

EARLY ATHLETE SPECIALIZATION AND THE IMPACT ON PLAY AND BURNOUT
MENTALITITES OF DIVISION I COLLEGE ATHLETES

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ABSTRACT

Rachel Renée Leeke: Early Athlete Specialization and the Impact on Play and Burnout
Mentalities of Division I College Athletes
(Under the direction of Erianne Weight)

In recent years, the National Collegiate Athletic Association has stated an increased focus on health and wellness. It is important to understand an athlete's mental outlook in an effort to impede the likelihood of burnout as a result of negative sport experience. This study's focus is to assess the student-athlete's perspective as they approach their sport by examining the age of sport specialization and other independent variables. Doing so can aid coaches in instituting more targeted measures (i.e. team bonding events, alteration of coaching style, etc.) in order for students to get the most out of their athletic experience. Additionally, understanding mitigating factors such as when an athlete started sport, gender, individual v. team sport and revenue v. Olympic sport factors could influence future parenting decisions and encourage sport-governing bodies to provide recommendations for better mental health accommodations. The creation of the Play Mentalities Instrument (PMI-20) used in conjunction with the Athlete Burnout Questionnaire filled an important gap in research examining collegiate athletes mentalities toward their sport considering no study has combined the two measures to gain perspective on the mindset of Division I athletes. As a result, an inverse relationship was uncovered between play and burnout.

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CHAPTER I

Introduction

In the United States, the National Collegiate Athletic Association (NCAA), functions as a member-led organization dedicated to the support of student athletes during their intercollegiate athletic careers. As the regulating body of member institutions, the NCAA upholds collegiate amateurism, enforces sporting rules, and holds national championships for most of its 24 sports. Although a student-athletes undergraduate athletic career is short, the physical and psychological affects felt by the student last a lifetime. The NCAA's stated focus on health and wellness has been at the heart of recent discussions. NCAA President Mark Emmert, has said, "This is the time now to match our actions with our values" as he called for a "rebalancing of athletics and academics" (New, 2016). Much of the discussion surrounding this rebalance of athletics and academics has focused on student athlete time demands. While this is an important structural impediment that can impact the athlete's experience, it is equally important to understand the athlete mental state. The mental state of a person can be just as important, if not more than, the daily tasks they carryout. Thus, the purpose of this study is to investigate the psychological approach to sport collegiate athletes hold and whether the age athletes specialize in their sport impacts burnout and/or a play mindset.

Examined more in previous decades, the study of play has experienced resurgence in recent years. Play and its accompanying mindset have been identified as a noted factor in beneficial health outcomes. Having a play mindset can potentially help aid positive

psychological outcomes and counter the emotional exhaustion associated with the stress dimensions of burnout (Gustafsson, Kentta, & Hassmen, 2011). Between 6-11% of young athletes experience significant burnout symptoms, characterized by isolated feelings of exhaustion, depression, and frustration, all of which have negative health implications (Eklund & Cresswell, 2007). The antithesis of these feelings is play (Sutton-Smith, 1997).

Stemming from its evolutionary purpose, play allows individuals to come together, engage in a safe setting, and learn more about ones environment, all while having fun (Brown, 2009). In an attempt to bring about better athlete psychological outcomes, an examination of the intersection of burnout and play can aid athletic staff in better support and development of an athlete's performance. Specific research questions pursued within this study follow.

Research Questions

(1) How does (a-d) effect play or burnout mindsets in intercollegiate athletes?

- a. Age of sport specialization
- b. Gender
- c. Individual v. team sport
- d. Revenue v. Olympic sport

Hypothesis

H_a= as age of specialization increases, presence of burnout decreases, play mindset increases.

H_b= gender will have no bearing on the likelihood of predicting play or burnout mindsets

H_c=for individual sports the likelihood of burnout will increase, play mindset decrease; for team sports burnout will decrease, play mindset increase.

H_d= for revenue sports the likelihood of burnout will increase, play mindset decrease; for Olympic sports the likelihood of burnout will decrease and play mindset increase.

Definition of Terms

Sports specialization is defined as intense, year-round training in a single sport with the exclusion of other sports (Dugas, Durazo-Arivu, Luke, & Jayanthi-Pinkham, 2011). In the context of this research we are defining the age at which athletes focused on the single sport they currently play.

