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Mental toughness, well-being, and coach-created motivational climate within collegiate athletics

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Mental Toughness, Well-Being, and Coach-Created Motivational Climate within
Collegiate Athletics

Chad Doerr

A dissertation submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In

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“It takes a village,” and I will be forever grateful for all the people in mine.

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Abstract

This study examined the relationship between college student-athletes' well-being, self-ratings of mental toughness in sport, and perceptions of the coach-created motivational climate. One hundred and two NCAA Division I female student-athletes completed measures of well-being, mental toughness, and coach-created motivational climate over the course of a university academic year. The author hypothesized that mental toughness and perceptions of the coach-created motivational climate would predict well-being. Overall, the results of the study found a predictive relationship between well-being and mental toughness, and well-being, mental toughness, and an ego-involving coach-created motivational climate.

These results provide initial evidence that cognitive, affective, personality, and environmental factors influence student-athlete well-being. The findings also demonstrate that Henriques et al.'s (2017) Nested Model of Well-being (NM) may be an effective model to understand the unique factors that influence student-athlete well-being. For example, the results of the study indicate that the construct of mental toughness may overlap with Henriques et al.'s (2014) conceptualization of adaptive potentials (one's skills and abilities to function effectively in the environment). Additionally, the influence of a student-athlete's perception of the coach-created motivational climate on well-being may be aligned with the NM's characterization of the environmental domain. These results indicate a need to study other factors that influence student-athlete well-being. This study demonstrates a need to develop measures that assess student-athlete well-being while also accounting for the unique cultural components of college athletics that may influence the well-being of student athletes.

CHAPTER 1. INTRODUCTION

In the United States, nearly 460,000 students possess the necessary skills and abilities to play on a university athletic team governed by the National Collegiate Athlete Association (NCAA, 2016). These individuals are known as college student-athletes. Countless years of deliberate focus and motivation are often required to foster the expert physical and mental abilities to compete at this level (Ericsson, 2006). Many college student-athletes will experience long days of continuous activity all year long. These days consist of weight training, conditioning, film sessions, and team practices.

Athletic performance is not the only expectation of these athletes. These individuals are expected to excel in the classroom, become leaders, and also be positive contributors to their community (NCAA, 2004). College student-athletes also work hard to maintain family, personal, and intimate relationships. Balancing these demands can be immensely difficult for an emerging adult. When an individual is unable to manage these multiple stressors, the student-athlete may not only experience impairment in athletic performance, but their overall well-being and mental health may suffer as well (Beauchemin, 2014; Gardner & Moore, 2006).

Of late, there has been an identifiable increase in the distress of college students (Kadison & DiGeronimo, 2005; Gallagher, 2012). Older studies have indicated that student-athletes had fewer difficulties with mental health than non-athletes (Dishman et al., 2006; Harrison & Narayan, 2003; Sanders, Field, Diego, & Kaplan, 2000). However, recent suicides of high-profile college student-athletes such as Tyler Hilinski (Kirshner, 2018) and Madison Holleran (Fagan, 2018) have placed student-athlete mental health and well-being into national news coverage. Additionally, as evidence has found that only 10% of student-athletes utilize mental health services, as compared to 30% of students overall (Lipson and Eisenberg, 2014), there has

been an increase in efforts by the NCAA to improve the well-being of student-athletes (NCAA, 2014). Prominent efforts have been made to increase help-seeking behavior among student-athletes (Eisenberg, 2014). While this is a helpful start to improving access and services, the NCAA has not directly provided an institutional definition of well-being, nor a cohesive frame to understand how the unique cultural aspects of college athletics may influence well-being.

An important step in improving the well-being of student-athletes is to develop a theoretical and conceptual understanding of well-being. This will help identify unique contextual factors that influence student-athlete well-being. It also may provide a consistent theoretical underpinning which other programs may utilize in their efforts to improve assessments and interventions targeting student-athlete well-being. The author believes that these theoretical and conceptual foundations are imperative if researchers and applied practitioners want the student-athlete well-being movement to reach its highest potential of growth.

Henriques, Kleinman, and Asselin (2014) define well-being via the Nested Model. This construct of well-being consists of four domains, including: 1) subjective experience of being; 2) physical and psychological health and functioning; 3) the material and social environment; and 4) the values of the evaluator that constitute the good life. The model ultimately characterizes well-being as happiness with the worthiness to be happy. A college student-athlete with high well-being feels fulfilled by participation in activities within and outside of sport, feels competent in their coping abilities, has access to resources that may foster mental and physical health, can experience and effectively handle a full range of emotions, is self-reliant and independent, can meet athletic and academic demands, is physically healthy, has good relationships, and partakes in habits that are morally and ethically appropriate for a college student-athlete (e.g., no consumption of performance enhancing drugs).

While college student-athletes manage daily stressors and participate in many activities, there often exists a significant expectation of achieving high athletic performance. For student-athletes to perform well they must attain and execute knowledge, skills, and abilities (KSAs) that are relevant to their performance domain (Portenga, Aoyagi, & Cohen, 2016). However, KSAs are not only physical skills, but also are mental skills and traits that help athletes perform at their best, on demand, and when it matters most. Harmison (2011) described these mental skills and traits as mental toughness, or the set of key cognitions and affects that allow athletes to excel by coping more effectively with the troublesome and difficult aspects of competitive sport and adapting successfully to demanding and challenging competitive situations as well. Mental toughness is regarded as a key factor for performance excellence (Golby & Sheard, 2004) and also has been found to be a moderating variable in predicting sport performance (Newland, Newton, Finch, Harbke, & Podlog, 2013). Athletes commonly are praised for their ability to be confident, possess high levels of motivation, deeply focus, and push their bodies and minds to their limits to achieve high performance. A college student-athlete with high mental toughness often performs to their highest abilities due to thriving under pressure, bouncing back from perceived failure, a high level of self-belief, and an ability to concentrate on important tasks while ignoring distractions.

While mental toughness often has been researched as a means of improving athletic performance, it may be an under-examined factor in predicting the well-being of college student-athletes. Some aspects of mental toughness (e.g., confidence, summoning motivation and desire, effectively dealing with adversity and failure) have been conceptualized by other researchers to improve well-being and performance outside of athletics (Duckworth, 2016). However, other studies have found the perceptions of mental toughness may be a detriment to well-being. For

example, elite amateur rowers suffering with health problems were found to suppress emotions to avoid appearing mentally weak, negative, or irrational (Sinden, 2010). In a qualitative study of previous elite male athletes diagnosed with depression, many of the participants endorsed that they initially understood their early depressive symptoms as a lack of “mental skills or poor sport psychology” (Doherty, Hannigan, & Campbell, 2016). This discrepancy in empirical findings highlights a need to further explore the relationship between mental toughness and well-being to inform research and applied practice.

In addition to subjective aspects that influence well-being, environmental factors may also influence student-athlete well-being. Student-athletes spend a significant amount of time receiving feedback from coaches. The overall theme of a coach’s feedback is referred to as the coach-created motivational climate (Roberts, Treasure, & Conroy, 2007). For example, a coach may provide feedback in a manner that reinforces learning from mistakes and focusing on effort and self-improvement (i.e., task-involving climate), or they may send verbal or nonverbal messages in a manner that praises natural ability over effort, while also emphasizing comparison and competition (i.e., ego-involving climate). The way student-athletes perceive their coach-created motivational climate has been shown to influence well-being (Reinboth, Duda, & Ntourmanis, 2004). However, Reinboth, Duda and Ntourmanis (2004) consisted of youth athletes in their study sample. The findings may not generalize to the unique context of college athletics. Further examination of the perceptions of a coach-created motivational climate on college student-athlete well-being is warranted.

The purpose of this study was to explore the relationships between college student-athletes’ self-ratings of mental toughness, perceptions of the coach-created motivational, and well-being. While studies have investigated well-being (Amorose, Anderson-Butcher, & Cooper,

2009; Blanchard, Amiot, Perreault, & Vallerand, 2009; Deci & Ryan, 2008; Reinboth & Duda, 2006), mental toughness (see Harmison, 2011), and the coach-created motivational climate (Roberts, Treasure, & Conroy, 2007; Reinboth & Duda, 2006; Pensgaard & Roberts, 2000) within the student-athlete population, there is an absence of studies on how these three constructs may be related. It is hoped that the information gathered from this study will allow individuals to more effectively understand the relationship between these important factors. This would aid the NCAA's current mission improve the well-being of their student-athletes.

CHAPTER 2. LITERATURE REVIEW

The following literature review will provide deeper conceptual explanations of well-being, mental toughness, and coach-created motivational climate. The section on well-being will discuss theoretical and conceptual issues in defining well-being, cite literature on well-being with a student-athlete population, and provide a deeper examination of Henriques, Kleinman, and Asselin's (2014) Nested Model of well-being. The section on mental toughness will outline Harmison's (2011) social-cognitive conceptualization of the mental toughness construct. It will also cite relevant literature and studies. The section on coach-created motivational climate will define the construct and cite relevant literature that highlights its hypothesized relationship with well-being and mental toughness. Furthermore, the relationship between well-being, mental toughness, and coach-created motivational climate section will cite relevant literature that investigated relationships between these three constructs. This section intends to demonstrate the importance of understanding these constructs within a college student-athlete population. It will also provide a rationale for the proposed investigation of how mental toughness and perceptions of the coach-created motivational climate may influence well-being.

Well-Being

Well-being has been considered an integral aspect of human functioning. The concept dates to philosophers such as Aristotle (1984). Well-being is commonly used in philosophy to describe what is good for a person (Crisp, 2013) and related to health functioning.

The World Health Organization defined health as, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1946, p. 1). This definition indicates that well-being encompasses and integrates all aspects of human functioning. Since the creation of the field of positive psychology, a significant amount of

research and scientific inquiry has been dedicated to happiness, virtues, and positive emotions (Jayawickreme, Forgeard, & Seligman, 2012). This line of research has often defined well-being as a subjective evaluation of life satisfaction. Well-being is derived from positive affect and focuses on “feeling good,” or hedonic well-being (Ryan & Deci, 2001). However, findings have shown that solely focusing on happiness may have paradoxical consequences and make people less happy (Mauss, Tamir, Anderson, & Savino, 2011). Therefore, other research has emphasized eudaimonic well-being. As opposed to simply “feeling well”, eudaimonic well-being investigates constructs of “doing well”, which may involve aspects such as meaning, purpose, flow, and engagement (Ryan & Deci, 2001).

Due to the varying philosophies and definitions, many scholars believe that the study of well-being lacks conceptual clarity (Diener, Scollon, & Lucas, 2003; Henriques, Kleinman, & Asselin, 2014; Jayawickreme, Forgeard, & Seligman, 2012). Due to this lack of theoretical and conceptual specificity for the concept of well-being, it can be difficult to fully understand what is meant when well-being is utilized in research, assessment, or even in conversation. For example, Easterlin (2003) claims that, “the terms of well-being, utility, happiness, life satisfaction, and welfare to be interchangeable” (p. 11176). Additionally, Tomer (2011) indicated that while there are both hedonic and eudaimonic approaches to well-being, there is a limited number of frameworks that integrate both constructs. Some scholars believe that the lack of integration with eudaimonic and hedonic theories may have problematic consequences for the field and encourage more comprehensive maps of well-being to be developed (Jayawickreme, Forgeard, & Seligman, 2012).

The lack of a consistent and comprehensive theoretical framework of well-being is apparent in the empirical literature on student-athletes. Most studies examining student-athlete

well-being have used Self-Determination Theory (SDT) to conceptualize well-being (Amorose, Anderson-Butcher, & Cooper, 2009; Blanchard, Amiot, Perreault, & Vallerand, 2009; Deci & Ryan, 2008; Reinboth & Duda, 2006). SDT is a theory of human motivation and personality that emphasizes an innate human desire for individual's innate needs to be met (Deci & Ryan, 2000). It claims that the basic needs of autonomy, competence, and relatedness allow for optimal functioning and growth. Although SDT provides a well-researched framework for understanding aspects of well-being, the present author believes that it does not offer a clear conceptual map of well-being. Many assessment instruments that utilize an SDT framework do not directly assess well-being and propose that well-being is achieved solely through meeting the needs of competence, relatedness, and autonomy. SDT may not fully account for the multitude of bio-psycho-social factors that influence well-being, especially the unique cultural and contextual variables for the college student-athlete population. Therefore, a model that unifies well-being into a holistic map of human functioning and experience is essential to accurately assessing and deeply understanding the complicated components of student-athlete well-being.

