

Where's the Fire?  
An Exploratory Study of Athlete Burnout in Division III Cross-Country Runners

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## ABSTRACT

The purpose of this exploratory study was to examine associations between psychosocial factors (motivational orientations, perceived stress, depressive symptoms, and athletic identity) and burnout among cross-country runners. Surveys were administered to 182 male and female cross-country runners from five Midwest universities prior to a scheduled practice time. Statistical analyses included Pearson correlation, scale reliability, and multiple linear regressions. Analyses revealed that higher levels of amotivation were related to higher levels of all indices of burnout, while higher levels of external regulation were related to lower levels of a reduced sense of accomplishment. Perceived stress and depressive symptoms were associated with greater levels of burnout, while athletes with a higher athlete identity were related to lower levels of sport devaluation. Results suggest that motivational orientations, stress, depressive symptoms, and athlete identity were related to burnout. Future studies should continue to examine factors related to burnout

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# CHAPTER 1

## REVIEW OF LITERATURE

### **Introduction**

College athletes experience many challenges including the demands of school, financial worries, interpersonal relationships, competing for future employment, and the rigorous demands of training and competing in their sport (Gould & Whitley, 2009). Therefore, it is not surprising that college athletes experience burnout. It is estimated that about 10% of college athletes develop burnout (Lemyre, Hall, & Roberts, 2008). Athlete burnout is comprised of the following three components: Physical and emotional exhaustion; reduced sense of accomplishment; and withdrawal from sport (Raedeke, 1997). When an athlete experiences burnout, not only do they grapple with feelings of fatigue, depression, and loss of identity (Cureton, 2009); they may drop out of their sport entirely (Raedeke, 1997).

Athlete burnout is multifaceted and complex, making it challenging to determine its root cause (Gustafsson, Lundkvist, Podlog, & Lundqvist, 2016). Sports have continued to become more commercialized, with sport specialization and intense training happening at younger ages each year (Gould & Whitley, 2009). It is likely that burnout is higher than the estimated 10% reported in the literature due to the fact that research has not been able to capture the athletes who have already left their sport because of burnout (Lemyre, Hall, & Roberts, 2008). Therefore, it is important for ongoing research to continue examining the antecedents of athlete burnout, so that preventive strategies can be implemented (Kroshus & DeFreese, 2017).

Several theoretical frameworks have concurrently emerged to attempt to explain burnout, including Smith's (1986) cognitive-affective stress model, self-determination



theory (Deci & Ryan, 1985), Coakley's unidimensional identity model (1982), Silva's negative training model (Gould & Whitley, 2009), and Raedeke's commitment perspective (1997). These models provide insight into the processes and factors associated with athlete burnout and help better understand this complex condition.

This review will examine different models of burnout; summarize previous findings of possible antecedents of burnout; identify existing limitations and knowledge gaps within the body of research; and present the aims of the current study conducted with Division III cross- country runners. Burnout can have enormous ramifications for athletes and it is imperative that research continues to be able to better assess and prevent athlete burnout.

### **Theoretical Frameworks Used to Study Athlete Burnout**

**Early research in burnout and the sport commitment perspective.** Burnout was initially studied within the workplace in professions such as nursing and social work (Lavandero, 1981). Eventually, a bulk of burnout research included the coaching profession (Kelley, 1994; Kelley & Gill, 1992; Raedeke, Lunney, & Venables, 2002; Vealey, Udry, Zimmerman, & Soliday, 1992). In the 1980s there was a shift in the study of burnout as sport psychologists recognized a need to modify the research being done in the professional realm with coaches, and adapt it to be applicable to athletes (Cohn, 1990; Raedeke et al., 2002). Then, in the early 1990s, Schmidt and Stein (1991) decided to examine athlete burnout in terms of athlete commitment (Schmidt & Stein, 1991). They wanted to better understand why athletes stay in their sport and why they continue to participate even in the presence of stress. Therefore, these researchers sought to determine the driving forces and differences behind athletes who continued their sport,

those who dropped out, and those who burned out (Raedeke, 1997; Schmidt & Stein, 1991).

Raedeke (1997) chose to expand upon the aforementioned studies as he began his work examining athlete burnout. He wanted to assimilate the previous research and work to establish a definition and a measure for burnout. While there is not a universal definition of burnout given the complexity of the construct, Raedeke's research provided a working definition and a burnout measure that has been widely accepted (Gustafsson, Lundkvist, Podlog, & Lundqvist, 2016; Isoard-Gauthier et al., 2017). Presently, burnout is defined as: Physical and emotional exhaustion, reduced sense of accomplishment, and sport devaluation (Raedeke, 1997). Athletes may complain about being burnt out simply because of a tough training month or because they are experiencing higher levels of academic stress. However, this does not fall into the technical definition of burnout because it does not fulfill the three components of Raedeke's definition; rather it only addresses physical and emotional exhaustion. In order to be classified as burnt out, all three components must be met. There are several terms closely related to burnout that can be confused with burnout including overtraining and over-reaching (Cureton, 2009). These variables refer to aspects of training that create stress and physical fatigue in athletes, yet do not relate to burnout. For example, in order to push the body to greater levels of physicality, coaches often use overreaching with periodization. This is a training philosophy in which the athlete undergoes harder amounts of training, followed by periods of recovery, in order to bump their athletic ceiling higher long-term (Cresswell & Eklund, 2005; Moen, Myhre, Klockner, Gausen, & Sandbakk, 2017). Overtraining syndrome is most similar to burnout because athletes will experience sudden decrements

in performance and will feel negative emotions such as irritability, depression, and demotivation (Cureton, 2009). However, overtraining is different than burnout because overtraining is reversed quickly if the athlete has a period of recovery (Moen et al., 2017).

There is more than one model or theoretical framework that has been used throughout the history of athlete burnout (Coakley, 1992; Schmidt & Stein, 1991; R. E. Smith, 1986). However, more recent research includes the framework used by Raedeke (1997); thus, this review and subsequent study will use Raedeke's definition of burnout. Raedeke's framework is built on a sport commitment framework first proposed by Schmidt and Stein (1991) because he wanted to test whether burnout could be explained using this perspective. This framework posits that an athlete will participate in their sport for reasons involving either sport attraction or sport entrapment. Sport attraction can be described as an athlete who participates in a sport because he or she wants to. Sport entrapment is when the athlete participates in sport because they feel like they have to participate and they feel that they cannot quit (Raedeke, 1997). It is the latter group of athletes who are susceptible to burnout. Therefore, examining burnout from a commitment perspective was useful in trying to ascertain the motivations and reasons why an athlete participates in sport.

Raedeke (1997) sought to build on previous research that had been conducted by Schmidt and Stein (1991) on how sport commitment relates to burnout. He also expanded on research by Coakley (1992) on how social organization can limit personal control and identity development in athletes. Previous research has examined athlete burnout from both a commitment lens (athletes have levels of sport commitment based on rewards and

costs of sport; invested time and energy; and whether there are more attractive alternative options), and a sociological lens (social influences may affect commitment and involvement). After surveying the swimmers, Raedeke used the previous research (Schmidt & Stein, 1991) as a guide to categorize the athletes into four clusters: Malcontented, enthusiastic, obligated, and indifferent. The malcontented group experienced higher levels of sport entrapment, and felt higher social constraints to remain in sport than the enthusiastic group. This supports Raedeke's theory that feelings of entrapment result in higher levels of burnout (Raedeke, 1997). Enthusiastic swimmers reported the highest levels of all four groups in terms of investment, enjoyment, and benefits of the sport, and low levels of cost and attractive alternative. To further this research, Raedeke and Smith (2001) updated the Athlete Burnout Questionnaire (ABQ) to include the three subscales as they are used today: Physical/Emotional Exhaustion, Reduced Sense of Accomplishment, and Sport Devaluation. It is this updated questionnaire that is present in research today. As research grew in popularity on this topic, another theory was frequently used in conjunction with burnout: self-determination theory. The next section will discuss this theory by defining it and providing examples of how it was found in the athlete burnout literature.

**Self-determination theory.** Along with the commitment perspective, self-determination theory (SDT) is the second most common theoretical framework used to examine athlete burnout in the current body of literature (Appleton & Hill, 2012; Cresswell & Eklund, 2005; Holmberg & Sheridan, 2013; Lonsdale, Hodge, & Rose, 2009). SDT is a theoretical framework that incorporates motivation, personality, social development, and psychological health (Deci & Ryan, 1985). According to SDT, there

are three needs that must be met to increase motivation and there is a continuum of motivation. These three needs include: competence, autonomy, and relatedness.

Competence refers to the perception by an individual that their behaviors and interactions within their social environment are effective; autonomy reflects the perception that an individual has the freedom to choose their own thoughts and actions; relatedness represents the perception that an individual is connected to their environment and that he or she experiences a sense of belonging in that environment (Deci & Ryan, 2000; Weiss & Amorose, 2008). To apply this in a sport context, fulfilling these needs means the athlete will be more likely to experience increased motivation and self-satisfaction, and will be at a lower risk of having negative side effects, such as athlete burnout (Deci & Ryan, 2000).

SDT has four mini-theories which include: Cognitive evaluation theory, organismic integration theory, causality orientation theory, and basic needs theory (Weiss & Amorose, 2008). Cognitive evaluation theory (CET) is used to explain how external forces within a social context impact an individual's intrinsic motivation (Deci & Ryan, 2000; Frederick & Ryan, 1995). Intrinsic motivation refers to engaging in an activity or behavior for the satisfaction and pleasure an individual derives from this activity, without trying to gain some external outcome (Deci & Ryan, 1985). CET focuses on the needs for competence and autonomy and how the satisfaction of these needs can enhance intrinsic motivation, while failure to fulfill these needs will ultimately undermine intrinsic motivation (Deci & Ryan, 2000; Weiss & Amorose, 2008).

Organismic integration theory (OIT) examines and defines different types of external motivation along with related types of behavior driven by that motivation (Weiss

& Amorose, 2008). Extrinsic motivation is the opposite of intrinsic motivation in that an activity is performed in order to obtain some separable result (Deci & Ryan, 2000). For example, an individual might run hills for a workout not because they enjoy it, but because they will receive a trip to the ice cream store later on for successfully completing their workout. Extrinsic motivation can be broken down into greater or lesser forms of controlling, non-autonomous behavior. The more controlling and non-autonomous a behavior becomes, the less an individual perceives that they have a choice in performing this behavior, keeping them further from intrinsic motivation (Deci & Ryan, 2000; Weiss & Amorose, 2008).