Assumptions

It is assumed that the procedures provided were followed, that an honest rather than coercive/controlling environment was created, which would potentially affect the answers provided by respondents. It is assumed that the subjects answered objectively and honestly in completing the evaluation of personal play perception and the Athlete Burnout Questionnaire.

Significance of Study

Understanding the student-athlete's perspective as they approach their sport can aid coaches in instituting more targeted measures (i.e. team bonding events, alteration of coaching style, etc.) in order for students to get the most out of their athletic experience. Additionally, understanding mitigating factors such as when an athlete started sport, gender, individual v. team sport and revenue v. Olympic sport factors could influence future parenting decisions and encourage sport-governing bodies to provide recommendations for better mental health accommodations based on the findings of this study.

CHAPTER II LITERATURE REVIEW

Play

The study of play has yielded many ideas as to its purpose within human development. Researches have held varying opinions on the matter. Some have asserted play is simply something done in and of itself with no function at all (Sutton- Smith, 1997), while others claim it is an innate behavior useful in building and maintaining social relationships (Fagen, 1981). However, the current leading researcher on the subject and founder of the National Institute of Play, Stuart Brown, indicates during play “ the brain is making sense of itself through simulation and testing” (2009, p. 34). Brown’s studies show through playing we are able to make implicit connections that we use in our everyday life. Because we are playing we are able to minimize risk while learning lessons and building skills. While play may be hard to define it is something not only unique to mammals, but some birds and a few other species play as well (Bateson 2005). Play allows us to interact with our environment and build new connections within the world around us.

The expectation of game-like activities being hinged to play is not the case. In fact it doesn’t have to reflect much of a physical effort to be considered. Researchers have indicated, “...it is not the activity (usually sports or games) but the *attitude* of the agent that defines play – autotelic play is defined with respect to the attitudes, intentions, motives, and reasons of the player”(Schmid, 2009, pg. 240). Play lends itself to a myriad of activities simply because it is a mindset. Simply put something becomes play not because of what is done, but due to the mental state we are in while doing it.

Brown (2009) has postulated seven properties of play foundational to assessing play behavior.

1. It must be done for its own sake, *appearing purposeless*.
2. It must be *voluntary*, with participants willing to engage without prior prompt.
3. Participants should feel an *inherent attraction* – organic magnetism to the activity, done for no reason other than it feels good.
4. It has to have *improvisational potential* – be free of pre-determined outcomes, which many people take advantage of because instead of stopping play when an activity gets boring many people just switch up the rules to stay engaged.
5. Participants should experience a *diminished consciousness of self* characterized by being fully in the moment, or in the zone, where they no longer care about whether they look awkward, smart, or silly.
6. Participants should experience an inherent *continuation desire* to play.
7. It should allow participants to feel *freedom from time* as it occurs, without a designated time period.

Simply put, “play is not a thing but a process” (Upton, 2015, pg. 21).

Witnessing play within various mammals and other species provides strong evidence of play’s importance to human life; it aids us in survival. Otherwise, through evolution it would have been a victim of natural selection and removed from the genetic traits passed on to offspring (Brown, 2009). Indeed, while play can be thought of as a waste of time because it takes away from more serious homeostatic needs to survive, Brown (2009) argues we are interacting with our environment in such a way that we are creating and testing new simulations of ways we interact with our environment, and therefore the world at large. He asserts in having

these new experiences we are creating new cognitive connections that transpose settings and find their way into our everyday lives.

“When we get really into following the victories and defeats of a favorite football team, we learn about perseverance and how to argue with our friends in a constructive way. When we experience a new physical challenge like learning to ski, we may find that the things we learn on the slopes - like avoiding falling by keeping our weight forward and committing to the turn - may come to mind during business negotiations as important reminders to press forward and commit to the deal - or fail” (p. 35)

This idea makes sense considering things that “fire together, wire together”. Meaning, the manner in which one has handled similar challenges when faced with a new situation allows them to think critically to the same effect because of past experience. Play functions as a way for us to test-drive new ways of thinking and form new cognitive pathways based on past experience.