The Nested Model of Well-Being

Henriques, Kleinman, and Asselin's (2014) Nested Model (NM) is an integrative and meta-theoretical approach to well-being. The NM defines well-being as more than just a subjective state of happiness. It conceptualizes it as a combination of one's subjective experience of satisfaction, psychological functioning, and biological functioning. It also views well-being as the ability to access necessary and desired material resources and social connections and considers the extent to which the individual is engaging in an ethically moral life with purpose (Henriques et al., 2014).

The NM delineates multiple domains of well-being that align with Henriques' (2011) Unified Theory of Psychology. These domains provide a conceptualization of well-being that integrates biological, psychological, sociological, hedonic, and eudiamonic approaches in efforts to provide a comprehensive formulation of well-being. These domains are nested, meaning that each domain can be individually analyzed, but the whole concept of well-being also can be conceptualized as well. According to the NM, authentic well-being occurs when each of the aspects of these domains is positively aligned. The domains are as follows:

Domain 1 – the Subjective Domain. The subjective domain refers to the “first person, phenomenological conscious experience of happiness (vs. misery) along with the self-conscious reflected levels of satisfaction (or dissatisfaction with life and its various domains)” (Henriques, Kleinman, & Asselin, 2014, p. 8). This domain includes one’s own interpretation of life satisfaction and happiness (i.e., subjective well-being).

According to Diener, Scollon, and Lucas (2003), an individual’s first-person perspective of their subjective well-being. Two components of well-being are affective and involve positive and negative feeling states. Positive and negative feeling states are considered emotional components experienced within the present moment. They also include mood states, which are more diffuse and consistent states of being. Mood states may be positive (e.g., energetic and pleasant) and negative (e.g., depressed or anxious).

Two other components of subjective well-being are cognitive. They involve global satisfaction and domain satisfaction. Global satisfaction and domain satisfaction are considered self-reflective cognitive evaluations. They are moderately correlated but still independent components (Diener, Scollon, & Lucas, 2003). For example, an athlete may report having a high level of general satisfaction with their life, although they report a low satisfaction with academic

functioning due to disinterest in their classes. Cognitive evaluations of satisfaction involve self-conscious justifications that narrate and interpret one's actions to create meaning and self-narrative (Henriques, 2011). Questions that would tap into this domain include, "How satisfied are you with your life?" and "Are you happy most of the time?" (Henriques, Kleinman, & Asselin, 2014).

Domain 2 – the Health and Functioning Domain. This domain consists of both biological and psychological components of human functioning. Biological functioning involves bio-physical health and is concerned with how one's genes, cells, organs, and organ systems are functioning. The NM views biological functioning in an important manner well-being because it allows for the capacity to live a fulfilled life. The psychological component is broadly characterized as one's personality. The NM conceptualizes personality functioning within the framework of the Unified Approach (Henriques & Stout, 2012) and includes three domains of personality functioning: (a) temperaments and traits, (b) characteristic adaptations and identity, and (c) adaptive potentials. Additionally, within Henriques' Character Wheel (Henriques, 2014 4 18), values and virtues and pathologies have been expanded to provide a comprehensive map of character.

Temperaments and traits. Temperaments and traits refer to general dispositional tendencies that occur across different contexts. The NM aligns with McAdams and Pals' (2006) framework of personality. This framework conceptualizes that personality consists of five broad traits: (a) extraversion, (b) neuroticism, (c) openness, (d) agreeableness, and (e) conscientiousness.

Characteristic adaptations. According to McAdams and Pals (2006), characteristic adaptations are aspects of one's goals, motives, values, and plans. They are also ways of

interpreting significant others, developmental tasks, and other events that occur in one's life. Henriques (2017) expanded McAdams and Pals' (2006) work by developing the characteristic adaptation systems theory (CAST). This organizational system helps understand an individual's self-beliefs and worldview within unique social and cultural contexts. The organizational frame of CAST is separated into five different systems of adaptation:

The habit system consists of patterns of daily activity such as sleeping, exercise, or substance use. The habit system is heavily aligned with the psychological processes of behaviorism (Henriques, 2017), or aspects of classical and operant conditioning.

The experiential system corresponds to "the nonverbal emotions and feelings, images, sensory aspects of mental life, and is stored in long-term memory in the form of episodic memories" (Henriques, Kleinman, & Asselin, 2014, p. 13). This system influences perceptions and motives, and how positive and negative emotions influence approach or avoidance behavior.

The relational system refers to social motivation and one's perception of a need to experience being known and valued by important others. This system is grounded in attachment theory (Bretherton, 1992). It explains how previous experiences and intrapsychic structures influence relational communication and behavior in an adaptive or maladaptive manner.

The defensive system involves one's self-management of actions, feelings, thoughts, and attention. It explains how people cope with distressing thoughts and experiences in an adaptive or maladaptive way. This system also outlines one's ability to be resilient or engage in maladaptive coping styles.

The justification system refers to "the language-based beliefs and values that allow humans to narrate events, make reflection evaluations, analyze the logic of concepts, and develop a meaningful worldview" (Henriques, Kleinman, & Asselin, 2014, p. 14). It explains how an

individual makes sense of their actions and events in their life through justifications, or self-talk. Justifications relate to well-being through shaping an individual's beliefs and values of events that occur.

Adaptive potentials. Adaptive potentials refer to one's skills and abilities to function effectively in the environment (Henriques, Kleinman, & Asselin, 2014). These indicate one's potential to get biological, psychological, and sociological needs met. A common framework of adaptive potentials is Gardner's (1999) model. This model conceptualizes eight different aspects of intelligence: (a) logical-mathematical, (b) verbal/linguistic, (c) spatial reasoning, (d) bodily kinesthetic, (e) musical, (f) interpersonal, (g) intrapersonal, and (h) naturalistic. Individuals use their knowledge, skills, and abilities within these aspects of intelligence to function effectively and obtain important needs.

Within sport psychology literature, the concept of adaptive potentials can be seen within Bompa and Jones' (1983) model of periodization training in sports performance. The adaptive potentials in this model are four primary categories of training: (a) physical fitness and conditioning, (b) technical, or the techniques and skills of the sport, (c) tactical, or an understanding and awareness of sport rules and, (d) mental, or the skills and abilities delineated by Harmison's (2011) framework on mental toughness.

Domain 3 – the Environmental Domain. The environmental domain is separated into material and social components. The material environment includes access to biological resources essential to health (e.g., food, air, water), technologies that allow for freedom and control of the environment, and the economic environment that allows for access to power and resources.

The social component is one's imbedded network of social relationships. They include a microsocial environment (e.g., friends, family, peers, romantic partners, teammates, athletes within an athletic department), a meso-level environment (e.g., socio-economic status, athletic department, university), and a macrosocial environment (e.g., religious orientation, political affiliation, state/country currently living in). The social environments can play a significant role in well-being through the ability to access feelings of relational value and connection with others. This is similar to Deci and Ryan's (1980) SDT concept of relatedness. The social component can help individuals access social needs and alter their perception of events in a manner that impairs or promotes adaptive functioning.

Domain 4 – the Values and Ideology Domain. This domain refers to morals, ethics, and one's worldview. Henriques et al's. (2014) NM has an evaluative component which overlaps with living an ethical life. The evaluator of well-being in an applied context makes a value judgement about the individual's functioning. This is beyond the individual's subjective rating of well-being and considers the morals, ethics, and values that exist within one's cultural and social context. Within the context of college athletics, the NCAA's core values involve balance (e.g., academic, social, and athletics), integrity and sportsmanship, community and support, inclusivity, respect, and leadership (NCAA, 2016). For example, a high-profile college athlete may believe they are high on well-being due to a sense of purpose, strong academic and athletic performance, and a committed friend group. However, they may be evaluated as having low well-being by a college athletic department because this individual has recently been accused of sexual assault, was cheating in class, or was caught using illegal performance enhancing substances. This example provides evidence for the importance of assessing well-being beyond

subjective happiness. Even if an individual reports high levels of well-being, this may not fully imply they have high well-being if they are not living a morally and ethically sound life.

The present author believes that the NM provides an effective empirical, theoretical, and philosophical map of well-being. This map may be highly effective for understanding the unique cultural and contextual aspects that influence the well-being of college student-athletes. As the NM provides a framework for integration, important facets of athletic performance such as mental toughness also may influence the well-being of student-athletes. The following section discusses the theoretical and conceptual components of mental toughness and aims to explain how the concepts of mental toughness may effectively integrate with the NM's conceptualization of adaptive potentials to predict student-athlete well-being.

Mental Toughness

Mental toughness is an immensely popular term within sport and performance psychology literature. While the term has been extensively used, quoted, and described by media, performers, and sport psychology professionals, there is a significant lack of clarity on the actual meaning of the term. The present study will use Harmison's (2011) framework to define the construct. This framework states that mental toughness is a multidimensional, social-cognitive construct. It involves a combination of inherited personality constructs (Horsburgh, Schermer, Veselka, & Vernon, 2009) and learned, dynamic skills that can be cultivated and developed. Harmison has delineated seven attributes that contribute to mental toughness: (a) confidence, (b) summoning motivation and desire, (c) effectively dealing with adversity and failure, (d) managing anxiety, pressure, and other emotions, (e) sustaining focus, (f) overcoming pain and hardship, and (g) finding balance and keeping perspective.

Being confident. The first attribute, being confident, is the belief that one can achieve goals, reach their potential, and feel competent in their abilities. Gucciardi, Gordon, and Dimmock (2008) have indicated that mental toughness research has shown confidence to be a very common and significant attribute of athletes that exhibit mental toughness. Additionally, meta-analysis also has indicated that confidence may reliably predict sport performance (Moritz, Feltz, Fahrback, & Mack, 2000).

Harmison's (2011) framework on confidence is grounded in multiple theoretical principles. One aspect of confidence is a state-like variation in confidence that athletes may encounter from day-to-day, or even mid competition in differing scenarios. Bandura's (1997) self-efficacy theory refers to this situation-specific confidence. For example, some athletes will have confidence about specific skills and specific situations (e.g., making a five-foot shot in basketball practice), but may lack self-efficacy and confidence in other situations (e.g., making a twenty-foot shot in a basketball game). Additionally, self-efficacy can generalize to one's belief in their ability to manage emotions and thoughts. Research has indicated that high levels of self-efficacy can significantly influence adaptive thought patterns (Feltz et al., 2008), emotional responses (Short & Ross-Steward, 2009), and competitive behaviors in performance settings (Chase, 2001).

A second theoretical principle is Vealey's (1986) sport-confidence, or "the belief or degree of certainty individuals possess about their ability to be successful in sport" (p. 222). Vealey and Chase (2008) theorized that there are three components that influence an athlete's sport confidence: (a) physical skills and training, (b) cognitive efficiency, and (c) resilience. Vealey's framework indicates that sport confidence can be trait-like and generalized overall towards one's ability to perform. However, it also acknowledges that sport confidence may be

contextual and vary depending on the situation or sporting environment. In a qualitative study of elite athletes that have won medals in Olympic Games or World Championships, researchers found that these performers had high levels of sport confidence that was demonstrated through high levels of commitment and effort, having a higher level of enjoyment with the competitive experience, interpreting pre-competitive nerves positively, and experiencing more positive emotions (Hays, Thomas, Maynard, and Bawden, 2009).

