relationship between stress, burnout and depression, however, participants were adolescent Spanish athletes who completed the ABQ and DASS, which were the same measures from Cresswell and Eklund's (2006) study. De Francisco et al. (2016) found stress to have a statistically significant direct effect on depression, as well as a statistically significant indirect effect via burnout. Although the researchers concluded that stress may be a determinant of burnout and burnout may predict depression, they concluded that the circular causal nature between burnout and depression is unclear (De Francisco et al., 2016) and causal inferences from cross-sectional designs are limited. The current research was also unable to determine if there is a circular causal relationship between burnout and depression, yet the overlap in symptoms was evident. Moreover, to this researcher's knowledge, this is the first study to investigate and determine the relationship between burnout and depression in intercollegiate athletes.

According to Raedeke et al. (2014), once an athlete has become burned out, there are no supported or effective treatments. However, only one study to date has assessed an intervention for treating burnout, stress and well-being in athletes (Dubuc-Charbonneau & Durand-Bush, 2015). Goodger et al. (2007) also concluded that “feelings associated with burnout” do not go away even if athletes withdraw from their sport (Goodger et al., 2007, p. 360). Given that burnout and depression are correlated and appear to have overlapping symptoms as reported by athletes in this study, depression remedies may potentially be effective in treating burnout. Nearly half of the self-reported burned out sample experienced five or more depressive symptoms, possibly indicating MDD (APA, 2013). Therefore, current athletes experiencing burnout could also be experiencing depression, yet may not be receiving any treatment. Occupational researchers have suggested that burnout may be perceived as “less debilitating and less of an individual problem than depression” (Bianchi et al., 2014, p. 320). However, the findings of this study suggest that athletic personnel may want to change their referrals or treatment for athletes that they perceive as being “burned out.” For example, if burnout is detected in an athlete, then it should be considered as a serious mental health issue and possibly refer the athlete to a mental health clinician in order to initiate similar treatment used for depression.

Chapter V

Summary, Conclusion, and Recommendations

Summary

The purposes of this study were to examine the relationship between burnout and depression in intercollegiate athletes, investigate gender differences in burnout and depression scores and explore if there were any overlapping symptoms between burnout and depression. The null hypothesis was that there was no statistically significant relationship between burnout and depression in current intercollegiate athletes. The second null hypothesis was that there was no statistically significant relationship between burnout and depression in male and female intercollegiate athletes. The third null hypothesis was that there were no overlapping symptoms of burnout and depression as reported by the participants. Given the similarities between burnout and depression as documented in workplace burnout literature (Bianchi et al., 2014; Bianchi et al., 2015; Bianchi & Schonfeld, 2016), the researcher hypothesized that sport burnout and depression have similar symptoms and that *burnout* may potentially be an athletic form of depression. To the researchers' knowledge, no prior research has examined the relationship between burnout and depression in intercollegiate athletes, nor has the topic been studied in an athletic sample within the United States.

Conclusion

Researchers found a strong, statistically significant correlation between burnout and depression in an intercollegiate athlete sample. Therefore, burnout and depression appear to occur concurrently and burnout should be considered as a serious mental health issue. Cresswell and Eklund (2006) have described burnout and depression as separate constructs after finding ABQ scores to be low or moderately correlated with a scores of a depression subscale. However,

results from the current study found a strong, positive, statistically significant relationship between burnout and depression scores in a sample of intercollegiate athletes. The finding that burnout and depression are so strongly related calls into question the claim that they are separate constructs. Past researchers have also found that female athletes reported higher burnout scores (Cremades et al., 2008; Gustafsson et al., 2007), and female athletes reported higher depression scores than male athletes (Armstrong & Oomen-Early, 2009; Donohue et al., 2004; Junge & Feddermann-Demont, 2015; Wolanin et al., 2016; Yang et al., 2007). The correlation between burnout and depression was stronger in female athletes compared to male athletes; however, the difference was not statistically significant. Given that there was no statistical difference between genders, there may be indication that both genders are likely to experience the same connection between burnout and depression.