Pulling from the work of animal play scholar, Stephen Sivy (1998), play functions as a form of cognitive understanding because it continues the activation of neural circuitry. In our most formative years, childhood, it is no coincidence the time of most rapid brain development and the overwhelming instinct to play are present at the same time. After birth, mammals, possess many neurons already in place, however play promotes the creation of new connections that did not exist before (Brown, 2009). Through play behaviors, which coincide with interactions within one's surrounding environment, problem solving and creative skills are naturally nurtured (Smith & Simon, 1984). As stated by L.S. Vygotsky, “play is not the predominant feature of childhood but it is a leading factor of development” (1978, p. 101). For the developing brain, play functions as an innocuous way of learning without taxing our physical and emotional well-being because there is no threat, we are simply playing. While the initial lattice of neurons we are born with seem superfluous because the absence of immediate function,

“in playing we foster the creation of [these] new circuits and test them by running signals through them”(Brown, 2009, p.41).

Due to play being a pillar in development, the absence of it can have major implications to one's health. In addition to the continued development of neural circuitry, play functions as a lead indicator for successful social development (Harlow, 1971; Winnicott, 1971). While other mammals appear to “play fight” with siblings, in truth they are developing the skills to be able to not only kill and feed themselves in the wild, but also defend themselves against off competing predators. As social creatures, human play functions as a way of assessing social norms, which are critical in our ever-changing environment. Play serves as a way to gauge social boundaries, realize social expectations placed upon ones by others, and learn the difference between friendly and mean-spirited interactions (Caillois, 2001). Similarly, the development of emotional intelligence is accompanied by play where an individual is able to perceive another’s emotional state and enact an appropriate response. While a very different form of survival, social missteps have the capacity to damage relationships which could lead to the next promotion at work, a budding romantic relationship, or invitation to an event which could potentially raise one's social capital. Similarly, in Harlow’s (1971) *Learning to Love*, he details, not just in childhood, but throughout adult life, play is the primary activity for successful social development. Through the expanding of synaptic connectivity the understanding of how to interact with individuals and recognize possibly threatening situations allows play to be a guiding form with which we navigate through different settings.

While the amount of time dedicated to play after childhood significantly declines, its benefits are still felt regardless of age. In fact, throughout life, humans are able to continually have neuron growth, which is characteristically a benefit of being forever young (Brown, 2009).

In order to continue through the changing landscape from a child to an adult while navigating varying degrees of responsibilities, play functions as an agent to remain creative and remain aware of our environment. In adulthood this is particularly important because “in play thought is separated from objects and action arises from ideas rather than things” (Vygotsky, 1978, pg. 97). Play, very literally, encourages us to think in ways we have never done so before, enabling us to physically maintain homeostasis and at best, remain successful at work we undertake. In adults, play functions as a catalyst to find enjoyment and engage fully with the world. Something thought of as frivolous or non-productive can bring meaning and liven everything one does. In nature the only time play is not present within an animal is when it is in survival mode, deprived of food, sleep or thirst. However, once all other survival hierarchies are met, play returns. As animals, humans, have the ability to intertwine work and play and live a fulfilled life, one that not necessarily has to indicate a lack of effort or endeavor on their part. “The distinction of play from work does not consist in it being less hard; children work astonishingly hard at their games, which do not on that account cease to be games; Hence, it is a complete mistake to suppose that play is the overflow of mere physical energy and aimed at merely physical pleasure” (Collingwood, 1924, p.104). The intertwining of work and play cannot be dispelled simply because pleasure is not gained from every element of play, because pleasure is not, the defining characteristic of play (Vygotsky, 1978). In sport where a crushing loss may bring even the most enthusiastic person down, but because play has an organic attraction, an interest in continuing to engage is not lost indefinitely. Play in the form of imaginative thought, a form of projecting future desires and outcomes leave imprints on our mind as well. (Sutton-Smith, 1997). In doing so we create new combinations of outcomes through our behavior and see what is feasible or materializes.

Everyone plays. Be it an example of ancient Mayan ball courts appearing on pre-Columbian structures in South America or video games in modern day Japan, across cultures and throughout history, every civilization has had a form of play (Upton, 2015). Play functions as a way of learning, creating new cognitive pathways spurred by interacting with ones environment in a safe way. For collegiate athletes who dedicate years in hopes of being elite in their sport it is worthwhile to investigate how the engagement of the play mindset affects the enjoyment of their sport and what implications it has on burnout.