Motivation can be defined by three broad categories along a continuum:

Amotivation, extrinsic motivation, and intrinsic motivation (Deci & Ryan, 1985).

Amotivation is when the athlete simply lacks motivation and is not invested in the sport.

Extrinsic motivation can be further divided into: External regulation (participating to avoid punishment or receive rewards), introjected regulation (doing the sport to avoid feelings of shame and guilt), identified regulation (participation to obtain benefits they perceive to be important), and integrated regulation (participating because it aligns with their view of themselves; Deci & Ryan, 2000). The third category is intrinsic motivation.

Behaviors within extrinsic motivation that are closer to amotivation are seen as more controlling and less autonomous than extrinsic motivation that is closer to extrinsic motivation. For example, Lonsdale and colleagues' (2009) study revealed how athletes who perceive they are going through the motions of sport without personal, valuable gain, experience lower levels of intrinsic motivation. The results of their study indicated that when the athletes had greater levels of self-determined feelings of competence and

autonomy, they were less likely to experience burnout. So, depending on where an individual falls on this continuum, it is possible to examine how that individual regulates their behavior. Applying this to sport is useful to determine how an athlete internalizes extrinsic motivation and subsequently how their behavior reflects this self-regulation (Deci & Ryan, 1985; Deci & Ryan, 2000).

The third mini-theory of SDT is Causality Orientation Theory (COT). This theory looks at the relatively stable motivational orientations that individuals have as a part of their personality. An individual can have autonomous, controlled, or impersonal motivational orientations that develop over time as a result of their interaction with their environment and of how they regulate their behavior (Deci & Ryan, 1985). An autonomous orientation is behavior regulated by self-chosen goals and interests, meaning that the individual self-selects challenging and interesting activities because they are more intrinsically motivated to engage in them (Weiss & Amorose, 2008). A controlled orientation refers to self-inflicted pressure or other external directors of a behavior. An individual will rely more on external rewards, deadlines, or pressure from others to engage in the activity rather than doing what they personally want to do. An impersonal orientation is similar to amotivation because the individual lacks the desire or will to act in a certain way, and they may experience feelings of being incompetent or helpless (Weiss & Amorose, 2008).

The final mini-theory is Basic Needs Theory (BNT), which incorporates the three needs that SDT suggests should be met for overall well-being of an individual (Deci & Ryan, 2000; Weiss & Amorose, 2008). Again, those needs are autonomy, competence, and relatedness. BNT clarifies how each of these needs relates to social context and

psychological functioning. It acknowledges that each need may be met in different ways in different social contexts; that is, one social context may fulfill all three needs, while another social context may only fulfill one need. This theory does not look at understanding motivational behavior specifically, rather it serves to emphasize the importance of fulfilling the three needs for an individual's well-being (Deci & Ryan, 1985; Deci & Ryan, 2000).

Self-determination theory and its mini-theories are useful to apply to the sport setting with respect to athlete burnout (Deci & Ryan, 2000). This theory can incorporate an athlete's motivational orientation, their behavioral regulation, and their need fulfillment within the sport context, and apply it to research based on athlete burnout. There are several pertinent studies that have utilized self-determination theory to better understand burnout (Cresswell & Eklund, 2005; Holmberg & Sheridan, 2013; Lonsdale et al., 2009).

Lonsdale and colleagues (2009) examined motivational regulations as a mediator in the relationship between satisfaction of psychological needs and athlete burnout. Canadian athletes (n=201) from 51 different sports were surveyed using a cross-sectional design. Results showed that athletes with higher controlled extrinsic motivation scores also had higher levels of burnout scores. In addition, athletes with higher autonomous extrinsic motivation scores had lower levels of burnout scores. Based on the self-determination continuum (Deci & Ryan, 1985), controlled extrinsic motivation refers to introjected regulation, while autonomous extrinsic motivation refers to identified and integrated regulation. These findings suggest that intrinsic motivation is not the only behavioral regulation that can be associated with lower levels of athlete burnout. The



authors propose that an athlete who is motivated to achieve a valued extrinsic outcome (autonomous extrinsic motivation) is less likely to develop burnout than an athlete who is motivated to act upon an external demand to avoid guilt (controlled extrinsic motivation). Therefore, participation to obtain a separable outcome may not lead to athlete burnout if the athlete deems that outcome to hold personal value (Lonsdale et al., 2009).

Cresswell and Eklund (2005) examined motivation and burnout of professional elite rugby players at preseason, midseason, and postseason to assess if burnout changes over time. The authors separated motivation into the three main categories of the self-determination continuum: amotivation, extrinsic motivation, and intrinsic motivation. All types of extrinsic motivation were combined together to represent extrinsic motivation. Using self-determination theory, results demonstrated that higher levels of amotivation and extrinsic motivation were related to higher burnout (Cresswell & Eklund, 2005). Higher levels of amotivation were linked to higher levels of reduced sense of accomplishment and sport devaluation. Higher intrinsic motivation was associated with lower levels of athlete burnout overall. Other factors such as win/loss ratio during the tournament; injury and starting status; position played, and team environment (i.e., positive or negative relationship between players), were related to different stages of burnout over time. For example, injury rate and teams who had a greater number of wins reported greater levels of physical and emotional exhaustion. These findings suggest that burnout can be fluid in nature in relation to current demands and motivation.

Holmberg and Sheridan (2013) found that among 600 DI and DII athletes, higher levels of intrinsic motivation were related to lower levels of athlete burnout. However, this study also found that athletes who had autonomous orientations of extrinsic

motivation actually had lower levels of burnout. This finding indicates that intrinsic motivation is not the only type of motivation that is related to lower levels of burnout. If an athlete perceives that they have a choice in participating in an activity, and if they feel that this participation will lead to a valuable separable outcome (e.g., winning a race because they worked hard), then autonomous extrinsic motivation may help to decrease the risk for athlete burnout. Finally, the authors suggested that the devaluation component of burnout may be more closely linked to self-determination theory than exhaustion because it accounts for the thoughts and emotions an athlete has to contend with, apart from just the physical demands (Holmberg & Sheridan, 2013).

Passion has been found to influence athlete burnout (Appleton & Hill, 2012; Kent et al., 2018; Lainas & Cho, 2017; Martin & Horn, 2013). Passion refers to the strong inclination towards something (such as sport) in which one derives importance, value, and love; investing a great deal of time and energy (Kent et al., 2018). There are two kinds of passion: Harmonious and obsessive (Martin & Horn, 2013). Harmonious passion is an autonomous internalization of enjoyment and value. In athletics, the athlete feels they have control over their participation, that there are no strings attached, and that they are involved simply because they want to be involved, rather than from external pressure (Appleton & Hill, 2012). This type of passion relates to an intrinsic motivational orientation (Deci & Ryan, 1985).

Obsessive passion is a controlled internalization of the sport where the athlete feels pressured to participate (Kent et al., 2018). This may be due to the desire to feel social acceptance, to please coaches or significant others, or to confirm their self-esteem. These athletes feel compelled to participate, thus perceiving that it is out of their control

(Martin & Horn, 2013). Studies have hypothesized that higher levels of obsessive passion lead to higher levels of burnout (Appleton & Hill, 2012; Kent et al., 2018; Martin & Horn, 2013). Results have shown a partial mediation between basic psychological needs and passion.

More specifically, a recent study conducted by Kent and colleagues (2018) found that autonomy or lack thereof mediated the effect of passion on the sport devaluation component of burnout. That is, athletes with obsessive passion exhibited less autonomy and higher levels of burnout. This supported research by Martin and Horn (2013), who found that harmonious passion was negatively associated with all three components of burnout. Obsessive passion served as a positive predictor of athlete burnout, so athletes who tended to be more obsessively passionate were more likely to experience greater levels of physical and emotional exhaustion. Martin and Horn (2013) also concluded that harmonious passion could exhibit certain protective mechanisms for athletes, and that if they manifest this type of passion, they are less likely to develop burnout. Collectively, these studies grounded in SDT demonstrate its usefulness in athlete burnout research. The next section will describe theoretical models relating to stress and how those are used in athlete burnout research.

**Stress-related models.** Models such as R.E. Smith's (1986) cognitive-affective stress model were used to apply the concept of burnout to the sporting world. R.E. Smith (1986) sought to combine the limited knowledge about the physiological and psychological underpinnings of burnout, Thibault and Kelley's (1959) social exchange theory, and his cognitive-affective model of stress (Emerson, 1976; R.E. Smith, 1986). R.E. Smith's model posits that if an athlete perceives the situational demands of sport to

be more than they can handle, their physiological and behavioral responses to these demands ultimately lead to a decrement in performance and a devaluation of sport (Gould & Whitley, 2009; R. E. Smith, 1985; A. L. Smith, Gustafsson, & Hassmen, 2010). One of the criticisms of this model is that it includes a broader framework and can be more challenging to test. However, research has used the cognitive-affective stress model and it has been shown that stress is involved in the burnout process.

Coakley (1992) developed another model named the Unidimensional Identity Development and External Control Model. Coakley claimed that, while stress is a side effect of burnout, what really causes burnout is the sociological structure of sport in today's society and how that can limit an athlete's sense of personal control and identity development (Coakley, 1992). As sport has continued to become more commercialized and competitive, and less recreational, athletes are subjected to greater amounts of pressure at younger ages (Gould & Whitley, 2009). Specializing in a sport early on and undergoing rigorous training where there are minimal levels of personal control could possibly lead to the athlete developing a unidimensional identity.