Sixty-six percent of the current sample reported being “burned out” from their sport at some point in their career; during which, 47% of the athletes reported having experienced five or more clinical symptoms of depression while being “burned out.” Given that a person must experience five of the nine symptoms, with at least one being a depressed mood or a loss of interest, persistently for two weeks to be diagnosed with MDD (APA, 2013) it can be concluded that participants in the current study could have been experiencing MDD while they were burned out from their sport. Therefore, the findings additionally indicate that the relationship between burnout and depression may be more similar than previously understood. As such, the current findings may enhance the conceptual understanding of burnout.

Recommendations

The relationship between burnout and depression should no longer be overlooked. Although the term *burnout* may seem safer to use, it may not capture the seriousness of the issue

and therefore, the stigma around the term *depression* should be reduced. Given the similarities and correlations between burnout and depression, the results from the current research may assist in informing athletic personnel about screening or treatment for intercollegiate athletes. For example, if athletic personnel detects burnout in an athlete, then it should be regarded as a serious mental health issue and perhaps refer the athlete to a proper clinician. Future research is also needed on prevention or treatment interventions for burnout (Raedeke et al., 2014).

More research is warranted to continue investigating the association and overlap in symptoms, and to further understand the theoretical concept of burnout. Future research could assess the duration of athletes experiencing their burned out state, or possibly track athlete mental health in a longitudinal study. If burnout and depression were tracked across a season, then researchers may be able to further determine if they are as similar as they appear to be or occur concurrently over a long period of time. A longitudinal study may also reveal a causal relationship between burnout and depression. Sport specific factors could also be controlled for in future studies. For instance, injuries, concussions or overtraining could be included since they have been shown to be predictors of either burnout or depression (Cresswell & Eklund, 2006b; Nixdorf et al., 2016; Nixdorf et al., 2013).

Sport psychology consultants or athletic trainers may also want to administer baseline burnout and depression measures in order to track athlete mental health across a season. Further, if sport psychology personnel assess for burnout, then they should also assess for depression and vice versa. It has been suggested by Gould and Whitley (2009) that formal education on athlete burnout, training, stress management, recovery and balancing sport with other aspects of one's life should be included within the NCAA's program for all athletic personnel. The findings from the current study should also be considered in such a program. More specifically, formal

education could include training on the potentially serious mental health consequences of burnout, or that burnout may be an *athletic depression* given the current results. Therefore, burnout is a serious mental health issue that should not be treated lightly.

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Appendix A

Institutional Review Board Approval Form

WESTERN WASHINGTON UNIVERSITY Office of Research and Sponsored Programs

MEMORANDUM

TO: Arianna Martignetti, Health and Human Development

FROM: Janai Symons, Office of Research and Sponsored Programs *W. Symons*

DATE: 12/06/2016

SUBJECT: Institutional Review Board– Exempt Research Approval

Thank you for submitting a research protocol regarding your human subject research EX17-039 “An Exploration of the Correlation between Burnout and Depression in Collegiate Athletes” for review by the Institutional Review Board (IRB).

Approval: The IRB has reviewed the materials you submitted and found the project described falls into Category #2. Although the research qualifies for exempt status, the investigators still have a responsibility to protect the rights and welfare of their subjects, and are expected to conduct their research in accordance with the ethical principles of Justice, Beneficence, and Respect for Persons, as described in the Belmont Report, as well as with state and local institutional policy. All students and investigators collecting or analyzing data must be qualified and appropriately trained in research methods and responsible conduct of research.

Determination Period: An exempt determination is valid for five years from the date of the determination, as long as the nature of the research activity remains the same. If the involvement of human subjects changes over the course of the study in a way that would increase risks, please submit a revised protocol.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems that may increase the risk to the human subjects or change the category of review, notify the Research Compliance Officer promptly. Any complaints from subjects pertaining to the risk and benefits of the research must be reported to the Research Compliance Officer.

If you have any questions, feel free to email me at janai.symons@wwu.edu.