Summoning motivation and desire. The second attribute involves the ability to summon motivation and desire, which includes a desire to succeed, discipline to accomplish goals, and a determined, competitive work-ethic. Motivation has been operationally defined as an internal state that drives actions and behaviors and influences the persistence, direction, and intensity of these actions (Hagger and Chatzisarantis, 2011; Kleinginna & Kleinginna, 1981). Motivation commonly has been reported as one of the most important aspects of mental toughness (Fourie & Potgieter, 2011) and has been researched extensively within sport and performance psychology (Jones et al., 2007; Loehr, 1986; Weinberg, Butt, & Culp, 2011). Motivation often is separated into factors that are internal or intrinsic (e.g., “I love playing volleyball”) or external or extrinsic (e.g., “I play volleyball, so I can attend this college for free”). Ryan and Deci’s (2007) Self-determination Theory (SDT) places an athlete’s motivation on a continuum between intrinsic and extrinsic and proposes that the three psychological needs of autonomy, competence, and relatedness dictate how internally motivated an individual will be to participate in tasks. Autonomy refers to an individual’s feeling that they are willfully or freely choosing to initiate in behaviors (Deci & Ryan, 1987). Competence refers to a need to perceive that an individual is capable of effectively carrying out a behavior (Deci, 1975), while relatedness refers to the need for relational connection and a sense of belonging within a group (Ryan, 1995). It is posited that

if athletes perceive their needs of autonomy, competence, and relatedness as being met, they will experience higher levels of intrinsic motivation, which will enhance an individual's enjoyment and satisfaction within sport and require less external rewards to motivate behavior (Vallerand, 2007; Deci & Ryan, 2000).

Effectively dealing with adversity and failure. Effectively dealing with adversity and failure is the ability to learn from failure and recover from adversity with determination. Additionally, effectively dealing with adversity and failure involves the theoretical principle of learned optimism. This is a construct coined by Seligman (2006) that indicates that how one attributes events in their life (i.e., explanatory style) will significantly influence an individual's ability to effectively deal with adversity. Individuals commonly possess either an (a) optimistic, or a permanent, universal, internal explanation for good events, while having a specific, temporary, or external explanation for bad events, or a (b) pessimistic, or permanent, universal, and internal explanation for bad events and a temporary, specific, and external explanation for good events (Seligman, 2006). Rettew and Reivich (1995) found that teams that possessed an optimistic explanatory story won more games than teams with a pessimistic explanatory style and performed better following bad events (e.g., slumps) than teams with a pessimistic explanatory style. This construct is similar to the entity vs. incremental theory of intelligence, which posits that beliefs about oneself significantly influence motivation and resilience (Dweck, 2000). An entity view refers to an individual believing that intelligence is fixed and stable, whereas an incremental view refers to an individual believing that intelligence is malleable, fluid, and changeable. Dweck's research recently has been popularized through the terms growth (i.e., incremental) and fixed (i.e., entity) mindset (Dweck, 2014) and indicates that individuals

that foster a growth mindset are more likely to persist through obstacles and reach their potential as compared to individuals that possess a fixed mindset.

Overcoming pain and hardship. Harmison (2011) also cites the ability to overcome physical/emotional pain and hardship as an attribute of mental toughness. This includes athletes' willingness to push their bodies through emotional and physical pain and challenging themselves when experiencing physical or emotional discomfort. Overcoming pain and hardship is grounded in the theoretical principles of psychological hardiness and resilience. Psychological hardiness involves one's attitudes and beliefs about control (e.g., "I can influence events in my life"), commitment (e.g., "I have a deep sense of purpose in what I am doing"), and challenge (e.g., "I see stressful situations as opportunities to grow") (Maddi, 2004). Resilience has been defined as "the process of coping with disruptive, stressful, or challenging life events in a way that provides the individual with additionally protective and coping skills than prior to the disruption that results from the event" (Richardson, Neiger, Jenson, & Kumpfer, 1990, pg. 34). Research on resiliency has evolved from identifying resilient qualities and understanding the process of developing resiliency, to identifying motivational forces that foster activation of resiliency within individuals and groups (Richardson, 2002).

High level athletes, such as those competing at the international level, have been found to possess higher levels of hardiness than lower level athletes (Sheard & Golby, 2010). Jones, Hanton, and Connaughton, (2002) indicated that the ability to maintain technique and effort while pushing one's own boundaries of physical and emotional pain was an important theme of mental toughness within elite athletes. Gucciardi et al. (2008) also found that Australian Football players and coaches identified that the ability to persist through pain was an important attribute to successful outcomes in their sport.

Successfully managing anxiety, pressure, and other emotions. Successfully managing anxiety, pressure, and other emotions involves the use of self-regulation skills and the ability to thrive under pressure. Hanin's (2000) Individual Zone of Optimal Functioning Model indicates that emotions in performance have a unique time context and may shift or change during different situational contexts (e.g., pre-performance, during performance, post-performance). Positive emotions may impact motivational states and lead to more persistence and commitment (Erez & Isen, 2002), while higher levels of anxiety lead to performance detriments (Wilson, Smith & Holmes, 2007) or choking (i.e., failing to perform despite having the skill and ability at the time; Baumeister, 1984). Harmison (2011) posits that mentally tough athletes experience anxiety and negative emotions but have developed coping skills to manage emotions during performance.

Maintaining present moment focus. The self-regulation skill of staying focused in the present moment and sustaining attention on relevant tasks regardless of environmental distractions has been cited as a characteristic of mentally tough performers. Harmison's present moment focus framework is taken from Summers and Moran's (2011) dimensions of attention: selectivity (attention to the most relevant aspects of an environment), direction (focus internally or externally), and width (broad or narrow spectrum of focus). Moran (2009) highlighted five principles for effective concentration: (a) deliberate concentration, (b) focusing on one thought at a time, (c) a connection between present moment thoughts and actions, and (d) not focusing on aspects outside of one's control and placing attention on irrelevant stimuli (e) focusing outward when feeling anxious. Additionally, emotions and cognitions may significantly influence an individual's attention in a manner that may enhance or impair performance (Eysenck, Derakshan, Santos, and Calvo, 2007). Wulf, McNevin, Fuchs, Ritter and Toole (2000) demonstrated that an

external attentional focus and a long final visual fixation on a target before executing a skill (i.e., quiet eye) lead to significant increases in performance.

Finding balance and keeping perspective. Finally, finding balance and keeping perspective includes fostering one's own well-being with aspects outside of sport and the ability to compartmentalize and transition between athletic performance and outside life. Jones, Hanton, and Connaughton (2002) found that the ability to "switch sport on and off" (p. 213) was important for elite athletes to maintain mental toughness and high performance. However, the ability to compartmentalize and transition between athletic performance and outside life may be difficult for some athletes. Hammond, Gialloreti, Kubas, and Davis (2013) found that 34% of elite swimmers in their study had clinically elevated Beck Depression Inventory scores following athletic competition, with the top quartile of performers having twice the rate of elevated depression scores. Elite-level athletes found that difficulties compartmentalizing their romantic relationships with athletic obligations was positively related to depressive symptoms and negatively related to sport satisfaction (Jowett & Cramer, 2009). This difficulty may be explained by athletic identity, or the extent to which a person identifies with their role as an athlete, may shape an athlete's self-concept (Brewer, Van Raalte, & Linder, 1993). Brewer et al. also suggested that high reported levels of athletic identity (i.e., how strongly one associates their self-concept with their athletic roles) may force an individual to neglect other aspects of their life to focus on athletics.

The present author believes that mental toughness may serve as a component that fosters well-being. Many of the factors that athletes attribute as mental toughness (e.g., finding balance and maintaining perspective, emotion management, present moment focus) are similar to interventions provided in empirically-supported treatments to treat psychopathology or foster

well-being (Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Robins, Ivanoff, & Linehan, 2000). Therefore, mental toughness may not only aid student-athletes to achieve success in their respective sports, but also manage stress and engage in adaptive habits to foster well-being. Coaches play a crucial role in the development of an athlete's level of mental toughness. The following section introduces the coach-created motivational climate. The section provides a theoretical framework, reviews relevant literature, and articulates the purpose of assessing the coach-created motivational climate in the present study.

Coach-created Motivational Climate

Conroy and Benjamin (2001) theorized that coaches are an important attachment figure in an athlete's life. They stated that previous experiences with coaches can significantly shape an athlete's self-talk and interpersonal patterns through an athlete internalizing messages heard from previous coaches (e.g., "You are mentally weak"). Motivational climate refers to the messages, behaviors, values, and attitudes that are communicated to individuals and influence their perspectives on effort and achievement (Roberts, Treasure, & Conroy, 2007). Based in Ames' (1992) Achievement Goal Theory, the motivational climate can be coach-created, indicating that the relationship between an athlete and coach has a significant influence on the motivation and well-being of a student-athlete (Reinboth & Duda, 2006).

The coach-created motivational climate has been differentiated into two dimensions: task-involving and ego-involving (Ames, 1992). A task-involving motivational climate reinforces learning from mistakes and focusing on effort and self-improvement, whereas an ego-involving motivational climate focuses on demonstrating that one is better than others through comparison and fixed abilities. Reinboth and Duda (2006) suggest that an athlete's perception of a task-involving coach-created motivational climate fosters both well-being and performance

excellence. This is due to athletes perceiving their abilities to be competent in sport through feedback from the coach that provides encouragement, trust, and internal motivation to improve (task-involving), as opposed to messages that emphasize their natural ability, promote social comparison, and praise them for success instead of effort (ego-involving). This construct also can be viewed through Mageau and Vallerand's (2003) coach-athlete relationship motivational model. This model delineates a motivational sequence where factors influencing a coach's autonomy supportive behaviors, a coach's involvement, and structure instilled by a coach influences athletes' perception of their own competence, autonomy, and relatedness, thus fostering adaptive self-determined motivation and well-being.

Reinboth and Duda (2004) also found with British adolescent athletes that an ego-involving climate was a significant positive predictor of contingent self-worth, or feelings about oneself that are dependent on "matching some standard of excellence or living up to some interpersonal or intrapsychic expectations" (Deci & Ryan, 1995, p.32). This indicates that youth athletes' perceived success in their sport significantly influences their well-being, which has been assumed to impair long-term healthy adjustment and well-being (Deci & Ryan, 1995). Youth female handballers from France were more likely to drop out of their sport if their coach was perceived to foster an ego-involving climate (Sarrazin et al., 2002). Findings on the impact of the coach-created motivational climate on well-being also are seen beyond youth sport contexts. At the Olympic level of athletic performance, athletes with lower perceptions of their own ability reported the coach to be a significant source of distress when coaches emphasized ego-involvement over task mastery (Pensgaard & Roberts, 2000). Pensgaard and Roberts (2003) also found that female Olympic athletes with high perceptions of ego-orientation utilized less

active coping and planning strategies and used more denial strategies than high task orientation female athletes.

While there are studies assessing coach-created motivational climate at the youth (Reinborth & Duda, 2004), high school (Beck, 2014), and Olympic levels (Pensgaard & Robers, 2003) of competition, there is scant literature on the impact of the coach-created motivational climate at the NCAA level. Poux and Fry (2015) found that high perceptions of a task-involving motivational climate were positively associated with high career-self efficacy and exploration in NCAA Division I student-athletes. Due to the unique cultural context of NCAA athletics, this absence of studies on motivational climate with college student-athletes suggests that further investigation of the impact of the coach-created motivational climate on college student-athletes' well-being would be highly beneficial.

Purpose of the Present Research

The purpose of this study was to explore the relationship between college student-athletes' self-ratings of mental toughness, perceptions of the coach-created motivational climate, and well-being. More specifically, the author aimed to address the question if college student-athletes' self-ratings of mental toughness and perceptions of a coach-created motivational climate predict student-athletes' self-ratings of well-being. Based on the research question, the author proposed the following hypotheses:

1. Well-being scores will be positively predicted by self-ratings of mental toughness. Since mental toughness is conceptualized as a set of traits and abilities that aid an individual with adaptively managing the demands of the competitive environment and subsequent athletic performance (Harmison, 2011), mental toughness may be considered a characteristic adaption in line with CAST (Henriques, 2017). Thus, mental toughness may influence an

athlete's ability to cope with adversity and find purpose both within and outside sport, thus fostering high well-being.

2. Well-being scores will be positively predicted by high task-involving coach-created motivational climate scores. More specifically, a high task-involving coach-created motivational climate that emphasizes effort, cooperation, and role value will be predictive of higher levels of well-being. Previous findings suggest that an athlete's perception of a task-involving coach-created motivational climate fosters well-being (Beauchemin, 2014; Pensgaard & Roberts, 2002; Reinboth & Duda, 2006).
3. Well-being scores will be negatively predicted by high ego-involving motivational climate scores. This suggests that a coach-created motivational climate that emphasizes natural ability, promotes social comparison, and praises success over effort will be predictive of lower levels well-being, as evidenced by Pensgaard and Roberts (2002).
4. Self-ratings of mental toughness and motivational climate scores will interact to predict well-being scores. As there is preliminary evidence to support a relationship between mental toughness and a coach-created motivational climate (Beck, 2014), the present author hypothesizes that the interaction between these two variables will predict well-being scores.