A final model that addresses stress as it relates to burnout is Silva's Negative Training Stress model (Silva, 1990). This model suggests that the physical training load and volume creates both physical and mental stress, which, left unchecked, can lead to burnout over time. Silva (1990) asserts that, while athletes need to experience periods of higher intensity and training volume, burnout can develop if they never get a chance to recover from physical demands. There are relatively few studies that examined physical training as the only cause for burnout because most researchers agree that the manifestation of athlete burnout is multifaceted (Cureton, 2009; Moen, Federici, &

Skaalvik, 2014; Smith A. L., 2010). Instead, current research focuses both on the physical training component as well as on the cognitive angle of burnout, which includes variables such as motivation, identity, societal constructs, and personality traits (Gustafsson, Sagar, & Stenling, 2017; Kent, Kingston, & Paradis, 2018; Moen, Federici, & Skaalvik, 2014). Several studies are highlighted next to illustrate the use of both of these models in research.

Athletes experience obstacles that can include the stress of balancing school with sport, dealing with an injury, or experiencing performance setbacks. Some research has examined an athlete's ability to cope with adversity and their degree of resilience as it relates to burnout. It has been hypothesized that if an athlete cannot cope in a healthy manner, and if they do not have high levels of resilience, these factors can lead to a greater risk of developing burnout (Lu, Lee, Chang, Chou, Hsu... & Gill, 2016; Pacewicz, Gotwals, & Blanton, 2018). Pacewicz and colleagues (2018) examined whether burnout was mediated by coping and whether an athlete's perfectionism profile led to differences in coping abilities. They classified coping into the following three categories: Problem-focused, emotion-focused, and avoidant coping. Problem-focused coping refers to directly facing a challenge and being able to change their appraisal of this challenge. Emotion-focused coping helps an athlete regulate their emotions as they address a challenge, while avoidant coping simply means ignoring the challenge. The results of these studies maintain that athletes who use avoidant coping skills are more susceptible to developing burnout. While resilience could be seen as a protective mechanism against developing burnout, lower levels of resilience indicate a greater risk for developing burnout (Pacewicz et al. 2018).

Perfectionism is another trait that can manifest in a positive or negative manner. In sport, perfectionism occurs when an athlete has unrealistic goals and is overly critical of their performance (Lainas & Cho, 2017). Perfectionism can be self-oriented (where the criticism is self-imposed and focused internally) or socially prescribed (the athlete is driven by their desire to obtain acceptance from someone else by meeting their unrealistic expectations). Both have been directly and indirectly linked to burnout (Appleton & Hill, 2012).

Perfectionism is categorized into healthy and unhealthy. Perfectionistic strivings are considered healthy. An athlete with high levels of self-esteem and self-confidence tends to have perfectionistic strivings because their desire to achieve is supported by positivity (Lainas & Cho, 2017). Perfectionistic concerns are unhealthy because they are driven by fear of failure and receiving negative feedback as a result of making mistakes (Gustafsson et al., 2017; Lainas & Cho, 2017). Based on the perfectionism profile an athlete exhibits, assumptions can be made about the risk of developing burnout (Pacewicz et al., 2018). Additionally, motivation is a strong influence between perfectionism and athlete burnout (Appleton & Hill, 2012) because when an athlete exhibits amotivation or non-self-controlled perfectionism, and when they tend to have perfectionistic concerns, they are at a greater risk for developing athlete burnout (Appleton & Hill, 2012; Lainas & Cho, 2017).

Influence from significant others can contribute to stress and, potentially, burnout in athletes. When an athlete's expectations of success align with their parent's expectations, a child may develop higher levels of self-efficacy, perform well in their sport, and be less susceptible to burnout (Sorkkila, Aunola, & Ryba., 2017). However,

undue pressure from parents can lead to self-doubt (Gustafsson et al., 2017), obsessive perfectionistic strivings (Pacewicz et al., 2018), or decreased intrinsic motivation (Sorkkila et al., 2017). Coach and teammate peer influences can also lead to athlete burnout or act as protective barriers (Smith, A. L. et al., 2010). For instance, when teammates compete against one another to establish a hierarchy of skill level, or when the team frequently deals with team conflict, athletes are more likely to develop negative associations with that sport (Smith, A. L. et al., 2010). A coach who fosters an ego-involved climate and does not allow input from their athletes also contributes to perceptions of stress. An athlete who is struggling to perform well may perceive that the expectations from the coach to excel and to win at all costs is overwhelming, leading to increased stress and devaluation of the sport (Smith, 1986).

## **Summary**

Researchers have used different theoretical frameworks such as a commitment perspective, self-determination theory, and cognitive-affective theory to examine athlete burnout (Gustafsson et al., 2016). Athlete burnout is multifaceted, which makes it challenging to develop a universal definition (Isoaurd-Gauthier et al., 2017). The studies were grounded in theory, with the most common studies utilizing self-determination theory (Appleton & Hill, 2011; Cresswell & Eklund, 2005; Holmberg & Sheridan, 2013; Lemyre et al., 2008; Lonsdale et al., 2009), the cognitive-affective stress model (Lu et al., 2016; Smith et al., 2010; Sorkkila et al., 2017), and a commitment perspective (Raedeke, 1997). These studies found that athletes who experience higher levels of intrinsic motivation are less likely to experience burnout, and that athletes who experience greater levels of stress and perceive that they are entrapped in their sport are more likely to

experience burnout. The next section will address some of the common gaps found in the existing body of athlete burnout literature.

### **Gaps in Research on Athlete Burnout**

The knowledge base on athlete burnout has rapidly increased over the last decade. However, studies are still needed that combine theoretical frameworks to improve the understanding of burnout across different sports. For example, studies have not specifically examined only the sport of cross-country. Running is a highly demanding sport, yet studies that have included running have only examined cross-country as one of several sports examined (Judge et al., 2012; Kent et al., 2018; Sorkkila et al., 2017). Additionally, cross-country and track are often lumped together to represent one sport in studies that examine several different sports, so it is difficult to determine how many true distance athletes are being represented in the samples.

Running is different from other sports. For example, runners spend a significant amount of time alone – whether that means going for a run alone or completing a track workout alone with individual pacing times – whereas other team sports generally spend more time together doing the same workout simultaneously (Moen et al., 2014). This may impact the mental processes a runner experiences, as reliance on self-performance within a team sport may undermine motivational orientations (Deci & Ryan, 1985). Differences such as these demonstrate that there is a general lack of knowledge on the prevalence and antecedents of running burnout. Consequently, there is a need to conduct an exploratory study examining cross-country runners.



## **Purpose and Hypotheses**

### **Study Purpose**

The purpose of this descriptive, exploratory study is to assess psychosocial correlates of athlete burnout among collegiate runners. This study aims to replicate past studies and extend findings to a runner population. Several factors that are potentially related to burnout will be examined including motivational orientations, perceived stress, depressive symptoms, and athletic identity.

The goal of this study is to examine associations between burnout (Physical/Emotional Exhaustion, Reduced Sense of Accomplishment, and Sport Devaluation), and motivational orientations, athlete identity, depressive symptoms, and perceived stress.

### **Hypotheses:**

**Hypothesis 1.** Athletes who score higher on extrinsic motivational orientations (identified, introjected, and external regulation motivational orientations) and amotivation; perceived stress and depressive symptoms; and have a unidimensional athletic identity; will score higher on the physical/emotional subscale of burnout.

**Hypothesis 2.** Athletes who score higher on extrinsic motivational orientations (identified, introjected, and external regulation motivational orientations) and amotivation; perceived stress and depressive symptoms; and have a unidimensional athletic identity; will score higher on the reduced sense of accomplishment subscale of burnout.

**Hypothesis 3.** Athletes who score higher on extrinsic motivational orientations (identified, introjected, and external regulation motivational orientations) and

amotivation; perceived stress and depressive symptoms; and have a unidimensional athletic identity; will score higher on the sport devaluation subscale of burnout.

## CHAPTER 2

### METHOD

#### Participants

A convenience sample of 182 athletes out of a possible 182 athletes completed the survey, which was administered in September and October of 2018. Survey administration was conducted after the start of the season and prior to championship meets. The sample included 102 females (56%) and 80 males (44%). These Division III collegiate athletes were mostly Caucasian and ranged in age from 18-22 ( $M = 19.63$ ;  $SD = 1.213$ ). Athletes ran an average of 36.74 miles per week, 54.4% of the sample self-reported experiencing burnout previously, and 45.6% reported having been overtrained in the past. Table 1 summarizes participants' race and ethnicity.

Table 1

*Race and Ethnicity(N=182)*

| Demographics                           | Number | Percentage |
|--|--------|------------|
| Race                                   |        |            |
| American Indian/Alaskan Native         | 1      | 0.5        |
| Asian                                  | 3      | 1.6        |
| Native Hawaiian/Other Pacific Islander | 0      | 0.0        |
| Black or African American              | 2      | 1.1        |
| Caucasian                              | 174    | 95.6       |
| Other                                  | 2      | 1.1        |
| Ethnicity                              |        |            |
| Hispanic or Latino                     | 1      | 0.5        |
| Not Hispanic or Latino                 | 181    | 99.5       |

## Measures

Participants completed several questionnaires related to sport identity; motivation in sport; perceived stress, anxiety, and depression in life and sport; behavioral regulation in sport; and athlete burnout in sport.

**Demographics and Sport History.** The demographic questionnaire (see Appendix C) was developed by the researcher and the primary advisor. It assessed gender, age, race/ethnicity, training load, and injury history. Participants indicated their weekly training mileage (e.g., 60 miles per week), described any current cross-training they were participating in, and reported any previous sport related injuries. They completed a table that listed the sports that they had participated in during the past 10 years, how many years they did each sport, if the sport was competitive or not, and how many hours per week on average were devoted to that sport. To gauge their understanding of burnout, participants answered yes or no to the following question, “Have you ever been overtrained, and if so, please specify.” Answers to these questions were averaged using SPSS software to report means and standard deviations.

**Sport Motivation Scale (SMS)** The 28-item Sport Motivation Scale (see Appendix D) was administered to examine athlete motivation based on the self-determined motivation continuum (Pelletier et al., 1995). Examples of each category among the continuum include the following: Amotivation (“It is not clear to me anymore why I participate in my sport”); external regulation (“I participate in my sport to show others how good I am”); introjected regulation (“I must do my sport to feel good about myself”); identified regulation (“In my opinion, sport is one of the best ways to meet

people”); and intrinsic motivation (“I think sport is interesting”; Pelletier et al., 1995).