Burnout

Sport participation can be a worthwhile and inspiring experience for athletes of all levels. However there is a range of negative phenomena that can transpire from ones involvement. In the pursuit of excellence within any sport a great deal of time and effort must be put in in order to get the desired result of expertise (Ward et al., 2007). In doing so, several hours of practice, weight lifting and restrictive eating are some of the elements that condition an athlete to shape their lives in pursuit of athletic excellence. While those factors are not harmful in and of themselves, an athlete's pursuit for elitism can expose them to the negative consequence of athletic burnout (Gustafsson, Kentta, & Hassmen, 2011).

Burnout was first viewed as “a state of emotional exhaustion caused by excessive psychological and emotional demands placed on people in helping professions” (Jackson, Schwab, & Schuler, 1986, p.630). Smith (1986) extended the understanding to reflect an athlete's maladjusted response to stress associated with competition and practice. Coakley (1992) and Raedeke (1997) later realize burnout is not a manifestation of inadequate handling of stress but in actuality, it results from the athlete's perception of their relationship to their sport. Athlete burnout is a complex psychological syndrome characterized by (1) devalued experience in sport participation, (2) being physically and emotionally exhausted and (3) decreased athletic

accomplishment (Raedeke, 1997; Raedeke & Smith 2001, 2009). Devalued sport experience refers to decreased interest in and negative attitude toward a once loved sport. Reduced sense of accomplishment relates to perceived lowered ability to execute and perform ones sport while being physically and emotionally exhausted functions as the core element of athlete burnout (Gustafsson, et al., 2011).

Personal motivation functions as a foundational element for participation in sport (Gould, 1996). Recent efforts have explored burnout within frameworks of perfectionism, self-determination, and social support frameworks (Jowett, Hill, Hall, & Curran, 2016; Rasquinha, Dunn, & Dunn, 2014; Lonsdale, Hodge, & Rose, 2009; Hodge, Lonsdale, & Ng, 2007; Rees & Freeman, 2007; DeFreese & Smith, 2013; Gustafsson, Hassmen, Kentta, & Johansson, 2008; Hill, Hall & Appleton, 2009; Raedeke & Smith, 2009). These varying frameworks provide insight into the possible mindsets that buffer or cause burnout to set in. In terms of perfectionism, defined as a personality disposition that includes striving for faultlessness accompanied by harsh self-evaluation, research has shown it is a factor that appears to underpin athlete burnout (Frost, Marten, Lahart, & Rosenblate, 1990; Jowett et al., 2016). As one might expect, higher levels of competitive sport are associated with higher perfectionistic strivings (Rasquinha et al., 2014). While the previous statement might indicate a developmental link between competitive sport level and perfectionistic strivings, further analysis must be done to dispel the possibility that perfectionistic strivings enable an athlete to attain higher performances in their sport (Stoeber, Uphill, & Hotham, 2009).

In the interest of realizing higher performances Deci and Ryan (2000) point to competence, autonomy and relatedness as the proposed basic psychological needs every human wishes to have met. Attributed to sport, competence refers to the ability to be effective in one's

sport, autonomy relates to an individual's ability to have choice and self-directedness and relatedness has to do with the ability to feel connection with others. In general, optimal wellbeing is expected when these needs are met (Ryan & Fredrick, 1997). In sport contexts when basic psychological needs are met athletes present self-determined motivation that leads to positive psychological outcomes such as coping with the practice and competition environment (Lonsdale et al., 2009; Hodge et al., 2007). Conversely, when these needs are not met, there is thought that burnout is a negative circumstantial outcome (Perreault, Gaudreau, Lapointe & Lacroix, 2007).

In hopes of mitigating burnout Coaxley (1992) indicated to truly get to the root of the issue one must not look to aid the athlete in managing stress but looking at the social structure surrounding the athlete. In addition to outside support Raedeke and Smith (2004) indicated the need for internal coping behaviors such as lifestyle management skills are crucial in buffering the psychological effects of stress and burnout. Similarly, perceived support from teammates is important to mitigate feelings of athlete burnout (Defreese & Smith, 2012).