CHAPTER 3. METHOD

Participants

Student-athletes were recruited from a mid-Atlantic NCAA Division I university athletic department in the United States. A total of 131 student athletes were recruited to participate in the study. There were 15 males (11.4%) and 117 females (88.6%). Correlations between variables analyzed by gender revealed different relationships between mental toughness and coach-created motivational climate. Because of differences and the small number of male participants, only data obtained from the female participants were analyzed and reported for this study. Additionally, participants with missing data were excluded from analysis. Therefore, the sample size for this study included 102 female student-athletes. Ages ranged from 18 to 21 years ($M = 19.5$, $SD = 1.01$), and the sample consisted of 39 freshmen (38.2%), 32 sophomores (31.4%), and 31 juniors (30.4%) Ninety-three (91.2%) of the participants identified as White, seven (6.9%) as Black or African American, and two (2%) identified as multiracial. These data are compared to this university's overall demographic enrollment, which identifies as White (75%), Black or African American (5%) and multiracial (4%) (James Madison University, 2018). Sports represented in the sample included cross country, field hockey, lacrosse, softball, swimming and diving, volleyball, track and field, and soccer.

Measures

Henriques 10-item Well-being Scale. The Henriques 10-item Well-being Scale (H10WB; Henriques, unpublished) is a 10-item self-report measure of well-being. Participants rate their current (past month) functioning in 10 areas of well-being. The 10 items are on a 7-point Likert scale (1 = very low, 7 = very high). Participants rate their functioning in 10 areas of well-being: life satisfaction, environmental mastery, emotional health, relations with others,

autonomy, self-acceptance, satisfaction with academic functioning, health and fitness, sense of purpose, and personal growth. A total score is calculated by summing the item scores which provides a measure of an individual's overall well-being. Anmuth (2016) found that the H10WB total well-being score demonstrated good internal consistency ($\alpha=.83$). Reliability analysis for the H10WB with the current sample also revealed good internal consistency ($\alpha=.87$). See Appendix A for the complete questionnaire.

Mental Toughness in Sport Questionnaire-25. The Mental Toughness in Sport Questionnaire-25 (MTSQ-25; Harmison, 2008) is a 25-item questionnaire intending to measure an athlete's mental toughness in sport. The 25 items are on a 7-point Likert scale (1 =strongly disagree, 7 = strongly agree) that assesses the extent to which participants endorse various mentally tough values, attitudes, beliefs, emotions, and self-regulation skills. Foelber's (2014) confirmatory factor analyses on the MTSQ-31 found preliminary support for a five-factor attribute model. A total score is calculated by summing the item scores which provides a measure of an athlete's overall level of mental toughness. Reliability analysis for the MTSQ-25 with the current sample revealed good internal consistency ($\alpha=.89$). See Appendix B for the complete questionnaire.

Perceived Motivational Climate in Sport Questionnaire-2. The Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2; Newton, Duda, & Yin, 2000) is a 33-item questionnaire that assesses athletes' perceptions of the goal perspectives(s) emphasized by their coach. The 33 items are on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) and comprise two higher-order factors that reflect the different motivational climates, Task-Involving and Ego-Involving. The three subscales of the Task-Involving climate include: Cooperative Learning (e.g., "On this team, players help each other learn"), Effort/Improvement

(e.g., “On this team, trying hard is rewarded”), and Important Role (e.g., “On this team, each player contributes in some important way”). The three subscales of the Ego-Involving climate include: Unequal Recognition (e.g., “On this team, the coach has his or her own favorites”), Intra-team Member Rivalry (e.g., “On this team, players are encouraged to outplay the other players”), and Punishment for Mistakes (e.g., “On this team, players are taken out of a game for mistakes”). Task-Involving and Ego-Involving scale scores are calculated by summing the three subscale scores within each factor. Higher scale scores indicate a stronger perception of that motivational climate occurring within the student-athlete’s sport (e.g., more task-involving or ego-involving climate). Studies on the validity and reliability of the PMCSQ-2 have indicated that the subscales loaded as expected onto the two factors and internal consistency was found to be acceptable for higher-order scales and subscales (Newton, et al., 2000). Reliability analysis for the PMCSQ-2 Task Involving scale ($\alpha=.92$) and Ego-Involving scale ($\alpha=.90$) with the current sample also revealed good internal consistency. See Appendix C for the complete questionnaire.

Procedure

The study was granted approval by the James Madison University Institutional Review Board. Varsity coaches and athletic trainers were contacted by the researcher via e-mail to recruit student-athletes to participate in the study. Once permission to recruit the athletes was granted, the author scheduled a time for each team to complete an online survey at a computer lab on the university campus during August and September. The participants were provided with a short verbal advertisement by the author to inform them of the purpose of the study and describe that the study was voluntary. The author also informed participants of their right to confidentiality and that they could withdraw from the study at any time.

Participants were instructed to sit at a computer and access a web link to the survey. The survey was constructed and implemented via Qualtrics, which is an online survey creation and administration tool. Upon accessing the web link, participants were presented with an additional written informed consent page. After consenting to participate in the study, participants completed a series of questionnaires including the MTSQ-25. Demographic information was collected at the end of the packet as to not influence participants' responses according to gender or race effects. Participants typed their name into the survey and a digit code was created by the author. This assignment of subject codes was to ensure that the data could be tracked longitudinally while still being analyzed in a confidential manner. The administration of the survey took approximately 10-15 minutes.

In April and May of the same academic year, additional data was collected from the participants of the study while completing their exit physical examinations for the university season. Participants not engaging in tasks for their physical examination were recruited by the author to voluntarily complete a 10-15-minute online survey. The participants were provided a Qualtrics web link to informed consent for the survey. Upon consenting to participate in the study, participants completed an online questionnaire that contained the PMSCQ-2. Demographic information was collected at the end of the packet as to not influence the participants' responses according to gender or race effects. Additionally, the participants were instructed to provide their name on the survey, so the author could match their data with the first timepoint of data collection. Data was then coded through a number to de-identify the participants. Administration of the H10WB at this time was completed by the team physician of the university athletic department as a part of a large well-being screening process administered by the university athletic department. The author was given permission to confidentially access

the participant's H10WB responses and manually input them into the data set. A data sheet with names and codes of the participants was encrypted and stored on a separate encrypted hard drive to protect confidentiality.

CHAPTER 4. RESULTS

Preliminary Analyses

Any participants that had missing responses in their surveys were excluded from data analysis. To identify and exclude missing data, surveys were screened using SPSS using a Missing Values Analysis (MVA). After the MVA, survey responses from 102 participants were analyzed for the study. Prior to analysis, all scores were standardized and changed into continuous variables (z-scores) to address potential issues related to multicollinearity (Belsley, 1991). Descriptive statistics were computed to verify that standardization worked. Results found that all standardized variables had a mean of zero and a standard deviation of 1. Correlation and multiple regression analyses were conducted to examine the relationship between well-being scores and selected independent variables (mental toughness total scores, task-oriented motivational climate scores, ego-oriented motivational climate scores). Bivariate correlations revealed positive relationships between well-being scores and both mental toughness total scores ($r = .43, p = < .001$) and task-oriented motivational climate scores ($r = .33, p = < .001$). Well-being scores were negatively correlated with ego-oriented motivational climate scores ($r = -.36, p = < .001$) (See Table 1).

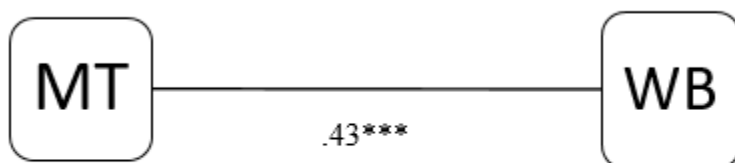
Table 1
Correlations between Well-being, Mental Toughness, and Perceived Motivational Climate Scores for a Sample of NCAA Division I Female Student-Athletes

Variables	1	2	3	4	<i>M</i>	<i>SD</i>
1. Well-being	-				57.5	6.6
2. Mental Toughness	.43**	-			123.9	16.1
3. Task-Involving climate	.33**	.27*	-		71.7	8.4
4. Ego-Involving climate	-.36**	-.03	-.40**	-	42.7	10.1

Note. * $p < .05$, ** $p < .001$; $n = 102$.

Relationship Between Well-Being and Mental Toughness

A linear regression model was built to predict well-being scores from mental toughness total scores, task-involving motivational climate scores, and ego-involving motivational climate scores. Mental toughness scores were entered first, followed by task-involving motivational climate scores and ego-involving motivational climate scores. The first model (see Figure 1) with mental toughness scores ($b = .43, SE = .09, t = 4.77, p < .001$) explained 17% of the variance ($R^2 = .177, F(1, 100) = 22.78, p < .001$) in well-being scores.



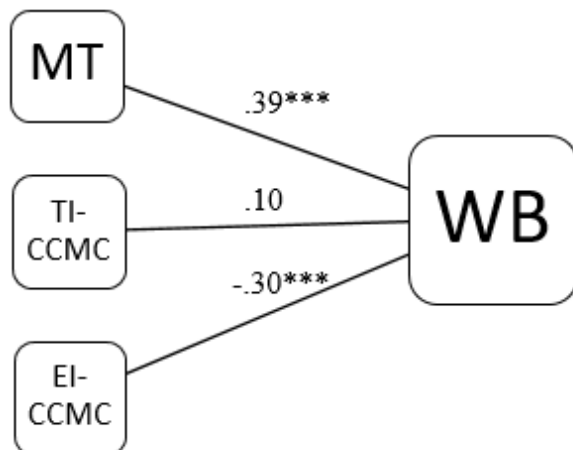
Note. *MT* = Mental Toughness, *WB* = Well-Being
 * $p < .05$, ** $p < .001$; $n = 102$.

Figure 1. Relationship Between Well-Being and Mental Toughness in a Sample of NCAA Division I Female Student-Athletes (Model 1).

Relationship Between Well-Being, Mental Toughness, and Coach-Created Motivational Climate

The second model (see Figure 2) with three predictors (mental toughness, task-involving motivational climate, and ego-involving motivational climate) explained 31% of the variance ($R^2 = .313, F(3, 98) = 14.90, p < .001$) in well-being scores. It was found that mental toughness scores ($b = .39, SE = .08, t = 4.46, p < .001$) significantly and positively predicted well-being scores, while ego-involving motivational climate ($b = -.30, SE = .09, t = -3.27, p < .001$) significantly and negatively predicted well-being scores. Task-involving motivational climate scores were not found to be a significant predictor of well-being scores ($b = .10, SE = .09, t =$

1.13, $p = .259$).



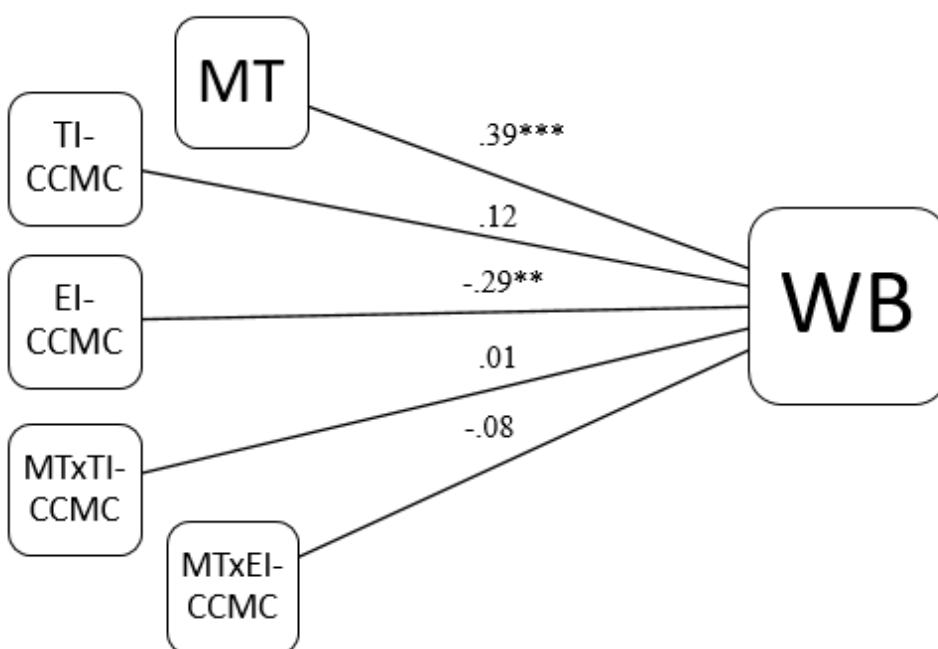
Note. *MT* = Mental Toughness, *WB* = Well-Being, *TI-CCMC* = Task-Involving Coach-Created Motivational Climate, *EI-CCMC* = Ego-Involving Coach-Created Motivational Climate
 * $p < .05$, ** $p < .001$; $n = 102$.