Pelletier et al. (1995) note that integrated regulation is not assessed by this measure. Each item is based on a seven-point Likert scale and participants indicate the extent to which each statement resonates with why they participate in their sport. Answers can range from one (does not correspond at all) to seven (corresponds exactly). There are seven subscales with four questions in each, and these questions are averaged to provide a total score for each subscale. Previous research has shown this measure to be valid and reliable (Pelletier et al., 1995).

#### **Athlete Identity Measurement Scale (AIMS).** The Athlete Identity

Measurement Scale (see Appendix E) was used to assess how an athlete derives their identity (Brewer, Van Raalte, & Linder, 1993). If an athlete has a unidimensional identity (they have no other activities or interests apart from their sport), it can influence how they view themselves if they are unable or unwilling to continue with their sport. This measure has seven items on a seven-point Likert scale which ranges from one (strongly disagree) to seven (strongly agree). Participants rate the degree to which they agree with each statement. Sample statements include: “I need to participate in sport in order to feel good about myself,” and “I would be very depressed if I were injured and could not compete in my sport.” Brewer and Cornelius (2001) updated the AIMS by creating three subscales and eliminating some of the questions. Items one, two, and three correspond to social identity; items four and five correspond to exclusivity; and items eight and ten correspond to negative affectivity. Items six, seven, and nine from the original scale were not used in creating these subscales. Therefore, in this study, while the original AIMS

measure was used for data collection, the updated subscales (Brewer & Cornelius, 2001) were used for data analysis.

**Patient Health Questionnaire-9 (PHQ-9).** The PHQ-9 (see Appendix F) was used to assess depressive symptoms (Spitzer, Williams, & Kroenke, 2001). This measure was included to gain a better understanding of athletes' mental and emotional status during their sport season in conjunction with Specific Aim 2. The PHQ-9 is a nine-item self-report inventory that includes a zero to three Likert-type scale. Participants indicated how often in the past two weeks they had experienced each of the nine symptoms listed. Zero indicates not at all, one indicates several days, two indicates more than half the days, and three indicates nearly every day. Participants then indicated how these problems interfere with their overall functioning (not difficult at all, somewhat difficult, very difficult, or extremely difficult). The PHQ-9 has been found to have high validity and reliability (APA, 2019; Zhang et al., 2013).

**Perceived Stress Scale.** The Perceived Stress Scale (see Appendix G) is often used in a medical or counseling setting because it can help assess psychological stress when working with someone experiencing anxiety or depression. It has 14 items that are rated on a Likert-type scale from zero to four, and all items are summed for a total score. Participants indicate how often they have felt or thought a certain way in the past month, with zero indicating never, one indicating almost never, two indicating sometimes, three indicating fairly often, and four indicating very often. This measure was included to examine athletes' level of perceived stress during their sport season.

**Athlete Burnout Questionnaire (ABQ).** The Athlete Burnout Questionnaire (see Appendix H) assessed burnout in athletes (Raedeke & Smith, 2001). This measure has 15 items and is divided into three subscales that measure the following three components of burnout: Emotional and physical exhaustion (five items), reduced sense of accomplishment (five items), and sport devaluation (five items). Participants respond to each item based on how often they agree with the statement. Responses are measured on a five-point Likert scale, with one corresponding to almost never; two corresponding to rarely; three corresponding to sometimes; four corresponding to frequently; and five corresponding to almost always. Subscales are averaged and higher scores indicate a greater risk for that component of burnout.

### **Procedure**

In the summer of 2018, coaches from six NCAA DIII universities in the upper Midwest were contacted via email. Five of the six schools agreed to participate in the study. Permission was obtained from the coaches to administer surveys onsite. Coaches determined the survey administration date based on what was convenient for their team training schedule. The study was approved by the Institutional Review Board prior to survey administration.

At each university, participants were told that this study was looking at burnout in Division III cross-country athletes and that participation was voluntary. Since responses were anonymous, participants gave consent by checking a box on a consent form at the front of the survey packet. Participation was voluntary and participants were given as much time as necessary to complete the survey. After completing the survey, participants returned the packets to a sealed envelope to protect anonymity, and were asked not to

discuss any questions or answers with each other or with their coaches.

The survey administration took place before the start of practice, and every athlete who was in attendance for practice took the survey. No participants declined to take the survey. There were no exclusion criteria; every present member of the team completed the survey voluntarily. Inclusion criteria stated that a participant was eligible for the survey if they were a current member of the competition roster for the fall 2018 cross-country season. Participants took about 20 minutes on average to complete the survey, at which point they remained in the meeting space until all participants had completed the survey.

### **Data Analysis**

Descriptive statistics were calculated including means, standard deviations, and ranges for the scales used in the survey. In addition, Cronbach's alpha was calculated to test for scale reliability. Pearson correlations were used to test for multicollinearity. Finally, multiple regression analyses were conducted, using the three subscales of athlete burnout as the dependent variable, and motivational orientations, perceived stress, depressive symptoms, and athletic identity as the predictor variables.



## CHAPTER 3

### RESULTS

First, descriptive statistics were obtained for all variables. Pearson correlations indicated no multicollinearity between the scales. The means, standard deviations, and range of scores are summarized in Table 2.

Table 2

*Means, Standard Deviations, and Ranges for Scales*

| Variable                        | Mean  | Std. Deviation | Range |
|---------------------------------|-------|----------------|-------|
| Physical/Emotional Exhaustion   | 2.28  | 0.78           | 1-5   |
| Reduced Sense of Accomplishment | 2.33  | 0.85           | 1-5   |
| Sport Devaluation               | 1.94  | 0.81           | 1-5   |
| Social Identity                 | 6.30  | 0.90           | 1-7   |
| Exclusivity                     | 3.86  | 1.50           | 1-7   |
| Negative Affect                 | 4.70  | 1.41           | 1-7   |
| Depressive Symptoms             | 4.12  | 4.92           | 0-27  |
| Perceived Stress                | 22.78 | 7.09           | 0-56  |
| Amotivation                     | 2.03  | 1.16           | 0-7   |
| External Regulation             | 3.88  | 1.29           | 0-7   |
| Identified                      | 5.40  | 1.03           | 0-7   |
| Introjected                     | 3.87  | 1.37           | 0-7   |

Cronbach's alpha was calculated for each questionnaire to examine internal consistency reliability. All measures achieved adequate alpha values  $> 0.7$  except for identified motivational orientation, which was removed from further analysis (see Table 3).

Table 3

*Scale Reliabilities*

| Variable                        | Cronbach's Alpha |
|---------------------------------|------------------|
| Physical/Emotional Exhaustion   | .89              |
| Reduced Sense of Accomplishment | .85              |
| Sport Devaluation               | .84              |
| Social Identity                 | .74              |
| Exclusivity                     | .84              |
| Negative Affectivity            | .60*             |
| Depressive Symptoms             | .88              |
| Perceived Stress                | .82              |
| Amotivation                     | .83              |
| External Regulation             | .73              |
| Identified                      | .65*             |
| Introjected                     | .75              |

*Notes.* Asterisk (\*) refers to subscales with a scale reliability less than 0.7

Table 4 summarizes the correlations between the scales and subscales.

Table 4

*Pearson Correlations for Variables (N=182)*

| Variable        | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8   | 9   | 10 |
|-----------------|------|------|------|------|------|------|------|-----|-----|----|
| 1. Introjected  | --   |      |      |      |      |      |      |     |     |    |
| 2. ExtReg       | .56  |      |      |      |      |      |      |     |     |    |
| 3. Amotivation  | .17  | .08  |      |      |      |      |      |     |     |    |
| 4. Dep. Symp    | .12  | .11  | .30  |      |      |      |      |     |     |    |
| 5. Perc. Stress | .15  | .05  | .35  | .41  |      |      |      |     |     |    |
| 6. SocIdentity  | -.05 | .09  | -.39 | -.15 | -.19 |      |      |     |     |    |
| 7. Exclusivity  | .27  | .28  | -.22 | .01  | .01  | .27  |      |     |     |    |
| 8. Exhaustion   | .06  | -.02 | .43  | .34  | .42  | -.29 | -.11 |     |     |    |
| 9. ReducAccom   | .13  | -.05 | .62  | .37  | .42  | -.33 | -.21 | .49 |     |    |
| 10. Devaluation | .09  | .00  | .64  | .24  | .37  | -.42 | -.33 | .52 | .61 |    |

*Notes.* SMS subscales are Introjected, External Regulation (ExtReg), and Amotivation. Dep. Symp is Depressive Symptoms, Perc. Stress is Perceived Stress. AIMS subscales are Social Identity (SocIdentity), and Exclusivity. ABQ subscales are Physical/Emotional Exhaustion, Reduced Sense of Accomplishment (ReducAccom), and Sport Devaluation (Devaluation).

The first multiple regression analysis included physical/emotional exhaustion as the dependent variable. The analysis statistically was significant,  $R^2 = .30$ ,  $p < .05$ . Higher scores on perceived stress, depressive symptoms and amotivation were related to higher

physical/emotional levels of exhaustion (see Table 5). Runners who reported higher stress levels, more depressive symptoms, and lack of motivation for running indicated greater exhaustion for burnout.

Table 5

*Multiple Regression Analysis for Physical/Emotional Exhaustion*

| Variable            | Beta  | SE   | t-value | Sig.  |
|---------------------|-------|------|---------|-------|
| Introjected         | -.007 | .045 | -0.094  | .925  |
| Ext. Regulation     | -.047 | .047 | -0.603  | .548  |
| Amotivation         | .253  | .051 | 3.346   | .001* |
| Depressive Symptoms | .147  | .011 | 2.078   | .039* |
| Perceived Stress    | .253  | .008 | 3.500   | .001* |
| Social Identity     | -.121 | .062 | -1.709  | .089  |
| Exclusivity         | -.018 | .037 | -0.260  | .795  |

*Notes.* (\*) denotes significant findings when  $p < 0.05$ .