While these theories are indicators of how burnout transpires, researchers have differing outcomes when gauging male and female athletes burnout outcomes as documented using the Eades Athletic Burnout Inventory and the Competitive State Anxiety Inventory (Gould, D., et. al. 1996, Finch, 1999; Wyner, 2004; Allen, 2006). While outcomes differed, researchers have observed through their findings that in some cases women have a lower sense of personal accomplishment (Allen, 2006). However, there is a consensus using the same apparatuses, individual sport athletes have scored higher on the burnout measures (Finch, 1999; Wyner, 2004; Allen, 2006). Researchers believe the inability to place blame anywhere outside of ones self, the

unusually high amount of training that goes into individual sport and its repetitive nature, causes increased anxiety for the athletes.

As the literature has indicated, burnout can impact the worthwhile sporting experience athletes partake in. The study at hand investigates a variety of factors that may be associated with burnout. A better understanding of these factors may facilitate the development of burnout mitigation pathways. This knowledge can be utilized to provide optimal athlete experience.

Sport Specialization

Approximately 27 million young people in the United States, between the ages of 6 and 18 participate in team sports (DiFiori, Benjamin, Brenner, Gregory, Jayanthi, Landry, & Luke, 2014). The opportunity to participate in organized sport as a youngster can bring about a myriad of positive health outcomes. Engaging in sports as a child encourages vigorous activity and energy expenditure, which aids in the reduction of childhood obesity, a key indicator of adult obesity (Berrigan, Dodd, Masses, McDowell, Troiano, Tilert, 2008). Youth sports also foster learning, practicing and developing gross motor skills, which, when acquired at a young age, on average, yields continued engagement in the activity into adulthood (Purcell, 2005; Cardinal, Lee, Loprinizi & Loprinizi, 2012). A 2010 Center of Disease Control and Prevention study indicated a positive correlation between young people who participated in high levels of physical activity and improved weight control, improved academic achievement, decreased risk of heart disease and diabetes, and less psychological dysfunction (Ullrich-French, McDonough, Smith, 2012). In addition to the numerous physical health benefits organized sport can also provide psychological and social impact. Youth sport participation has shown an improvement in student's social skills, individual self-worth, decreased suicidal thoughts, enhanced time management skills and decreases the likelihood to engage in smoking or illicit-drugs (Merkel,

2013; Dowda, Levin, Pate, Trost, 2000). These positive outcomes for young people in sport, however, cannot be assumed and must be cultivated in a healthy and supportive environment (Merkel, 2013).

Early sport specialization, once thought of as a way to bring about elite sport performance at a young age, can impede the positive outcomes organized sport accomplishes (Callender, 2010; Figueriredo, Goncalves, Rama, 2012). In fact, early sport specialization can yield negative physical, social, and psychological implications. Many studies indicate early sport specialization is not a reliable source at predicting future sport success (Wall & Cote, 2007; Callender, 2010; Goncalves, et. al, 2012; Elbe, Moesch, Hauge, & Wikman, 2010). In fact, early sport diversification can be beneficial to young athletes because they develop an array of skills that does not hinder sport specific skill development (Wall & Cote, 2007). While parents may see it as a means to gain social, financial, and educational rewards, in actuality, “participation in one sport early on in life is thought to increase the risk of sport related injuries, peer isolation, burnout, psychosocial problems and attrition” (Merkel, 2012 p. 155; Hedstrom & Gould, 2004; Jayanthi et. al., 2013).

The body of a young athlete is still developing and growing during adolescence. It is a critical time with which they become vulnerable to overuse, from repetitive motion during single sport play, and traumatic injury (DiFiori et. al., 2014; Merkel & Molony, 2012; Foss, Hall, Hewett, & Myer, 2015). Depending on their stage of growth, children can injure structures that are different than those found within adults (Merkel, 2013). With bones weaker than their ligaments children are at increased risks for breaks and fractures throughout the growth plate and bone (Merkel & Molony, 2012).