Figure 2. Relationship Between Well-Being, Mental Toughness, and Coach-Created Motivational Climate in a Sample of NCAA Division I Female Student-Athletes (Model 2).

Relationship Between Well-Being, Mental Toughness, Coach-Created Motivational Climate, and Interactions between Coach-Created Motivational Climate and Mental Toughness

The third model (see Figure 3) with five predictors (mental toughness, task-involving motivational climate, ego-involving motivational climate, the interaction between mental toughness and task-involving motivational climate, and the interaction between mental toughness and ego-involving motivational climate) explained 32% of the variance ($R^2 = .321$, $F(5, 96) = 9.077$, $p < .001$) in well-being scores. It was found that mental toughness scores ($b = .39$, $SE = .08$, $t = 4.42$, $p < .001$) significantly and positively predicted well-being scores, while ego-involving motivational climate scores ($b = -.29$, $SE = .09$, $t = -3.09$, $p < .005$) significantly and

negatively predicted well-being scores. Task-involving motivational climate scores ($b = .12$, $SE = .09$, $t = 1.23$, $p = .221$), the interaction between mental toughness and task-oriented motivational climate scores ($b = .06$, $SE = .09$, $t = .16$, $p = .872$), and the interaction between mental toughness and ego-oriented motivational climate scores ($b = -.08$, $SE = .09$, $t = -.85$, $p = .396$), were not found to be significant predictors of well-being scores (see Table 2).



Note. *MT* = Mental Toughness, *WB* = Well-Being, *TI-CCMC* = Task-Involving Coach-Created Motivational Climate, *EI-CCMC* = Ego-Involving Coach-Created Motivational Climate, *MTxTI-CCMC* = Interaction between Mental Toughness and Task-Involving Coach-Created Motivational Climate, *MTxEI-CCMC* = Interaction between Mental Toughness and Ego-Involving Coach-Created Motivational Climate

* $p < .05$, ** $p < .001$; $n = 102$.

Figure 3. Relationship Between Well-Being, Mental Toughness, Coach-Created Motivational Climate, and Interactions Between Coach-Created Motivational Climate and Mental Toughness in a Sample of NCAA Division I Female Student-Athletes (Model 3).

Table 2

Hierarchical Ordinary Least Squares Regression Models Estimating Effects of Mental Toughness and Perceived Motivational Climate Scores on Well-being Scores in a Sample of NCAA Division I Female Student-Athletes

Variables	Model 1			Model 2			Model 3		
	B	SE	β	B	SE	β	B	SE	β
Mental Toughness	.43	.09	.431***	.39	.08	.390***	.39	.08	.391***
Task-Involving MC				.10	.09	.109	.12	.09	.120
Ego-Involving MC				-.30	.09	-.301***	-.29	.09	-.293***
MT x Task-Involving MC							.01	.09	.015
MT x Ego-Involving MC							-.08	.09	-.08
F		22.78***			14.90***			9.07***	
Adjusted R ²		.177***			.292***			.286***	
Change in Adjusted R ²					.128***			.008	

Note. MC = Motivational Climate; MT = Mental Toughness; * $p < .05$, ** $p < .01$, *** $p < .001$

CHAPTER 5. DISCUSSION

The purpose of this study was to explore if college student-athletes' self-ratings of mental toughness and their perceptions of the coach-created motivational climate predicted well-being. Numerous studies have investigated these constructs independently with student-athletes (Amorose, Anderson-Butcher, & Cooper, 2009; Blanchard, Amiot, Perreault, & Vallerand, 2009; Deci & Ryan, 2008; Reinboth & Duda, 2006; Harmison, 2011; Roberts, Treasure, & Conroy, 2007; Reinboth & Duda, 2006; Pensgaard & Roberts, 2000). However, our study was the first to assess if female student-athlete well-being was predicted by mental toughness and perceptions of the coach-created motivational climate. Findings from regression analysis indicated that well-being was predicted by mental toughness and perceptions of the coach-created motivational climate.

The author's first hypothesis postulated that student-athletes' self-ratings of mental toughness would positively predict self-ratings of well-being. The findings from the present study confirm this hypothesis, as mental toughness was shown to independently predict 17% of the variance in overall well-being. This finding provides initial evidence that the constructs of mental toughness and well-being have a conceptual relationship.

The well-being measure used in the study primarily assessed a student-athlete's self-rating of well-being (domain 1 of the NM). However, the NM also theorizes that well-being is influenced by one's health and functioning (domain 2 of the NM), which includes a psychological component broadly characterized as one's personality separated into three different domains (i.e., temperaments and traits, characteristic adaptations and identity, and adaptive potentials). Harmison's (2011) social-cognitive framework of mental toughness also involves a combination of inherited personality constructs (Horsburgh, Schermer, Veselka, &

Vernon, 2009) and learned, dynamic aspects that can be cultivated and developed. Based on these conceptual connections, the author proposes that the seven attributes that contribute to Harmison's (2011) mental toughness framework (confidence, summoning motivation and desire, effectively dealing with adversity and failure, overcoming pain and hardship, managing anxiety, pressure, and other emotions, sustaining focus, and finding balance and keeping perspective) may provide further explanation of components within the NM's domains of personality functioning outlined by Henriques et al. (2014). For example, the ability to feel confident, sustain focus, and manage emotions during adverse experiences are theoretically proposed components of mental toughness (Harmison, 2011), but may also overlap with Henriques et al.'s (2014) conceptualization of adaptive potentials (one's skills and abilities to function effectively in the environment). These abilities may foster a student-athlete's ability to engage in mental behaviors that evoke positive feeling states and life satisfaction. This study is the first known of its kind to provide empirical evidence that well-being and mental toughness possess a conceptual relationship.

The present study also provides evidence that coaches play a pivotal role in shaping a student-athlete's well-being. The author's second hypothesis postulated that perceptions of a task-involving coach-created motivational climate would positively predict well-being. While findings indicated that the perception of a task-involving coach-created motivational climate was positively correlated with well-being, the task-involving coach-created motivational climate was not a significant predictor of well-being within the regression model. Thus, the author's second hypothesis was not supported.

This finding can be better understood when considering the findings related to the author's third hypothesis, which postulated that perceptions of an ego-involving motivational

climate would negatively predict well-being. The results supported this hypothesis and demonstrated that perceptions of an ego-involving coach-created motivational climate marked by unequal recognition, intra-team member rivalry, and punish for mistakes negatively predicted well-being. Previous studies indicated that higher perceptions of a task-involving climate lead to higher reported levels of well-being (Reinboth & Duda, 2006). However, the results of this study suggest that the perception of an ego-involving coach-created motivational climate may be a more significant variable to consider when understanding the well-being of college female student-athletes. These findings that an ego-involving climate accounts for more model variance may be explained by previous studies that demonstrate the power of negative salience over positive events (Baumeister, Bratslavsky, Finkenaur, & Vohs, 2001). The perception of ego-involving messages may significantly shape the beliefs, values, and justifications of a female student-athlete more significantly than task-involving messages, thus providing a more significant impact to well-being.

For example, a female student-athlete may begin to doubt her abilities to master the environment (sport context) after repeated feedback from her coach that is perceived to be punishment because she is having difficulties repeating the motor skills to complete the desired task. The coach's feedback may shift from task-involving and behavioral to characterological and ego-involving . The coach may begin to spend more time providing feedback to another student-athlete as a means of "sending a message" to the struggling student-athlete that the coaches will only work with the ones that "really want it." The student-athletes performing well then may begin to express their frustration at the struggling student-athlete's level of performance and could be praised for doing so by the coaching staff as a means of "toughening up" the struggling student-athlete. The student-athlete may interpret the messages from her

teammates as hostile, which could impair the quality of her relationships within the team. Furthermore, the student-athlete may begin to engage in self-critical cognitions that impair self-acceptance and feelings of growth, potentially leading the athlete to question her purpose (within athletic context) on the team and satisfaction of life. While this example does not include other factors that may influence well-being, such as mental toughness or perception of identity as a student-athlete (e.g., how strongly the person identifies with a belief or values system; Marcia, 1966), it highlights how the present study's findings may inform coaches on how their motivational climate can impact student-athlete well-being.

The author's fourth hypothesis postulated that mental toughness and perceptions of the motivational climate will interact to predict well-being. While the results of the present study suggest that mental toughness and perceptions of the coach-created motivational climate predict female student-athlete well-being independently, interactions between mental toughness and perceived motivational climate were not found to predict well-being. Thus, mental toughness does not appear to moderate the relationship between perceptions of the coach-created motivational climate and well-being in college female student-athletes. Although previous studies have found a relationship between mental toughness and the coach-created motivational climate (Beck, 2014), the findings of the present study suggest that this interaction does not directly predict well-being. One possible explanation for the difference in study results is that Beck (2014) included male student-athletes in the study, whereas the present study only included female-student athletes. This may indicate that for female student-athletes, there may be a greater salience to the coach-athlete relationship determining how much the coach-created motivational climate influences well-being. This may be different than male student-athletes, whom may have an interacting relationship between mental toughness and motivational climate predicting well-

being. Further studies may gender differences in the relationships between mental toughness and motivational climate may influence well-being.

Limitations

There are several limitations to this study that warrant discussion. The first is that the nature of all the survey reporting was self-report, meaning that biased or inaccurate responding was possible. Additionally, Henriques et al.'s (2014) NM is a multidimensional theory of well-being that holistically examines well-being. As the study assessed well-being through self-report measures, the present data may not fully examine all the nested components outlined by the NM and may render an incomplete picture of a student-athlete's well-being. Future studies may strive to utilize other methods of data acquisition to gather a fuller conceptualization of a student-athlete's well-being, such as Anmuth's (2016) psychological check-up that assesses well-being within the Unified Approach.

Of note to self-reporting was the acquisition of H10WB well-being surveys through a previously administered well-being screening process that was conducted by the university athletic department. Since the H10WBs were released by medical staff of the university athletic department for research use after consent to participate in study was agreed by the student-athlete, it was possible that student-athletes responded to well-being screeners in a biased manner to avoid further assessment of mental health by university athletic department medical staff. Further studies should administer H10WB surveys independent to athletic department screening devices. This may provide less positive bias in data responding and provide a more accurate reflection of a student-athlete's well-being.

A further administration limitation was the longitudinal acquisition of data throughout the student-athlete's academic year. Due to logistical difficulties of communicating, scheduling, and

administering multiple timepoints of data collection, data was only collected in early months of a student-athlete's academic year (August-September), and end of their academic year (May-June). As different teams assessed have different season schedules, some student-athletes may have rated their well-being while still in-season, or even up to seven months after their season ended. While many Division I teams have practice schedules that occur throughout the year, it may be possible that well-being scores varied in how significant their sport contributed to their well-being at that time. Future studies may attempt to assess well-being at equal times within a season (e.g., 1 week after season end) to obtain more consistent reporting of well-being scores.

A limitation of note is the use of only female student-athletes from a single NCAA Division I university. Gender differences may exist in how motivational climate and mental toughness predict well-being. Additionally, the results of the study may reflect a unique cultural context of a NCAA Division I university and may not generalize towards other collegiate athletic ranks (e.g., Division II, community college). Future studies may investigate gender differences in findings, especially regarding the effect of the perception of an ego-oriented motivation climate on well-being for male college student-athletes.