The second multiple regression analysis included reduced sense of accomplishment as the dependent variable. The analysis statistically was significant,  $R^2 = 0.47$ ,  $p < .05$ . Higher scores on perceived stress, depressive symptoms, and amotivation were related to higher levels of reduced sense of accomplishment. In addition, higher scores on external regulation were related to lower levels of reduced sense of accomplishment (see Table 6). Runners who reported higher stress levels, more depressive symptoms, and lack of motivation for running indicated greater reduced sense of accomplishment, while runners who reported higher externally regulated motivational orientations reported less of a reduced sense of accomplishment.

Table 6

*Multiple Regression Analysis for Reduced Sense of Accomplishment*

| Variable            | Beta  | SE   | t-value | Sig.  |
|---------------------|-------|------|---------|-------|
| Introjected         | .123  | .043 | 1.800   | .074  |
| Ext. Regulation     | -.150 | .045 | -2.214  | .028* |
| Amotivation         | .465  | .048 | 7.115   | .001* |
| Depressive Symptoms | .155  | .011 | 2.531   | .012* |
| Perceived Stress    | .176  | .008 | 2.813   | .005* |
| Social Identity     | -.048 | .058 | -0.786  | .433  |
| Exclusivity         | -.090 | .035 | -1.474  | .142  |

Notes. (\*) denotes significant findings when  $p < 0.05$ .

The third multiple regression analysis included sport devaluation as the dependent variable. The analysis statistically was significant,  $R^2 = 0.49$ ,  $p < .05$ . Higher scores on perceived stress and amotivation were related to higher levels of reduced sense of accomplishment. In addition, higher scores on social identity and exclusivity were related to lower levels of sport devaluation (see Table 7). Runners who reported higher levels of stress and lack of motivation for running indicated greater sport devaluation, while runners who reported stronger athletic identities indicated less sport devaluation, which was an unexpected finding.

Table 7

*Multiple Regression Analysis for Sport Devaluation*

| Variable            | Beta  | SE   | t-value | Sig.  |
|---------------------|-------|------|---------|-------|
| Introjected         | .041  | .040 | 0.610   | .543  |
| Ext. Regulation     | .003  | .042 | 0.052   | .959  |
| Amotivation         | .462  | .045 | 7.175   | .001* |
| Depressive Symptoms | .002  | .010 | 0.041   | .967  |
| Perceived Stress    | .173  | .007 | 2.807   | .006* |
| Social Identity     | -.156 | .055 | -2.574  | .011* |
| Exclusivity         | -.199 | .033 | -3.282  | .001* |

Notes. (\*) denotes significant findings when  $p < 0.05$ .

## **CHAPTER 4**

### **DISCUSSION**

The purpose of this exploratory study was to examine associations between psychosocial factors (motivation, perceived stress, depressive symptoms, and athletic identity) and burnout among Division III cross-country runner. This was accomplished by conducting multiple linear regression analyses examining the relationship between psychosocial factors and each of the subscales of athlete burnout (physical/emotional exhaustion, reduced sense of accomplishment, and sport devaluation). Support for the three hypotheses will be discussed followed by strengths and limitations of the current study. Finally, practical implications and potential future research will be summarized.

#### **Aim 1: Relationship between Psychosocial Variables and Physical/Emotional Exhaustion**

Athletes who had higher levels of amotivation, stress, and depressive symptoms also reported higher levels of physical/emotional exhaustion. These findings are consistent with R.E. Smith's (1986) Cognitive-affective model. An athlete experiencing chronic fatigue and symptoms of depression will likely also experience a lack of motivation to continue to do the activity that is creating this exhaustion (Cureton, 2009). Athletes who are training hard for their sport may experience physical tiredness that, if unchecked, can lead to other physiological consequences, such as irritability, depressive symptoms, compromised immunity, and trouble sleeping (Cureton, 2009). Consequently, the findings regarding depressive symptoms and amotivation are consistent with previous research. For example, Raedeke (1997) surveyed swimmers and found that those who were less motivated to continue participating in their sport were more susceptible to

burnout. The swimmers who were dissatisfied with their participation in sport were also experiencing greater levels of stress/depressive symptoms. Therefore, in this study, it could be suggested that cross-country runners who are chronically fatigued and physically under-recovered, and who are lacking motivation to continue to participate in sport, may be more susceptible to athlete burnout. However, it is important to note that despite statistical significance, the regression coefficients for stress, depressive symptoms, and amotivation were relatively low, which suggests a weak relationship with exhaustion. Additionally, the mean scores for these variables were below the midpoint indicating low levels of depressive symptoms, stress, and amotivation for most of the participants. Therefore, additional research is needed to better understand the relationship between stress, depressive symptoms, motivation, and exhaustion.

The lack of association between introjected motivation and physical/emotional exhaustion could be due to the fact that this type of motivation is closer to intrinsic motivation on the motivation continuum (Deci & Ryan, 1985). Based on previous claims about motivation, athletes who are intrinsically motivated are less susceptible to burnout (Kent et al., 2018; Kroshus & De Freese, 2017; Sheridan & Holmberg, 2013). In addition, SDT proposes that fulfilling one's basic needs promotes self-satisfaction as well as heightened motivation (Deci & Ryan, 1985). It could be suggested that the participants who scored higher on integrated motivation feel that they have more autonomy over their training, that they are competent in their abilities and current performance levels, and their training has meaning and value. If so, it is not surprising that these feelings could act as a protection against the physical/emotional component of burnout (Appleton & Hill, 2012; Deci & Ryan, 1985; Raedeke, 1997).

Cresswell and Eklund (2005) observed professional rugby players over the course of 12 weeks during their season, assessing levels of motivation in increments during the 12 weeks. Their results revealed that players with more intrinsic motivation had significantly lower levels of burnout, and that the manifestation of burnout itself was fluid across the three time points of measurement. This suggests that athlete burnout may present itself in different magnitudes during the course of a season. It is possible that athletes at the beginning of the season may feel more mentally and physically fresh. Additionally, a grueling period of training and potential setbacks may result in a stronger degree of burnout. The current study assessed cross-country runners during the first half of their season to allow for time to adjust to training, and to prevent any end of season exhaustion from impacting the results. Self-determined motivation appears to be a strong predictor of athlete burnout and therefore, it is useful to monitor self-determined motivation among cross-country athletes (Cresswell & Eklund, 2005; Holmberg & Sheridan, 2013).

### **Aim 2: Relationship between Psychosocial Variables and Reduced Sense of Accomplishment**

Athletes who had higher levels of amotivation and greater levels of stress and depression reported higher levels of a reduced sense of accomplishment, and participants reporting higher levels of external regulation experienced lower levels of a reduced sense of accomplishment. Perceived stress, depression, and external regulation were weakly related to a reduced sense of accomplishment despite statistical significance. However, amotivation was moderately related to a reduced sense of accomplishment. Means for these variables were below the midpoint indicating low scores for most participants.

The finding that higher scores of external regulation were related to lower scores on the reduced sense of accomplishment subscale of athlete burnout was unexpected. Under the organismic integration mini-theory of SDT (Deci & Ryan, 1985), on the motivation orientation continuum, external regulation is closest to amotivation and is considered to be non-self-determined. This would suggest that an athlete with this type of motivational orientation would be more likely to experience burnout because research has found that lower levels of perceived autonomy is associated with higher rates of burnout (Frederick & Ryan, 1995). However, there is research to support the finding in the current study. Cresswell and Eklund's (2005) study of rugby players also found that extrinsic motivation was negatively associated with the reduced sense of accomplishment subscale. The authors concluded that extrinsic motivation and external rewards could be perceived as helping an athlete to meet their basic needs as long as the athlete interprets the external reward as a positive reinforcement for their sense of competence.

According to self-determination theory (Deci & Ryan, 1985), individuals need to fulfill three needs to achieve a sense of well-being: competence, relatedness, and autonomy. To apply this to the current study, it could be suggested that the athletes in this sample may not be able to meet these needs because amotivation was moderately significant across all three subscales of burnout. Consistent with previous research (Deci & Ryan, 2000), these results suggest that athletes who lack motivation are more susceptible to burnout, and that some types of extrinsic motivational orientations may also play a role in athlete burnout. Holmberg and Sheridan (2013) report that, after surveying 600 collegiate athletes, self-determined motivation was a strong predictor of athlete burnout. This meant that higher levels of self-determined motivation, such as



intrinsic motivation, would indicate a lower chance of burnout. Results from the current study suggest that cross-country athletes rely heavily on intrinsic and extrinsic forms of motivation to train throughout their season. Because cross-country training is all year, athletes who scored higher on amotivation may be at higher risk for developing burnout, and may already experience exhaustion, reduced sense of accomplishment, and sport devaluation.

Finally, the basic need of relatedness may not be fulfilled if an athlete is experiencing disinterest or lack of motivation in their sport. Furthermore, if the team environment is perceived to have an ego-oriented environment where perfection in performance is expected, an athlete may lose their sense of relatedness when comparing themselves to their teammates (Appleton & Hill, 2012). From a commitment perspective, an athlete may perceive their teammates are happy and excited to keep training and being involved in sport. Their teammates may appear to feel that the activities they do not get to do because of the demands of their sport is not a problem (Raedeke, 1997). The athlete experiencing burnout may sense this disparity between their feelings of entrapment and decreased motivation, and their teammates' feelings of contentment (A. L. Smith et al., 2010; Sorkkila et al., 2016).

Research examining external factors of an athlete's environment have found that enough positive reinforcement from significant others (Smith et al., 2010) as well as a motivation-oriented climate (Martin & Horn, 2013), could stimulate rather than undermine an athlete's motivation. It could be suggested that the study sample participants experience a positive teammate and coach environment, and that the feelings of relatedness and belonging they experience as a member of their team are helpful in

lowering their risk of burnout. Therefore, these external factors could serve to motivate the athletes to perpetuate those need fulfillments (Deci & Ryan, 1985), even when experiencing personal letdown, resulting in a lower amount of reduced sense of accomplishment. In addition, research examining gender differences among collegiate athletes found that men and women can use extrinsic motivation in a positive manner, such that external rewards spur them to continue striving for achievement (Judge et al., 2012).

### **Aim 3: Relationship between Psychosocial Variables and Sport Devaluation**

Participants who reported greater levels of perceived stress and amotivation also reported greater levels of sport devaluation. In addition, a stronger athletic identity in the form of both social identity and exclusivity was associated with lower sport devaluation. Similar to the previous findings, the relationship between amotivation and sport devaluation was moderate but low for the other three findings. Additionally, the means were below the midpoint indicating limited variability between the participants. Therefore, conclusions should be interpreted with caution.