Appendix B

INFORMED CONSENT

Purpose and Benefit:

Researchers in the field of sport psychology are interested in better understanding athletes' mental health. The purpose of this research study is to better understand college athletes' motivation to participate in their sport as well as gather information on their mood states. The results will hopefully increase our understanding and awareness of athlete mental health in order to inform programs geared to improve athletes' experiences in college sport and enhance their mental health.

REGARDING MY PARTICIPATION IN THIS STUDY, I UNDERSTAND THAT:

- 1) To participate, I must be a current NCAA, NAIA, or NJCAA varsity athlete.
- 2) This research study will involve completion of two brief surveys and filling out a demographics questionnaire. Two example questions from the surveys are: "I feel less concerned about being successful in my sport than I used to," and "I feel that I am useful and needed." The demographics questionnaire will ask for information such as my age and what sport I participate in.
- 3) My participation and information will remain confidential and anonymous. My coach and college/university will not be informed about whether or not I participate in this study.
- 4) My participation will involve approximately 15 minutes.
- 5) Although there are no direct personal benefits from completing this study, my participation can further the knowledge of collegiate athletes' mental health.
- 6) While there are no expected risks to participating, some questions may cause me some discomfort.
- 7) My participation is voluntary and I may choose to withdraw from participating at any time without penalty or loss of benefits.
- 8) This research is being conducted by Arianna Martignetti, a Master's student at Western Washington University, under the supervision of Dr. Jessyca Arthur-Cameselle. Any questions that you have about this study or your participation may be directed to Arianna at martiga@wwu.edu, or Janai Symons, Research Compliance Officer at (360) 650-3082.
- 9) I must be 18 years of age or older to participate in this study.
- 10) If I want a copy of this consent form, I can print this page or contact the researcher at martiga@wwu.edu.

The Human Subjects Review Committee (HSRC) at Western Washington University has approved this study. If you have any questions about your participation or your rights as a research participant, you can contact the Western Washington University HSRC at (360) 650-3220, or Janai Symons, the Research Compliance Officer at (360) 650-3082. If during or after participation in this study you suffer from any adverse effects as a result of participation, please notify the researcher directing the study or the WWU HSRC.

By clicking on this box to continue the survey, I indicate that I have read the above description, I am 18 years of age or older, and I agree to participate in this study.

Appendix C

Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001)

Please read each statement carefully and decide if you ever feel this way about your current sport participation. Your current sport participation includes all the training you have completed during this season. Please indicate how often you have had this feeling or thought this season by checking a number 1 to 5, where 1 means “I almost never feel this way” and 5 means “I feel that way most of the time.” There are no right or wrong answers, so please answer each question as honestly as you can. Please make sure you answer all items.

<u>How often do you feel this way?</u>	Almost Never	Rarely	Sometimes	Frequently	Almost Always
1. I'm accomplishing many worthwhile things in my sport	1	2	3	4	5
2. I feel so tired from my training that I have trouble finding energy to do other things	1	2	3	4	5
3. The effort I spend in my sport would be better spent doing other things	1	2	3	4	5
4. I feel overly tired from my sport participation	1	2	3	4	5
5. I am not achieving much in my sport	1	2	3	4	5
6. I don't care as much about my sport performance as I used to	1	2	3	4	5
7. I am not performing up to my ability in my sport	1	2	3	4	5
8. I feel “wiped out” from my sport	1	2	3	4	5
9. I'm not into my sport like I used to be	1	2	3	4	5
10. I feel physically worn out from my sport	1	2	3	4	5

11. I feel less concerned about being successful in my sport than I used to	1	2	3	4	5
12. I am exhausted by the mental and physical demands of my sport	1	2	3	4	5
13. It seems that no matter what I do, I don't perform as well as I should	1	2	3	4	5
14. I feel successful at my sport	1	2	3	4	5
15. I have negative feelings towards my sport	1	2	3	4	5

Appendix D

Zung Self-Rating Depression Scale (SDS; Zung, 1965)

For each item below, please place a check mark in the column which best describes how often you felt or behaved this way during the past several days