Directions for Future Research

The findings of this study may provide initial support that the alignment of a student-athlete's preferred motivational climate with a coach's creation of motivational climate may influence well-being. Further examination of fit between athlete's preferred motivational climate and perception of coach-created motivational climate may provide insight on how fit of motivational climate may influence well-being. For example, if a student-athlete prefers a task-oriented motivational climate that emphasizes effort and improvement, feeling valued, and cooperative learning, but perceives their motivational climate to promote intra-team rivalry,

unequal recognition, and punishment for mistakes, then the student-athlete's well-being may be impaired.

Further directions of study may also seek to examine other variables that may influence student-athlete well-being, such as athletic identity, athletic performance, within-team relationships, and family context. These variables may provide more insight on bio-psycho-social factors that may expand the initial model of student-athlete well-being found in the present study. In future studies, it may be beneficial to develop a norm-referenced H10WB with questions assessing issues pertaining to student-athletes, such as satisfaction with athletic performance, relationship with coaches, relationship with teammates, and financial stress (to assess impact of scholarship or socioeconomic status on well-being). Utilization of multiple assessment timepoints for well-being also may provide insight on how a student-athlete's well-being may fluctuate over the course of an athletic season. This would aid practitioners in identifying critical times during seasons when mental-health interventions or recovery practices could be emphasized to coaches, athletes, and support staff.

Implications for Practice

For applied sport psychologists, the findings of the study emphasize the importance of providing mental toughness interventions as means of fostering well-being through the development of coping skills. Sport psychology practitioners may aid student-athletes in building confidence, determination, or relaxation skills that can be generalized from the performance environment to personal life. Additionally, for mental health professionals working with student-athletes, it is encouraged to aid athletes in identifying multiple factors that may influence their well-being. It may be helpful to foster insight on previous experiences where student-athletes coped with adversity in sport and explore how they can utilize those skills to manage other

stressors in one's life. For example, if a softball player is reporting low well-being due to negative attributions of self-worth and a lack of purpose, exploring a time when she was able to overcome a difficult slump may be helpful. The practitioner can encourage the student-athlete to use the same skills (e.g., problem assessment, goal-setting, reappraisal) and apply it to her behaviors off the field.

For coaches of college-student athletes, it is encouraged to understand their own motivational orientation and the preferred motivational climate of student-athletes on their team. Additionally, medical professionals within an athletic department are encouraged to develop an interprofessional team that has ability to holistically assess and provide well-being interventions from the perspective of the NM.

Conclusion

This study examined the relationship between female college student-athletes' well-being, their self-ratings of their mental toughness in sport, and their perceptions of the coach-created motivational climate. The results identified that mental toughness and perceptions of a coach-created motivational climate predict student-athlete well-being. The findings also suggested that the presence of an ego-involving coach-created motivational climate may impair well-being for female student-athletes. These discoveries provide initial evidence for an integrative model of student-athlete well-being. This model may aid practitioners in developing psychoeducational interventions on the importance of fostering mental toughness and structuring a task-involving motivational climate for female student-athletes. Future directions of study should further investigate male student-athlete well-being and other bio-psycho-social factors that may contribute to the initial model of student-athlete well-being.

Appendix A

The Henriques-10 Well-Being (H10WB)

Below are a series of ten statements that describe an attribute associated with your life and functioning and then describe the low and high ends of that attribute. Please read each item carefully, and then circle the appropriate number on the scale ranging from one to seven indicating where you fall on that attribute. Respond to the item based on how you have generally felt during the past month. There are no right or wrong answers, so just answer as honestly as you can.

1. Please rate your overall satisfaction with your life. An individual with high life satisfaction feels pleased with most major domains, is at peace with the past, and generally feels fulfilled and content. In contrast, someone with low life satisfaction often wishes things were different, experiences problems in several major areas, and often feels dissatisfied, alienated, or unfulfilled.

Very low in life satisfaction	Low in life satisfaction	Somewhat low in life satisfaction	Neutral or sometimes high and sometimes low in life satisfaction	Somewhat high in life satisfaction	High in life satisfaction	Very high in life satisfaction
1	2	3	4	5	6	7

2. Please rate your sense of mastery over the environment, which is the degree to which you feel competent to meet the demands of your situation. Individuals high in environmental mastery feel they have the resources and capacities to cope, adjust and adapt to problems, and are not overwhelmed by stress. Those with a low level of environmental mastery may feel powerless to change aspects of their environment with which they are unsatisfied, feel they lack the resources to cope, and are frequently stressed or overwhelmed.

Very low in environmental mastery	Low in environmental mastery	Somewhat low in environmental mastery	Neutral or sometimes high and sometimes low in environmental mastery	Somewhat high in environmental mastery	High in environmental mastery	Very high in environmental mastery
1	2	3	4	5	6	7

3. Please rate your degree of emotional health. Someone who is functioning well in this domain is able to experience the full range of emotions, is comfortable with their feelings, and generally feels more positive as opposed to negative emotions (i.e., more joy and excitement relative to frustration and anxiety). In contrast, someone who is having trouble in this domain has difficulty in effectively connecting with their emotions, often feels overwhelmed or afraid of their emotions, and tends to feel more negative than positive emotions.

Very low in emotional health	Low in emotional health	Somewhat low in emotional health	Neutral or sometimes high and sometimes low in emotional health	Somewhat high in emotional health	High in emotional health	Very high in emotional health
1	2	3	4	5	6	7

4. Please rate the overall quality of your relationship with others. An individual with positive relationships feels connected, respected, and well-loved. They can share aspects of themselves, experience intimacy, and usually feel secure in their relations. In contrast, individuals with poor relationships often feel unappreciated, disrespected, unloved, disconnected, hostile, rejected, or misunderstood. They tend to feel insecure and sometimes alone or distant from others.

Very poor relations with others	Poor relations with others	Somewhat poor relations with others	Neutral or sometimes positive and sometimes poor relations with others	Somewhat positive relations with others	Positive relations with others	Very positive relations with others
1	2	3	4	5	6	7

5. Please rate your sense of autonomy. Individuals with high levels of autonomy are independent, self-reliant, can think for themselves, do not have a strong need to conform, and don't worry too much about what others think about them. In contrast, individuals low in autonomy feel dependent on others, are constantly worried about the opinions of others, are always looking to others for guidance, and feel strong pressures to conform to others' desires.

Very low in autonomy	Low in autonomy	Somewhat low in autonomy	Neutral or sometimes high and sometimes low in autonomy	Somewhat high in autonomy	High in autonomy	Very high in autonomy
1	2	3	4	5	6	7

6. Please rate your levels of self-acceptance, which refers to the degree positive attitudes you have about yourself, your past behaviors and the choices that you have made. Someone with high self-acceptance is pleased with who they are and accepting of multiple aspects of themselves, both good and bad. In contrast, individuals with low self-acceptance are often self-critical, confused about their identity, and wish they were different in many respects.

Very low in self-acceptance	Low in self-acceptance	Somewhat low in self-acceptance	Neutral or sometimes high and sometimes low in self-acceptance	Somewhat high in self-acceptance	High in self-acceptance	Very high in self-acceptance
1	2	3	4	5	6	7

7. Please rate your levels of satisfaction with your academic functioning. This refers to how happy you are with your academic performance, what you are learning and your sense that it is preparing you for a fulfilling career. Individuals highly satisfied with their academic functioning are pleased with the grades they get, enjoy the material they are learning and are hopeful about how this is preparing them for future careers they will find fulfilling. In contrast, those dissatisfied with their academic functioning are struggling to get the grades they desire, are frustrated with either what they are learning or their ability to learn the material and are confused, disappointed or anxious about their future career opportunities.

Very low in satisfaction with academic functioning	Low in satisfaction with academic functioning	Somewhat low in satisfaction with academic functioning	Neutral or sometimes high and sometimes low in satisfaction with academic functioning	Somewhat high in satisfaction with academic functioning	High in satisfaction with academic functioning	Very high in satisfaction with academic functioning
1	2	3	4	5	6	7

8. Please rate your levels of satisfaction with your health and fitness. This refers to how happy you are with your bodily health and fitness levels. An individual high in health and fitness does not have chronic health problems, is physically fit, and feels comfortable with their bodies and physical functioning. In contrast, a person who is low in health and fitness experiences chronic health problems, does not have healthy eating, sleeping or exercise patterns, or feels deeply dissatisfied with their bodies or physical functioning.

Very low in satisfaction with health and fitness	Low in satisfaction with health and fitness	Somewhat low in satisfaction with health and fitness	Neutral or sometimes high and sometimes low in satisfaction with health and fitness	Somewhat high in satisfaction with health and fitness	High in satisfaction with health and fitness	Very high in satisfaction with health and fitness
1	2	3	4	5	6	7

9. Please rate the level of your sense of purpose in life. Individual with a high sense of purpose sees their life has having meaning, they work to make a positive difference in the world, and often feel connected to ideas or social movements larger than themselves. Such individuals have a sense that they know what their life is about. Individuals low in this quality often question if there is a larger purpose, do not feel their life makes sense, and attribute no higher meaning or value to life other than the fulfillment of a series of tasks.

Very low in sense of purpose	Low in sense of purpose	Somewhat low in sense of purpose	Neutral or sometimes high and sometimes low in sense of purpose	Somewhat high in sense of purpose	High in sense of purpose	Very high in sense of purpose
1	2	3	4	5	6	7

10. Please rate your level of personal growth. Individuals with high levels of personal growth see themselves as changing in a positive direction, moving toward their potential, becoming more mature, increasing their self-knowledge, and learning new skills. Individuals low in personal growth feel no sense of change or development, often feel bored and uninterested in life, and lack a sense of improvement over time.

Very low in personal growth	Low in personal growth	Somewhat low in personal growth	Neutral or sometimes high and sometimes low in personal growth	Somewhat high in personal growth	High in personal growth	Very high in personal growth
1	2	3	4	5	6	7

Appendix B

The Mental Toughness in Sport Questionnaire-25 (MTSQ-25)

Directions: Below are a set of statements that have been used to describe the mental toughness of athletes. Please read each statement carefully and then circle the number next to each statement that most accurately reflects your feelings about yourself **DURING A COMPETITION OR WHEN YOU COMPETE** in your primary sport. There are no right or wrong answers. Do not spend too much time on any one statement.

Statement	Strongly	Disagree	Moderately	Neutral	Moderately	Agree	Strongly
1. When I compete, I believe in my ability to achieve my goals.	1	2	3	4	5	6	7
2. I never give up when I compete due to my determination to be the best I can be.	1	2	3	4	5	6	7
3. During a competition, my thoughts are focused on what is happening in the present moment.	1	2	3	4	5	6	7
4. I often feel a lot of pressure being placed upon me to succeed when I compete.	1	2	3	4	5	6	7
5. I am able to keep my mind and body relaxed when faced with adversity during a competition.	1	2	3	4	5	6	7
6. I expect myself to thrive on the pressure of competition.	1	2	3	4	5	6	7
7. When I compete, I always remain disciplined in the pursuit of my goals.	1	2	3	4	5	6	7
8. My mind is fully fixed on my sport when I compete, even though life's distractions may come my way.	1	2	3	4	5	6	7
9. When I compete, the pressure I feel to meet others' expectations of me is overwhelming at times.	1	2	3	4	5	6	7
10. I remain calm and do not over think when faced with adversity during a competition.	1	2	3	4	5	6	7
11. When I compete, I believe that I can be one of the very best athletes at my level in my sport.	1	2	3	4	5	6	7
12. I possess a determined work ethic that allows me to achieve my goals during a competition.	1	2	3	4	5	6	7

Statement	Strongly	Disagree	Moderately	Neutral	Moderately	Agree	Strongly
13. When I compete, I am able to block out personal problems so they don't interfere with my performance.	1	2	3	4	5	6	7
14. During a competition, I use negative feelings to improve my performance.	1	2	3	4	5	6	7
15. When I compete, I quickly forget about mistakes and let them go.	1	2	3	4	5	6	7
16. When I compete, I firmly believe that I will win.	1	2	3	4	5	6	7
17. Performing at my best when I compete requires great effort and preparation on my part.	1	2	3	4	5	6	7
18. During a competition, I remain focused on the right thing at the right time.	1	2	3	4	5	6	7
19. I respond with positive feelings during hard times in a competition.	1	2	3	4	5	6	7
20. If I am feeling overly anxious when I compete, I am able to relax my mind and body.	1	2	3	4	5	6	7
21. I have unique strengths that set me apart from everyone else that I compete against.	1	2	3	4	5	6	7
22. When I compete, I perceive tough situations as challenges and stick with it.	1	2	3	4	5	6	7
23. I perform at my best when I compete, regardless of whether my personal life circumstances are good or bad.	1	2	3	4	5	6	7
24. When I compete, I often feel overly tense or worried about how I will perform.	1	2	3	4	5	6	7
25. If I experience failure during a competition, I respond with optimism and hope.	1	2	3	4	5	6	7

Appendix C
Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2)

Directions: Please think about how it has felt to play on your team throughout this season. What is it usually like on your team? Read the following statements carefully and respond to each in terms of how you view the typical atmosphere on your team. Perceptions naturally vary from person to person, so be certain to take your time and answer as honestly as possible. Circle the number that best represents how you feel.