These findings support previous research findings that suggest that both stress and depression are related to higher levels of burnout (Judge et al., 2012). Gustafsson and colleagues (2017) examined how fear of failure and chronic psychological stress related to burnout in high-level athletes, and found that both factors strongly indicated a greater risk for developing burnout.

Fear of failure can create additional stress for athletes (Judge et al., 2012), and this constant stress and co-occurring depressive symptoms they experience could manifest in greater risk for burnout. One study examining a school and sport with respect

to burnout in both domains (Sorkkila et al., 2017) found that athletes who experienced high levels of burnout in sport typically had lower levels of burnout in school and vice-versa. This finding is relevant to the current study because it could be possible that cross-country runners are coping well with high levels of stress in school, but then do not have the capacity to cope with the demands of training in their sport (Pacewicz et al., 2018), which could then lead to greater feelings of depression. This would reflect the finding that perceived stress and depressive symptoms were related to higher burnout.

Regarding the moderate association between higher levels of amotivation and sport devaluation, it is possible to make conjectures with self-determination theory combined with the commitment perspective. When an athlete feels entrapped (Raedeke, 1997), this may result in a loss of their sense of autonomy (Deci & Ryan, 1985; Lonsdale et al., 2009). If they feel that they do not have the option of quitting and that they do not have control over their extracurricular choices (including how they choose to exercise), they may also feel that they lack autonomy. Not having this basic need fulfilled could lead to a decrease in motivation levels. Athletes may start struggling with low levels of intrinsic motivation, which is needed to continue training and competing. When considering high levels of stress, motivation levels may decrease further, especially if the athlete feels entrapped and unable to make autonomous decisions about their training (Deci & Ryan, 1985; Raedeke, 1997).

The finding that a strong sense of athletic identity was related to lower levels of sport devaluation is inconsistent with Coakley's (1992) model of unidimensional identity development and external control model. Coakley's (1992) model suggested that a unidimensional identity in which the athlete only views him or herself as an athlete, can

lead to higher rates of burnout. He contended that the sociological construct of sport, and how an athlete develops their athletic identity is related to whether the athlete feels he or she has control over sport participation, and how that sport is valued within the societal construct. However, there is research to suggest that a unidimensional identity may not follow Coakley's (1992) model explicitly.

Research conducted by Gabana and colleagues (2017) suggested that athletes who experience satisfaction in themselves and in their sport are less likely to experience burnout. When athletes identified strongly with their role as an athlete and were happy with how sport impacted their lives, they experienced lower levels of burnout. This intervention study focused on incorporating gratitude into athletes' daily practice, and when athletes experienced more gratitude and fulfilled their need for self-satisfaction, they were at lower risk for burnout (Gabana et al., 2017).

Results from the current study suggest that athletes who have a high athletic self-identity may not be at high risk for burnout. According to Raedeke's (1997) definition of burnout, an athlete must be experiencing all three components of burnout in order to be classified as burned out. The findings for this study seem to suggest, then, that a unidimensional identity wrapped around sport does not necessarily put an athlete at higher risk for developing burnout.

While the findings from this study are in opposition to this model, it could be that an athlete who is deeply rooted in their self-identity as an athlete places high value on their sport. Martin and Horn (2013) found that female athletes who demonstrated high levels of passion for their sport and were intrinsically motivated to continue their participation were less likely to experience burnout. Therefore, it could be suggested that

in the current study, the athletes who had strong athletic identities were also passionate about cross-country and placed personal value in participation, thus protecting them from experiencing sport devaluation.

### **Strengths of study design**

This study had several strengths. First, previous studies did not solely examine cross-country athletes and instead combined cross-country with other sports (Gustafsson et al., 2017). Second, previous research has recommended that studies done on athlete burnout should utilize more than one construct related to theories to examine possible correlates of burnout (Lemyre et al., 2008). The current study addressed this recommendation by using surveys grounded in several theoretical frameworks such as Self-Determination Theory (Deci & Ryan, 1985). Combined with the definition of burnout proposed by Raedeke and Smith's (2001) Athlete Burnout Questionnaire, potential associations with burnout were explored. Third, surveys were conducted during the season, which is ideal for several reasons. Specifically, the timing provided freshmen time to adjust to a new coach's training method and provided experience with training and competitions prior to the season. Additionally, the survey was not administered at the end of the season when most athletes are fatigued from the training demands of the season (Cresswell & Eklund, 2005). Finally, every athlete who was asked to participate chose to participate in the study, which limited bias. Consequently, the study included an adequate sample size.

## **Study limitations**

There are several limitations related to this study. The study sample demographics were not diverse. Specifically, 95% of the study population was Caucasian. Second, some of the subscales were removed from further analysis because they did not demonstrate strong internal consistency. Third, the study design was cross-sectional and therefore, causation cannot be inferred. Distribution of the survey packet and all measures were presented in its original format, rather than being consistent with scoring formatting and not substituting cross-country running for the word sport in the ABQ. It would have been more appropriate to have one seamless, re-formatted survey to ensure continuity and mask the purpose of the survey when appropriate. Additionally, this procedure may have led to social desirability of responses, which may have impacted how participants responded. The PHQ-9 has not been used extensively in an athlete population; rather, it is more commonly used in clinical settings (Kroenke et al., 2001). Therefore, it may have been more appropriate to use a sport-related measure to assess depressive symptoms. The AIMS survey was the original 1993 scale; it has since been updated (Brewer & Cornelius, 2001), and while the data collected using this measure was divided into relevant subscales, the most current version of the measure should have been used.

## **Future research directions**

Future research should employ a longitudinal design to assess athletes over the course of their college career. Burnout may present differently from season to season, and it is unclear if athletes who are at risk for burnout in their freshman year will burn out as they move through college. Future studies should also collect qualitative data. Athletes may not understand that burnout includes three components: Physical/emotional

exhaustion, reduced sense of accomplishment, and sport devaluation (Raedeke, 1997). It would be useful to use qualitative methods to better understand what burnout means to individual athletes and how the data relates to scores on the Athlete Burnout Questionnaire. The current study results suggest that athlete burnout might have associations with several theoretical frameworks, such as self-determination theory and cognitive-affective stress model (Deci & Ryan, 1985; R. E. Smith, 1986). Therefore, future studies could combine theoretical frameworks (Holmberg & Sheridan, 2013), and coaches could also take a multifaceted approach when addressing burnout among their athletes. Finally, future studies should examine not only the causes of burnout, but should also examine the efficacy of prevention interventions (Lonsdale et al., 2009).

## **Conclusion**

The sporting world has continued to become increasingly commercialized over the past several decades (Gould & Whitley, 2009). Athletes are subjected to greater external pressures to excel (Pacewicz et al., 2018), undergo even more specialized and rigorous training (Gould & Whitley, 2009; Moen et al., 2014; Raedeke, 1997), and can develop unhealthy desires to be perfect at their sport (Martin & Horn, 2013). Because of these and other factors, more attention is being paid to one of the larger challenges that athletes face, which is burnout. It is estimated that about 10% of college athletes experience burnout (Lemyre et al., 2008), and that number may continue to rise as research identifies additional antecedents of burnout.

Very little research has focused on only runners, especially Division III collegiate runners, and most research has used only one theoretical framework to guide the study. The present study used a combination of surveys that correspond to theories including

Raedeke's (1997) definition of burnout, self-determination theory (Deci & Ryan, 1985), and stress related theories (Coakley, 1992; Silva, 1990; R. E. Smith, 1986) to examine possible associations between psychosocial factors and burnout.

Overall, the findings indicate that motivational orientation plays an important role in whether or not an athlete is at risk for burnout. It also indicates that stress and symptoms of depression could be additional risks for developing burnout, while having a strong athletic identity may not indicate a high risk for burnout. In order to decrease the percent of athletes experiencing burnout, researchers must continue to explore antecedents of burnout using multiple theoretical frameworks, as well as design prevention interventions that coaches can implement with their athletes.



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**Appendix A**  
Recruitment Email

Good afternoon!

My name is Elizabeth Frick and I am pursuing a Master's degree in Kinesiology at the University of Minnesota-Twin Cities. I graduated in May of 2017 from UW-La Crosse, where I ran both cross-country and track under Coach Derek Stanley. I had the pleasure of competing with many of your former and current athletes.

This next school year I will be working on my Master's thesis, and I have chosen to focus on athlete burnout at the Division III level, specifically with long distance runners. My goal is to send out athlete questionnaires to be completed anonymously and collect data about different determinants and potential predictors of athlete burnout.

My project is still in very preliminary stages, and my hope is to be able to administer these surveys in the fall around or before mid-season. My reason for emailing you today is simply to ask if you would be willing to have your team participate in taking these questionnaires in the fall. I would be honored to work with you and your team.

Thank you so much for your consideration. Best of luck to you and any of your athletes competing in the National track meet this weekend -- I will be there as a volunteer worker! I look forward to hearing from you soon!

Sincerely,  
Elizabeth Frick  
Graduate Student, Kinesiology  
651-895-3478  
[frick138@umn.edu](mailto:frick138@umn.edu)



Good afternoon Coach,

I was in touch with you earlier this summer about my Master's thesis on athlete burnout. I'm happy to report that my proposed project has been accepted and I've been given the green light to start my data collection. I would like to schedule a time during either September or October when I can come and have your team fill out the survey I have put together. I can come any time that is convenient for you and for the team. I'm able to come before, during, or after practice on a day of the week that you choose. It is a one-time survey and the process should take about 15-20 minutes. I will explain my thesis to the team and then they will complete the surveys anonymously. If you could provide me with some possible dates or even possible days of the week that I could come in before the end of October, that would be wonderful. Thank you again so much - I am excited to include your team in my research and I really appreciate your help! I look forward to hearing from you soon!