	A Little of the Time	Some of the Time	Good Part of the Time	Most of the Time
1. I feel down-hearted and blue				
2. Morning is when I feel the best				
3. I have crying spells or feel like it				
4. I have trouble sleeping at night				
5. I eat as much as I used to				
6. I still enjoy sex				
7. I notice that I am losing weight				
8. I have trouble with constipation				
9. My heart beats faster than usual				
10. I get tired for no reason				
11. My mind is as clear as it used to be				
12. I find it easy to do the things I used to				
13. I am restless and can't keep still				
14. I feel hopeful about the future				
15. I am more irritable than usual				
16. I find it easy to make decisions				
17. I feel that I am useful and needed				
18. My life is pretty full				

19. I feel that others would be better off if I were dead				
20. I still enjoy the things I used to do				

Appendix E

Follow-up Questions

1. Have you ever experienced what you would consider to be “burnout” from your sport?

Yes ___ No ___

2. If you checked yes, which of the following did you experience when you were “burned out”? Check all that apply/applied.

A depressed mood

Skipped classes

Feeling guilty or worthless

Went through a break-up

Feeling tired or having a loss of energy

Feeling irritable

A change in weight or appetite

Moved to a new place

A loss in concentration

My parents got a divorce

A decrease in interests or pleasure

Got married

A change in my sleep pattern

None of the above

Appendix F
Demographic Information

1. What is your age?

2. What is your gender identity?

Male ___ Female ___ Transgender ___ Prefer not to answer ___

3. What is your ethnicity? Check all that apply.

American Indian or Alaska Native ___

Asian (including Indian subcontinent and Philippines) ___

Black or African American (including Africa and Caribbean) ___

Hispanic or Latino (including Spain) ___

Native Hawaiian and Other Pacific Islander ___

White (including Middle Eastern) ___

Other (please specify) _____

Prefer not to respond ___

4. What is your academic class year?

Freshman ___ Sophomore ___ Junior ___

Senior ___ Graduate school/Post-Bac _____

5. What is your division level of your college or university?

NCAA Division I __ NCAA Division II __ NCAA Division III __

NAIA Division I __ NAIA Division II __

NJCAA Division I __ NJCAA Division II __ NJCAA Division III __

6. Which **varsity** level sport(s) do you play for your **college or university**?

Basketball __

Baseball __

Beach Volleyball __

Bowling __

Competitive Cheer or Dance __

Cross Country __

Equestrian __

Fencing __

Field Hockey __

Football __

Golf __

Gymnastics __

Half Marathon __

Ice Hockey __

Indoor Track and Field __

Lacrosse __

Outdoor Track and Field __

Rifling __

Rowing __

Swimming and Diving __

Skiing __

Soccer __

Softball __

Tennis __

Volleyball ___

Water Polo ___

Wrestling ___

Other (please specify) ___

7. Which part of your sport season are you currently in? (If you responded with more than one sport in the previous question, choose the one you are currently dedicating the most time to).

Off-season ___ Pre-season ___ In-season ___

8. How many **hours**, on average, **per week** are you **currently dedicating** to your sport?
This includes any practices, games, team meetings, conditioning, training, lift sessions, travel etc.

_____ hours

9. If you have any general comments regarding the survey, please write them here.
-

Appendix G

Contact Email

Hello Coach _____,

My name is Arianna Martignetti and I am a graduate student at Western Washington University, in the Sport and Exercise Psychology Master's degree program. I am also a former collegiate softball player. I am conducting a study exploring the motivation and mental health of college athletes and I am currently seeking collegiate athletes to participate in my anonymous online survey study. I would truly appreciate if you would forward this email, or simply the link included below, to your athletes in order for them to participate. Their participation would take around 15 minutes and would involve answering some questions about their motivation for their sport as well as questions about their mood states. The purpose of my study is to learn more about athletes' motivation and mental health experiences in order to potentially inform programs geared to improving athletes' experiences in college sport.

I encourage you to also forward this email to other coaches or athletic personnel who may know athletes interested in being part of my study. Participation in my study is voluntary and all of the athletes' information will remain anonymous and confidential.

You may contact me if you are interested in the results of my study. Please let me know if you have any further questions or comments. I appreciate your time.

Sincerely,

Arianna Martignetti