1 =strongly disagree; 2 = disagree; 3 = neither disagree or agree; 4 = agree; 5 =strongly agree

1. On this team, the coach wants us to try new skills.	1	2	3	4	5
2. On this team, the coach gets mad when a player makes a mistake.	1	2	3	4	5
3. On this team, the coach gives most of his or her attention to the stars.	1	2	3	4	5
4. On this team, each player contributes in some important way.	1	2	3	4	5
5. On this team, the coach believes that all of us are crucial to the success of the team.	1	2	3	4	5
6. On this team, the coach praises players only when they outplay team-mates.	1	2	3	4	5
7. On this team, the coach thinks only the starters contribute to the success of the team.	1	2	3	4	5
8. On this team, players feel good when they try their best.	1	2	3	4	5
9. On this team, players are taken out of a game for mistakes.	1	2	3	4	5
10. On this team, players at all skill levels have an important role on the team.	1	2	3	4	5
11. On this team, players help each other learn.	1	2	3	4	5
12. On this team, players are encouraged to outplay the other players.	1	2	3	4	5
13. On this team, the coach has his or her own favorites.	1	2	3	4	5
14. On this team, the coach makes sure players improve on skills they're not good at.	1	2	3	4	5
15. On this team, the coach yells at players for messing up.	1	2	3	4	5
16. On this team, players feel successful when they improve.	1	2	3	4	5
17. On this team, only the players with the best 'stats' get praise.	1	2	3	4	5
18. On this team, players are punished when they make a mistake.	1	2	3	4	5
19. On this team, each player has an important role.	1	2	3	4	5
20. On this team, trying hard is rewarded.	1	2	3	4	5
21. On this team, the coach encourages players to help each other.	1	2	3	4	5
22. On this team, the coach makes it clear who he or she thinks are the best players.	1	2	3	4	5
23. On this team, players are 'psyched' when they do better than their team-mates in a game.	1	2	3	4	5
24. On this team, if you want to play in a game you must be one of the best players.	1	2	3	4	5
25. On this team, the coach emphasizes always trying your best.	1	2	3	4	5
26. On this team, only the top players 'get noticed' by the coach.	1	2	3	4	5
27. On this team, players are afraid to make mistakes.	1	2	3	4	5
28. On this team, players are encouraged to work on their weaknesses.	1	2	3	4	5
29. On this team, the coach favours some players more than others.	1	2	3	4	5
30. On this team, the focus is to improve each game/practice.	1	2	3	4	5
31. On this team, the players really 'work together' as a team.	1	2	3	4	5
32. On this team, each player feels as if they are an important team member.	1	2	3	4	5
33. On this team, the players help each other to get better and excel.	1	2	3	4	5

References

- Ames, C. (1992). Achievement goals, motivational climate, and motivational process. In G. C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 161-176). Champaign, IL: Human Kinetics.
- Amorose, A. J., Anderson-Butcher, D., & Cooper, J. (2009). Predicting changes in athletes' well-being from changes in need satisfaction over the course of a competitive season. *Research Quarterly for Exercise and Sport*, 80(2), 386-392.
- Anmuth, L. M. (2016). *The development of a psychological check-up: assessing character and well-being via the unified approach* (Unpublished doctoral dissertation). Available from James Madison University Scholarly Commons.
- Aoyagi, M. W., & Portenga, S. T. (2010). The role of positive ethics and virtues in the context of sport and performance psychology service delivery. *Professional Psychology: Research and Practice*, 41(3), 253-259.
- Aoyagi, M. W., Portenga, S. T., Poczwardowski, A., Cohen, A. B., & Statler, T. (2012). Reflections and directions: The profession of sport psychology past, present, and future. *Professional Psychology: Research and Practice*, 43(1), 23-28.
- Aristotle, (1984). *The complete works of Aristotle*. In J. Barnes (Ed.). Princeton: Princeton University Press.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bartone, P. T. (2007). Test-retest reliability of the Dispositional Resilience Scale-15, a brief hardiness scale. *Psychological Reports*, 101, 943-944.

- Baumeister, R. F. (1984). Choking under pressure: Self-consciousness and paradoxical effects of incentives on skillful performance. *Journal of Personality and Social Psychology*, 46 (3), 610-620.
- Beauchemin, J. (2014). College student-athlete wellness: An integrative outreach model. *College Student Journal*, 13, 268-280.
- Beck, N. (2014). *The relations between perceived parent, coach, and peer-created motivational climates, goal orientations, and mental toughness in high school varsity athletes* (Unpublished doctoral dissertation). Available from University of North Texas Digital Library.
- Belsley, David Alan (1991) *Conditioning diagnostics: Collinearity and weak data in regression*. New York: Wiley.
- Blanchard, C. M., Amiot, C. E., Perreault, S., & Vallerand, R. J. (2009). Cohesiveness, coach's interpersonal style and psychological needs: Their effects on self-determination and athletes' subjective well-being. *Psychology of Sport and Exercise*, 10, 545-551.
- Bompa, T. O., & Jones, D. (1983). *Theory and methodology of training: The key to athletic performance*. Dubuque, IA: Kendal/Hunt Publishing Company.
- Brenner, J., & Swanik, K. (2007). High-risk drinking characteristics in collegiate athletes. *Journal of American College Health*, 56(3), 267-72.
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology*, 25(5), 759-775.
- Brewer, B. W., Van Raalte, J. L., & Linder, D. E. (1993). Athletic identity: Hercules' muscles or Achilles heel?. *International Journal of Sport Psychology*, 24(2), 237-254.

- Butt, J., Weinberg, R., & Culp, B. (2010). Exploring mental toughness in NCAA athletes. *Journal of Intercollegiate Sport*, 3, 316-332.
- Chase, M. A., (2001). Children's self-efficacy, motivational intentions, and attributions in physical education and sport. *Research Quarterly for Exercise and Sport*. 71(1) 47-54.
- Conroy, D. E., & Benjamin, L. S. (2001). Psychodynamics in sport performance enhancement consultation: Application of an interpersonal theory. *The Sport Psychologist*, 15, 103-117.
- Crisp, R. (2013). Well-Being. *Stanford Encyclopedia of Philosophy*. Retrieved from <https://plato.stanford.edu/entries/well-being/>
- Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (1980). The empirical exploration of intrinsic motivational processes. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 39-80). New York, NY: Academic Press.
- Deci, E. L., & Ryan, R. M. (1987). The support of autonomy and the control of behavior. *Journal of Personality and Social Psychology*, 53(6), 1024-1037.
- Deci, E. L., & Ryan, R. M. (1995). Human Autonomy. In M. Kernis (Ed.) *Efficacy, agency, and self-esteem*, (pp. 31-49). New York, NY: Springer Science.
- Deci, E., & Ryan, R. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.
- Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology*, 49(1), 14-23.

- Diener, E., Scollon, C. N., & Lucas, R. E. (2003). The evolving concept of subjective well-being: The multifaceted nature of happiness. *Advances in Cell Aging and Gerontology, 15*, 187-219.
- Dishman, R. K., Hales, D. P., Pfeiffer, K. A., Felton, G., Saunders, R., & Ward, D. S. (2006). Physical self-concept and self-esteem mediate cross-sectional relations of physical activity and sport participation with depression symptoms among adolescent girls. *Health Psychology, 25*, 396-407.
- Doherty, S., Hannigan, B., & Campbell, M. J. (2016). The experience of depression during the careers of elite male athletes. *Frontiers in Psychology, 7*, 1–11.
- Duckworth, A. (2016). *Grit: The power of passion and perseverance*. New York, NY: Simon & Schuster.
- Duda, J. (1989b). The relationship between task and ego orientation and the perceived purpose of sport among male and female high school athletes. *Journal of Sport & Exercise Psychology, 11*, 318-335.
- Dweck, C. S. (2000). *Self-theories: Their role in motivation, personality and development*. Philadelphia, PA: Taylor & Francis.
- Dweck, C. (2014). *Mindset, The new psychology of success*. New York, NY: Random House.
- Easterlin, R. A. (2003). Explaining happiness. *Proceedings of the National Academy of Sciences of the United States of America, 100*(19), 11176-11183.
- Eisenberg, D. (2015). *Developing and evaluating a model program for supporting the mental health of student athletes*. Ann Arbor, MI: University of Michigan.
- Erez, A., & Isen, A. M. (2002). The influence of positive affect on the components of expectancy information. *Journal of Applied Psychology, 87* (6), 1055-1067.

- Ericsson, K. A. (2006). The influence of experience and deliberate practice on the development of superior expert performance. In K. A. Ericsson, N. Charness, P. J. Feltovich, R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 685-705). New York, NY: Cambridge University Press.
- Eysneck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion, 7* (2), 336-353.
- Fagan, K. (2018). *What made Maddy run: The secret struggles and tragic death of an all-American teen*. New York, NY: Little Brown.
- Feltz, D.L., Short, S.E., & Sullivan, P.J. (2008). *Self-efficacy in sport: Research and strategies for working with athletes, teams, and coaches*. Champaign, IL: Human Kinetics
- Foelber, K.J. (2014). *Towards construct validity: Investigating the structure of the mental toughness in sport questionnaire (MTSQ-32)* (Unpublished masters thesis). Available from James Madison University Scholarly Commons.
- Fourie, S., & Potgieter, J. R. (2001). The nature of mental toughness in sport. *South African Journal for Research in Sport, Physical Education and Recreation, 23*(2), 63-72.
- Gallagher, R.P. (2012). Thirty years of the National Survey of Counseling Center Directors: A personal account. *Journal of College Student Psychotherapy, 26*, 172-184.
- Gardner, H. (1999). *Intelligence reframed. Multiple intelligences for the 21st century*. New York: Basic Books.
- Gucciardi, D. F., Gordon, S., & Dimmock, J. A. (2008). Towards an understanding of mental toughness in Australian football. *Journal of Applied Sport Psychology, 20*, 261-281.
- Golby, J., & Sheard, M. (2004). Mental toughness and hardiness at different levels of rugby league. *Personality and Individual Differences, 37*(5), 933-942.

- Hagger, M. S., & Chatzisarantis, N. L. D. (2011). Motivation. In T. Morris & P. Terry (Eds.), *The new sport and exercise psychology companion* (pp. 135-157). Morgantown, WV: Fitness Information Technology.
- Hammond, T., Gialloredo, C., Kubas, H., & Davis, H. (2013). The prevalence of failure-based depression among elite athletes. *Clinical Journal of Sport Medicine, 23*(4), 273-277.
- Hanin, Y. L. (2000). *Emotions in sport*. Champaign, IL: Human Kinetics.
- Hardy, L., Jones, J. G., & Gould, D. (1996). *Understanding psychological preparation for sport: Theory and practice of elite performers*. Hoboken, NJ: Wiley.
- Harmison, R. (2008, September). *An exploratory factor analysis of the Mental Toughness Questionnaire*. Paper presented at the 23rd annual meeting of the Association for Applied Sport Psychology. St. Louis, MO.
- Harmison, R. (2011). A social-cognitive framework for understanding mental toughness in sport. In D. Gucciardi, & S. Gordon (Eds.), *Mental toughness in sport: Developments in theory and research* (pp. 47-68). London, England, UK: Routledge University Press.
- Harrison, P., & Narayan, G. (2003). Differences in behavior, psychological factors, and environmental factors associated with participation in school sports and other activities in adolescence. *Journal of School Health, 73*, 113-120.
- Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behavior Research and Therapy, 44*(1), 1-25.
- Hays, K., Thomas, O., Maynard, I., & Bawden, M. (2009). The role of confidence in world-class sport performance. *Journal of Sports Sciences, 27*(11), 1185-1199.
- Henriques, G. (2011). *A new unified theory of psychology*. New York: Springer.