Sincerely,  
Elizabeth Frick  
Graduate Student, Kinesiology  
651-895-3478  
[frick138@umn.edu](mailto:frick138@umn.edu)

**Appendix B**  
Informed Consent Form

**Title of Research Study:** Where's the Fire? Factors Behind the Burnout: An Exploratory Study of Athlete Burnout in Division III Cross-Country Runners

**Researcher Team Contact Information:**

For questions about research appointments, the research study, research results, or other concerns, call the study team at:

|  |  |
|--|--|
| Researcher Name: Elizabeth Frick<br>Researcher Affiliation: University of Minnesota<br>Phone Number: 651-895-3478<br>Email Address: frick138@umn.edu | Advisor: Beth Lewis, PhD.<br>Phone Number: 612-625-0756<br>Email Address: blewis@umn.edu |
|--|--|

**Supported By:** This research is supported by The University of Minnesota.

**Why am I being asked to take part in this research study?**

We are asking you to take part in this research study because you are a cross-country runner at a Division III university. Your coach has agreed to let your team complete a survey about athlete burnout in runners at the DIII level. We ask that you read this form and ask any questions you may have before you decide whether or not you want to be in the study.

**What should I know about a research study?**

- Someone will explain this research study to you.
- Whether or not you take part is up to you.
- You can choose not to take part.
- You can agree to take part and later change your mind.
- Your decision will not be held against you.
- You can ask all the questions you want before you decide.

**Why is this research being done?**

The purpose of this study is to examine how training load, motivation, and commitment may contribute to the development of athlete burnout.

**How long will the research last?**

Participants will complete a survey which will remain completely anonymous during one time-point predetermined by the coach of each team. The completion of this survey will take approximately 10-15 minutes.

**How many people will be studied?**

We expect about 325 people will be surveyed from different teams at universities in both Minnesota and Wisconsin.

**What happens if I say “Yes, I want to be in this research”?**

If you agree to be in this study, we would ask you to do the following things: First, you will complete the forms indicated. Specifically this includes signing this consent form and answering the survey. Once we receive consent, you will complete the survey. We ask that you complete this separate from other teammates, and that you do not compare answers or talk to other teammates while completing the survey. If you have any questions while completing the survey, we ask that you only ask the researcher and do not talk with your coaches until you are finished. Your responses will be completely anonymous. Although some demographic information such as age and gender will be collected, there will be no way to identify your individual response. Your coaches will not see your answers, so please answer as openly and as honestly as possible. After you complete the survey, you will return it to the researcher, who will put it in a sealed envelope so that no one will see your answers. At this point, you are free to leave and finish any other responsibilities left for practice for the day.

**What happens if I do not want to be in this research?**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with The University of Minnesota.

**What happens if I say “Yes”, but I change my mind later?**

If you decide to participate in this study, you are free to not answer any questions or withdraw at any time without affecting your current or future relations with The University of Minnesota

**What are the risks of being in this study? Is there any way being in this study could be bad for me?**

This study has a few risks. First, you may find answering some of the questions to be uncomfortable, particularly if you are experiencing burnout symptoms, or if it reminds you of experiencing burnout symptoms in the past. Second, it is possible that exercising uncomfortable. Second, it is possible that you could feel uncomfortable answering the questions in the same room as your coach and teammates. In this case, you may ask the researcher to move into the hallway for more privacy. Third, this procedure will take about 10-15 minutes with additional briefing beforehand by the researcher. This could delay your evening activities by 15-20 minutes. In addition to these risks, this research may hurt you in ways that are unknown.

**Will it cost me anything to participate in this research study?**

Taking part in this research study will not lead to any costs to you.

**Will being in this study help me in any way?**

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits may include improvement in awareness of burnout symptoms and the opportunity to develop prevention or coping strategies to help with burnout. If you currently experience burnout, you may be able to formulate solutions for overcoming it with your coach. If you do not currently experience burnout, you can develop ways to prevent it from happening in the future.

**What happens to the information collected for the research?**

Efforts will be made to limit the use and disclosure of your personal demographic information, to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the IRB and other representatives of this institution. We will not ask you about child [or elder] abuse, but if you tell us about child [or elder] abuse or neglect, we may be required or permitted by law or policy to report to authorities.

**Who do I contact if I have questions, concerns or feedback about my experience?**

This research has been reviewed and approved by an Institutional Review Board (IRB) within the Human Research Protections Program (HRPP). To share feedback privately with the HRPP about your research experience, call the Research Participants' Advocate Line at 612-625-1650 or go to <https://research.umn.edu/units/hrpp/research-participants/questions-concerns>. You are encouraged to contact the HRPP if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide input about this research.

**Will I have a chance to provide feedback after the study is over?**

The Human Research Protection Program may ask you to complete a survey that asks about your experience as a research participant. You do not have to complete the survey if you do not want to. If you do choose to complete the survey, your responses will be anonymous.

If you are not asked to complete a survey, but you would like to share feedback, please contact the study team or the Human Research Protection Program (HRPP). See the “Researcher Contact Information” of this form for study team contact information and “Who do I contact?” of this form for HRPP contact information.

**Will I be compensated for my participation?**

There will not be compensation for participation in this study.

**Use of Identifiable Health Information**

The results of this study may also be used for teaching, publications, or for presentation at scientific meetings. In any sort of report we might publish, we will not include any information that will make it possible to identify you.

Checking this box documents your permission to take part in this research.

**Appendix C**  
Demographic Questionnaire

**Demographic Questionnaire**

Please answer these questions to the best of your ability, keeping in mind that all answers will remain anonymous and will not be shared with anyone outside of the researcher and her advisory board at the University of Minnesota-Twin Cities.

Today's Date: \_\_\_\_\_

1) Which of the following best describes your gender identification? Male Female

2) What is your age? \_\_\_\_\_

3) Which of the following do you consider to be your racial group?

- a. American Indian/Alaskan Native
- b. Asian
- c. Native Hawaiian or Other Pacific Islander
- d. Black or African American
- e. White
- f. Other (describe): \_\_\_\_\_
- g. Don't know/refuse

4) Which of the following do you consider to be your ethnic group?

- a. Hispanic or Latino
- b. Not Hispanic or Latino

5) How many miles do you currently run per week on average?

\_\_\_\_\_

6) Have you ever had a sports injury? Yes/No

When YES, please specify:

\_\_\_\_\_

7) What sport(s) do you and/or have you participated in, in the last 10 years?

| Sport | Years | Hours/week (average) | Competitive (Yes/No) |
|-------|-------|----------------------|----------------------|
|       |       |                      |                      |
|       |       |                      |                      |
|       |       |                      |                      |
|       |       |                      |                      |

|  |  |  |  |
|--|--|--|--|
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|  |  |  |  |
|  |  |  |  |

8) Have you ever been over trained? Yes/No

When YES, please specify:

---

9) Are you currently doing any forms of cross-training and/or weightlifting as a part of training in addition to running? Yes/No

If YES, please specify:

---

10) Please use the space below to include any comments, questions, or remarks regarding athlete burnout.

**Appendix D**  
**Sport Motivation Scale**  
(Pelletier, Fortier, Vallerand, Tuson, Briere, and Blais, 1995)

52 / *Pelletier, Fortier, Vallerand, Tuson, Briere, and Blais*

**Appendix**

*Why Do You Practice Your Sport?*

Using the scale below, please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently practicing your sport.

|  | Does not<br>correspond<br>at all |   | Corresponds<br>moderately |   |   | Corresponds<br>exactly |   |
|--|----------------------------------|---|---------------------------|---|---|------------------------|---|
|  | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 1. For the pleasure I feel in living exciting experiences.   | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 2. For the pleasure it gives me to know more about the sport that I practice.                              | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 3. I used to have good reasons for doing sports, but now I am asking myself if I should continue doing it. | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 4. For the pleasure of discovering new training techniques.  | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 5. I don't know anymore; I have the impression that I am incapable of succeeding in this sport.            | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 6. Because it allows me to be well regarded by people that I know.   | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 7. Because, in my opinion, it is one of the best ways to meet people.                                      | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 8. Because I feel a lot of personal satisfaction while mastering certain difficult training techniques.    | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 9. Because it is absolutely necessary to do sports if one wants to be in shape.                            | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 10. For the prestige of being an athlete.  | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 11. Because it is one of the best ways I have chosen to develop other aspects of myself.                   | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 12. For the pleasure I feel while improving some of my weak points.  | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 13. For the excitement I feel when I am really involved in the activity.                                   | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 14. Because I must do sports to feel good about myself.  | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 15. For the satisfaction I experience while I am perfecting my abilities.                                  | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |
| 16. Because people around me think it is important to be in shape.   | 1                                | 2 | 3                         | 4 | 5 | 6                      | 7 |



|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 17. Because it is a good way to learn lots of things which could be useful to me in other areas of my life. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. For the intense emotions that I feel while I am doing a sport that I like.                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. It is not clear to me anymore; I don't really think my place is in sport.                               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. For the pleasure that I feel while executing certain difficult movements.                               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. Because I would feel bad if I was not taking time to do it.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. To show others how good I am at my sport.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. For the pleasure that I feel while learning training techniques that I have never tried before.         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. Because it is one of the best ways to maintain good relationships with my friends.                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. Because I like the feeling of being totally immersed in the activity.                                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. Because I must do sports regularly.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. For the pleasure of discovering new performance strategies.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. I often ask myself; I can't seem to achieve the goals that I set for myself.                            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

### Notes

<sup>1</sup>Deci and Ryan (1985) also include integrated regulation as one type of extrinsic motivation. However, integrated regulation was not initially included in the EMS and therefore is not assessed in the SMS. Pilot data revealed that integrated regulation did not come out as a perceived reason for participating in sport. Future research would appear necessary on this issue.

<sup>2</sup>Although the alpha reliability values of some of determinants and consequences are low, it was decided to use these measures since they were also used with the French version.

### Acknowledgments

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**Appendix E**  
Athlete Identity Measurement Scale  
(Brewer, Van Raalte, & Linder, 1993)

Please mark an "x" in the space that best reflects the extent to which you agree or disagree with each statement in relation to your own sports participation.