- Henriques, G. (2014, April 18). The character wheel. [Web log post] Retrieved from <https://www.psychologytoday.com/blog/theory-knowledge/201404/the-character-wheel>
- Henriques, G. (2017). Character adaptation systems theory: A new big five for personality and psychotherapy. *Review of General Psychology, 21*(1), 9-22.
- Henriques, G., Kleinman, K., & Asselin, C. (2014). The nested model of well-being: A unified approach. *Review of General Psychology, 18*(1), 7-18.
- Henriques, G., & Stout, J. (2012). A unified approach to conceptualizing people in psychotherapy. *Journal of Unified Psychotherapy and Clinical Science, 1*, 37–60.
- Horsburgh, V. A., Schermer, J. A., Veselka, L., & Vernon, P. A. (2009). A behavioral genetic study of mental toughness and personality. *Personality and Individual Differences, 46*, 100-105.
- Jackson, S. A., & Eklund, R. C. (2004). *The flow scale manual*. Morgantown, WV: Fitness Information Technology.
- James Madison University. (2017). Facts and figures. [Web log post] Retrieved from <https://www.jmu.edu/about/fact-and-figures.shtml>
- James Madison University. (2014). *The Madison plan: Strategic plan 2014-2020*. Harrisonburg, VA: James Madison University.
- Jayawickreme, E., Forgeard, M. J. C., & Seligman, M. E. P. (2012). The engine of well-being. *Review of General Psychology, 16*(4), 327–342.
- Jones, G., Hanton, S., & Connaughton, D. (2002). What is this thing called mental toughness? An investigation of elite sport performers. *Journal of Applied Sport Psychology, 14*, 205-218.

- Jones, G., Hanton, S., & Connaughton, D. (2007). A framework of mental toughness in the world's best performers. *The Sport Psychologist, 21*, 243-264.
- Jowett, S., & Cramer, D. (2009). The role of romantic relationships on athletes' performance and well-being. *Journal of Clinical Sport Psychology, 3*(1), 58-72.
- Kadison, R. & DiGeronimo, T.F. (2005). *College of the overwhelmed: The campus mental health crisis and what to do about it*. San Francisco, CA: Jossey-Bass.
- Kirshner, A. (2018, January 16). Washington State's Hilinski passes away in suspected suicide, police say. [Web log post] Retrieved from www.sbnation.com/college-football/2018/1/16/16899872/tyler-hilinski-washington-state-qb-passes-away
- Kimball, A. C. (2004). You signed the line: collegiate student-athletes' perceptions of autonomy. *Psychology of Sport and Exercise, 8*(5), 818-835.
- Kleinginna, P. R., & Kleinginna, A. M. (1981). A categorized list of motivation definitions, with a suggestion for a consensual definition. *Motivation and Emotion, 5*(3), 263-291.
- Lipson, S.K. and Eisenberg, D. (2014). *The healthy bodies study*. Ann Arbor, MI: University of Michigan.
- Loehr, J. (2012). *The only way to win: How building character drives high achievement and greater fulfillment in business and life*. New York: Hachette Books.
- Maddi, S. R. (2004). Hardiness: An operationalization of existential courage. *Journal of Humanist Psychology, 44*, 279-298.
- Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational model. *Journal of Sports Sciences, 21*, 883-904.
- Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 35*, 118-133.

- McAdams, D. P., & Pals, J. L. (2006). A new big five: Fundamental principles for an integrative science of personality. *American Psychologist*, *61*, 204–217.
- Mauss, I. B., Tamir, M., Anderson, C. L., & Savino, N. S. (2011). Can seeking happiness make people unhappy? Paradoxical effects of valuing happiness. *Emotion*, *11*(4), 807-815.
- Miller, K. E., & Hoffman, J. H. (2009). Mental well-being and sport-related identities in college students. *Sociology in Sport Journal*, *26*(2), 335-356.
- Moran, A. (2009). Attention in sport. In S. D. Mellalieu & S. Hanton (Eds.), *Advances in applied sport psychology: A review* (pp. 195-220). London: Routledge.
- Moritz, S. E., Feltz, D. L., Fahrbach, K. R., Mach, D. E. (2000). The relation of self-efficacy measures to sport performance: A meta-analytic review. *Research Quarterly for Exercise and Sport*, *71*(3), 280-294.
- National Collegiate Athletic Association. (2004). *NCAA strategic plan*. Indianapolis, IN: NCAA Executive Committee.
- National Collegiate Athletic Association. (2014). *Student-athlete well-being*. Retrieved from <http://www.ncaa.org/governance/student-athlete-well-being>
- National Collegiate Athletic Association. (2016). *Mental health best practices*. Retrieved from https://www.ncaa.org/sites/default/files/HS_Mental-Health-Best-Practices_20160317.pdf
- National Collegiate Athletic Association. (2016). *NCAA college athletics statistics*. Retrieved <http://www.statisticbrain.com/ncaa-college-athletics-statistics/>
- National Collegiate Athletic Association. (2016). *NCAA core values*. Retrieved from <http://www.ncaa.org/about/ncaa-core-values>

- Newland, A., Newton, M., Finch, L., Harbke, C. R., & Podlog, L. (2013). Moderating variables in the relationship between mental toughness and performance in basketball. *Journal of Sport and Health Science*, 2(3), 184-192.
- Newton, M., Duda, J.L. and Yin, Z. (2000). Examination of the psychometric properties of the Perceived Motivational Climate in Sport Questionnaire-2 in a sample of female athletes. *Journal of Sports Sciences*, 18(4), 275-290.
- Nicholls, A. R., Morley, D., & Perry, J. L. (2016). Mentally tough athletes are more aware of unsupportive coaching behaviours: Perceptions of coach behaviour, motivational climate, and mental toughness in sport. *International Journal of Sports Science & Coaching*, 11(2), 172-181.
- Pelletier, L., Rocchi, M., Vallerand, R., Deci, E., & Ryan, R. (2013). Validation of the revised Sport Motivation Scale (SMS-II). *Psychology of Sport and Exercise*, 14, 329-341.
- Pensgaard, A. M., & Roberts, G. C. (2000). The relationship between motivational climate, perceived ability and sources of distress among elite athletes. *Journal of Sports Sciences*, 18, 191-200.
- Petrie, T., Deiters, J., & Harmison, R. (2014). Mental toughness, social support, and athletic identity: Moderators of the life stress-injury relationship in collegiate football players. *Sport, Exercise, and Performance Psychology*, 3(1), 13-27.
- Portenga, S. T., Aoyagi, M. W., & Cohen, A. B. (2016). Helping to build a profession: A working definition of sport and performance psychology. *Journal of Sport Psychology in Action*, 8(1) 47-59.

- Reinboth, M., & Duda, J. L. (2006). Perceived motivational climate, need satisfaction and indices of well-being in team sports: A longitudinal perspective. *Psychology of Sport and Exercise, 7*, 269-286.
- Reinboth, M., & Duda, J. L. (2004). The Motivational Climate, Perceived Ability, and Athletes' Psychological and Physical Well-Being. *The Sport Psychologist, 18*(3), 237-251.
- Reinboth, M., Duda, J., & Ntourmanis, N. (2004). Dimensions of coaching behavior, need satisfaction, and the psychological and physical welfare of young athletes. *Motivation and Emotion, 28*, 297-313.
- Rettew, D., & Reivich, K. (1995). Sports and explanatory style. In G. McClellan Buchanan & M. E. P. Seligman (Eds.) *Explanatory style* (pp. 173–186). Mahwah, NJ: Erlbaum.
- Richardson, G. E., Neiger, B. L., Jensen, S., Kumpfer, K. L. (1990). The resiliency model. *Health Education, 21*(6), 33-39.
- Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology, 58*(3), 307-321.
- Roberts, G. C., Treasure, D. C., & Conroy, D. E. (2007). Understanding the dynamics of motivation in sport and physical activity: An achievement goal interpretation. In G. Tennenbaum, & R. Eklund, *Handbook of sport psychology* (pp. 3-30). Hoboken, NJ: Wiley.
- Robins, C. J., Ivanoff, A. M., & Linehan, M. M. (2001). Dialectical behavior therapy. In W. J. Livesely & R. Larstone (Eds.) *Handbook of personality disorders: Theory, research, and treatment* (pp. 437-459). New York, NY: Guilford Press.
- Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality, 63*, 397-427.

- Ryan, R., & Deci, E. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141–166.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069-1081.
- Sanders, C. E., Field, T. M., Diego, M., & Kaplan, M. (2000). Moderate involvement in sports is related to lower depression levels among adolescents. *Adolescence, 35*, 793-797.
- Sarrazin, P., Vallerand, R., Guillet, E., Pelletier, L., & Cury, F. (2002). Motivation and dropout in female handballers: A 21-month prospective study. *European Journal of Social Psychology, 32*(3), 395-418.
- Seligman, M. E. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.
- Sheard M., Golby J. (2010) Personality hardiness differentiates elite-level sport performers. *International Journal of Sport and Exercise Psychology, 8*, 160–169.
- Short, S. E., & Ross-Stewart, L. (2009). A review of self-efficacy-based interventions. In S. D. Mellalieu & S. Hanton (Eds.), *Applied sport psychology advances: A review* (pp. 221-15 281). London: Routledge.
- Sinden, J. L. (2010). The normalization of emotion and the disregard of health problems in elite amateur sport. *Journal of Clinical Sport Psychology, 4*(3), 241–256.
- Steinfeldt, J. A., & Steinfeldt, M. C. (2012). Profile of masculine norms and help-seeking stigma in college football. *Sport, Exercise, and Performance Psychology, 1*(1), 58–71.
- <http://doi.org/10.1037/a0024919>

- Summers, J., & Moran, A. P. (2011). Attention. In T. Morris & P. Terry (Eds.), *The new sport and exercise psychology companion* (pp.105-133). Morgantown, WV: Fitness Information Technology.
- Tomer, J. F. (2011). Enduring happiness: Integrating the hedonic and eudaimonic approaches. *The Journal of Socio-Economics, 40*, 530–537.
- Vallerand, R. J. (2000). Deci and Ryan's self-determination theory: A view from the hierarchical model of intrinsic and extrinsic motivation. *Psychological Inquiry, 11*, 312-318.
- Vallerand, R. (2007). Intrinsic and extrinsic motivation in sport and physical activity: A review and a look at the future. In G. Tennenbaum & R. Eklund (Eds.), *Handbook of sport psychology* (3rd ed.) (pp. 59-83) New York: John Wiley & Sons.
- Vealey, R. S. (1986). Conceptualization of sport-confidence and competitive orientation: Preliminary investigation and instrument development. *Journal of Sport Psychology, 8*, 221-246
- Vealey R. S., & Chase M. A. (2008). Self-confidence in sport. In T.S. Horn (Ed.), *Advances in sport psychology* (pp. 66-97). Champaign, IL: Human Kinetics.
- Vealey, R. S., Hayashi, S. W., Garner-Holman, M., Giacobbi, P. (1998). Sources of sport-confidence: Conceptualization and instrument development. *Journal of Sport and Exercise Psychology, 20*, 54-80.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: THE PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.
- Watson, J. C., & Kissinger, D. B. (2007). Athletic participation and wellness: Implications for counseling college student-athletes. *Journal of College Counseling, 10*(2), 153–163.

- Weinberg, R., Butt, J., & Culp, B. (2011). Coaches' views of mental toughness and how it is built. *International Journal of Sport and Exercise Psychology*, 9(2), 156-172.
- Wilson, M., Smith, N. C., & Holmes, P. S. (2007). The role of effort in influencing the effect of anxiety on performance: Testing the conflicting predictions of processing efficiency theory and the conscious processing hypothesis. *British Journal of Psychology*, 98, 411-428.
- World Health Organization. (1946). *Preamble to the constitution of the World Health Organization*. New York: Author.
- Wulf, G., McNevin, N. H., Fuchs, T., Ritter, F., & Toole, T. (2000). Attentional focus in complex skill learning. *Research Quarterly for Exercise and Sport*, 71(3), 229-239.