1. I consider myself an athlete.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

2. I have many goals related to sport.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

3. Most of my friends are athletes.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

4. Sport is the most important part of my life.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

5. I spend more time thinking about sport than anything else.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

6. I need to participate in sport to feel good about myself.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

7. Other people see me mainly as an athlete.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

8. I feel bad about myself when I do poorly in sport.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

9. Sport is the only important thing in my life.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

10. I would be very depressed if I were injured and could not compete in sport.

Strongly Agree : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : Strongly Disagree

**Appendix F**  
**PHQ-9**  
(Kroenke, Spitzer, & Williams, 2001)

**PHQ-9 — Nine Symptom Checklist**

Over the last 2 weeks, how often have you been bothered by any of the following problems?

|   | <b>Not<br/>at<br/>all</b> | <b>Several<br/>Days</b> | <b>More<br/>than<br/>half the<br/>days</b> | <b>Nearly<br/>Every<br/>Day</b> |
|---|---------------------------|-------------------------|--|---------------------------------|
| 1. Little interest or pleasure in doing things                  | 0                         | 1                       | 2  | 3                               |
| 2. Feeling down, depressed, or hopeless                         | 0                         | 1                       | 2  | 3                               |
| 3. Trouble falling asleep, staying asleep, or sleeping too much | 0                         | 1                       | 2  | 3                               |
| 4. Feeling tired or having little energy                        | 0                         | 1                       | 2  | 3                               |
| 5. Poor appetite or overeating                                  | 0                         | 1                       | 2  | 3                               |

|  |   |   |   |   |
|--|---|---|---|---|
| 6. Feeling bad about yourself - or that you're a failure or have let yourself or your family down  | 0 | 1 | 2 | 3 |
| 7. Trouble concentrating on things, such as reading the newspaper or watching television   | 0 | 1 | 2 | 3 |
| 8. Moving or speaking so slowly that other people could have noticed. Or, the opposite - being so fidgety or restless that you have been moving around a lot more than usual | 0 | 1 | 2 | 3 |
| 9. Thoughts that you would be better off dead or of hurting yourself in some way   | 0 | 1 | 2 | 3 |

10. If you checked off any problems, how difficult have those problems made it for you to do your work, take care of things at home, or get along with other people (circle one)?

**Not Difficult at All  
Difficult**

**Somewhat Difficult  
Extremely Difficult**

**Very**

*May be currently depressed if:*

*n Items 1 and/or 2 are checked as "More than half the days"*

*n 5 or more of the nine items are checked as, at least, "More than half the days,"*

*n If both of the above are true, they may be currently depressed and could be ineligible. Need to repeat the questionnaire at the first session prior to randomization.*

**Appendix G**  
**Perceived Stress Scale**  
(Cohen, Kamarck, & Mermelstein, 1983)

**Cohen Perceived Stress Scale**

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

| <b>IN THE PAST MONTH:</b>   | <b>Never</b> | <b>Almost<br/>never</b> | <b>Some-<br/>times</b> | <b>Fairly<br/>Often</b> | <b>Very<br/>Often</b> |
|---|--------------|-------------------------|------------------------|-------------------------|-----------------------|
| 1. How often have you been upset because of something that happened unexpectedly?             | 0            | 1                       | 2                      | 3                       | 4                     |
| 2. How often have you felt that you were unable to control the important things in your life? | 0            | 1                       | 2                      | 3                       | 4                     |
| 3. How often have you felt nervous and "stressed"?  | 0            | 1                       | 2                      | 3                       | 4                     |

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| 4. How often have you dealt successfully with irritating life hassles?   | 0 | 1 | 2 | 3 | 4 |
| 5. How often have you felt that you were effectively coping with important changes that were occurring in your life? | 0 | 1 | 2 | 3 | 4 |
| 6. How often have you felt confident about your ability to handle your personal problems?                            | 0 | 1 | 2 | 3 | 4 |
| 7. How often have you felt that things were going your way?  | 0 | 1 | 2 | 3 | 4 |
| 8. How often have you found that you could not cope with all the things that you had to do?                          | 0 | 1 | 2 | 3 | 4 |
| 9. How often have you been able to control irritations in your life?   | 0 | 1 | 2 | 3 | 4 |

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| 10. How often have you felt that you were on top of things?  | 0 | 1 | 2 | 3 | 4 |
| 11. How often have you been angered because of things that happened that were outside of your control? | 0 | 1 | 2 | 3 | 4 |
| 12. How often have you found yourself thinking about things that you have to accomplish?               | 0 | 1 | 2 | 3 | 4 |
| 13. How often have you been able to control the way you spend your time?                               | 0 | 1 | 2 | 3 | 4 |
| 14. How often have you felt difficulties were piling up so high that you could not overcome them?      | 0 | 1 | 2 | 3 | 4 |

**Appendix H**  
 Athlete Burnout Questionnaire (ABQ)  
 (Raedeke, 1997)

The Athlete Burnout Questionnaire

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 circling 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. If you have any questions, feel free to ask.

|  |  | Almost<br>Never | Rarely | Sometimes | Frequently | Almost<br>Always |
|--|--|-----------------|--------|-----------|------------|------------------|
| <u>How often do you feel this way?</u> |  |                 |        |           |            |                  |
| 1.                                     | I'm accomplishing many worthwhile things in [ <i>sport</i> ]                           | 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 [ <i>sport</i> ] would be better spent doing other things        | 1               | 2      | 3         | 4          | 5                |
| 4.                                     | I feel overly tired from my [ <i>sport</i> ] participation                             | 1               | 2      | 3         | 4          | 5                |
| 5.                                     | I am not achieving much in [ <i>sport</i> ]  | 1               | 2      | 3         | 4          | 5                |
| 6.                                     | I don't care as much about my [ <i>sport</i> ] performance as I used to                | 1               | 2      | 3         | 4          | 5                |



|     |  |   |   |   |   |   |
|-----|--|---|---|---|---|---|
| 7.  | I am not performing up to my ability in<br>[ <i>sport</i> ]                        | 1 | 2 | 3 | 4 | 5 |
| 8.  | I feel "wiped out" from [ <i>sport</i> ]   | 1 | 2 | 3 | 4 | 5 |
| 9.  | I'm not into [ <i>sport</i> ] like I used to be                                    | 1 | 2 | 3 | 4 | 5 |
| 10. | I feel physically worn out from [ <i>sport</i> ]                                   | 1 | 2 | 3 | 4 | 5 |
| 11. | I feel less concerned about being<br>successful in [ <i>sport</i> ] than I used to | 1 | 2 | 3 | 4 | 5 |
| 12. | I am exhausted by the mental and physical<br>demands of [ <i>sport</i> ]           | 1 | 2 | 3 | 4 | 5 |
| 13. | It seems that no matter what I do, I don't<br>perform as well as I should          | 1 | 2 | 3 | 4 | 5 |
| 14. | I feel successful at [ <i>sport</i> ]  | 1 | 2 | 3 | 4 | 5 |
| 15. | I have negative feelings toward [ <i>sport</i> ]                                   | 1 | 2 | 3 | 4 | 5 |

*Note:* The specific sport of the respondent is inserted where [sport] appears above. For example, in a swimming-specific study item one would read “I’m accomplishing many worthwhile things in swimming”

## Appendix I IRB Approval Form

UNIVERSITY OF MINNESOTA

Twin Cities Campus

Human Research Protection Program  
Office of the Vice President for Research

1250 Mass Memorial Building  
620 Delaware Street S.E.  
MMC 829  
Minneapolis, MN 55455  
Phone: 612-625-5650  
Fax: 612-625-6960  
Email: HRPP@umn.edu  
http://www.research.umn.edu/subjects/

|   |
|---|
| <ul style="list-style-type: none"> <li>• Sport Motivation Scale 2 of 2.PNG, Category: Other;</li> <li>• Sport Motivation Scale 1 of 2.PNG, Category: Other;</li> <li>• Intrinsic Motivation Inventory.pdf, Category: Other;</li> <li>• PHQ-9 yes doc, Category: Other;</li> </ul> |
|---|

### EXEMPTION DETERMINATION

August 27, 2018

Beth Lewis

651-423-4733  
blewis@umn.edu

Dear Beth Lewis:

On 8/27/2018, the IRB reviewed the following submission:

|  |   |
|--|---|
| Type of Review:                          | Initial Study   |
| Title of Study:                          | Where's the Fire? Factors Behind the Burnout: An Exploratory Study of Athlete Burnout in Division III Cross-Country Runners   |
| Investigator:                            | Beth Lewis  |
| IRB ID:                                  | STUDY0004235  |
| Sponsored Funding:                       | None  |
| Grant ID/Con Number:                     | None  |
| Internal UMN Funding:                    | None  |
| Fund Management Outside University:      | None  |
| IND, IDE, or HDE:                        | None  |
| Documents Reviewed with this Submission: | <ul style="list-style-type: none"> <li>• Perceived Stress Scale.doc, Category: Other;</li> <li>• BRSQ Behavioural Regulation in Sport Scale - All languages ISEP16.docx, Category: Other;</li> <li>• Demographic Questionnaire for Burnout Thesis.docx, Category: Other;</li> <li>• Athletic Identity Measurement Scale.pdf, Category: Other;</li> <li>• Athlete Burnout Questionnaire , Category: Other;</li> <li>• Athlete Burnout Consent Form.docx, Category: Consent Form;</li> <li>• Athlete Burnout Thesis Protocol , Category: IRB Protocol;</li> </ul> |

The IRB determined that this study meets the criteria for exemption from IRB review. To arrive at this determination, the IRB used "WORKSHEET: Exemption (HRP-312)." If you have any questions about this determination, please review that Worksheet in the [HRPP Toolkit Library](#) and contact the IRB office if needed.

This study met the following category for exemption:

- (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that Human Subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the Human Subjects responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects financial standing, employability, or reputation

Ongoing IRB review and approval for this study is not required; however, this determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities impact the exempt determination, please submit a Modification to the IRB for a determination.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the [HRPP Toolkit Library](#) on the IRB website.

For grant certification purposes, you will need these dates and the Assurance of Compliance number which is FWA0000312 (Fairview Health Systems Research FWA0000325, Gillette Children's Specialty Healthcare FWA00004003).

Sincerely,

Jeffery P Perkey, CIP, MLS  
IRB Analyst

We value feedback from the research community and would like to hear about your experience. The link below will take you to a brief survey that will take a minute or two to complete. The questions are basic, but your responses will help us better understand

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