Psychologically, the increased stress of becoming an elite player can lead to sport attrition, in fact, by the age of 15, 70-80% of child athletes are no longer participating in sport (Breunner, 2012). Contributing factors include a mismatch in sport readiness and skill development, in addition to parents perceiving their children like to engage in sport to “win” (Purcell, 2005; Chung, Gould, Smith & White, 2002). A disconnect between the intentions of the child and parent on the reason to participate can yield anxiety, stress, and ultimately attrition for the young athlete (Hedstom & Gould, 2004; Purcell, 2005). The adult interpretation of youth sports as a miniature version of professional sport overrides the participatory atmosphere and allows space for the implementation of coaching tactics which mimic that of college and professional sports, including hypercompetitive practices and physical punishments. (Merkel, 2012). It is suggested that children should wait until after the age of 12 to specialize in a given sport (Epstein, 2013; Jayanthi, Pinkham., Dugas, Patrick & LaBella, 2013). As indicated by Wall and Cote (2007), youth sport programs should focus on “sport-specific practice, games and play activities that foster fun and enjoyment” (p. 78) rather than early sport specialization practice activities that are not as enjoyable and ultimately undermine intrinsic motivation to continue on in the sport.

In conclusion “there is no evidence intense training and specialization before puberty are necessary to achieve elite status” (Jayanthi, et. al., 2013, p. 251). Sport participation at a young age should be focused on the enjoyment of the experience in hopes of contributing to their character and motivation toward goals. (Wall & Cote, 2007). While participation in sport carries a myriad of documented positive outcomes, early sport specialization can foster an unhealthy environment for young athletes. The research shows early sport specialization is linked to negative outcomes such as burnout, decreased self esteem due to pressure to perform, and anti

social behavior when young children do not garner the more foundational elements of organized sport such as playing together for skill building enjoyment (Wall & Cote, 2007). The skills developed by young children during this pivotal time in life are vital to creating positive outcomes in future sport experiences.

CHAPTER III METHODOLOGY

The purpose of the study was to examine how age of sport specialization, gender, participation on an individual or team sport, and/or participation in a revenue or Olympic sport affects play or burnout mindsets for student athletes at the University of North Carolina at Chapel Hill.

Participants

The target population for the study was all student-athletes participating in University of North Carolina intercollegiate athletics department during the school year 2016-2017(n=796). A census sampling method was utilized and the entire population was invited to participate in the anonymous study via email and follow-up participation opportunities were solicited via paper-copies of the survey in the Loudermilk Center of Excellence, the student-athlete academic center of Carolina Athletics. Participants range in age from 18 to 25 years. Individuals can be part of female sport teams: basketball, cross country, fencing, field hockey, golf, gymnastics, lacrosse, rowing, soccer, softball, swimming & diving, tennis, track & field, and volleyball; and male sport teams: baseball, basketball, cross country, fencing, football, golf, lacrosse, soccer, swimming & diving, tennis, track & field and wrestling.

Procedure

Email addresses were obtained through permission from the UNC-CH department of intercollegiate athletics. Once email addresses were collected, an invitation to participate in the study with an electronic link to the survey was emailed to each student-athlete using the program

Qualtrics. Following electronic data collection, in person responses were collected at The Loudermilk Center for Excellence, UNC-Chapel Hill's student-athlete academic center. The questionnaires were self administered and included an informed consent statement, sport performance and demographic questions and the play and burnout scales. Participants were asked to answer honestly and to the best of their knowledge.

Instrument

Part I of the survey asked student athletes to fill out demographic data surrounding their age, identities, class standing during the academic year 2016-2017, sport, and most importantly the age they specialized in their current intercollegiate sport. For this study, an instrument was developed that included demographic measures, a play mindset measure, and the 15 question Athlete Burnout and Engagement Questionnaire (Raedeke & Smith, 2001). The play mindset measure was created to specifically assess student-athlete engagement with the play mentality while performing their sport. The survey instructed participants to attribute their responses to the play questionnaire on a Likert scale from 1 (not at all true for me) to 5 (completely true for me). Preliminary validity was established through the development of a four-dimensional construct based on foundational play literature: "Social Play Behavior", "Neurobiological substrates of play behavior: glimpses into the structure and function of mammalian playfulness", "Play as an organizing principle: clinical evidence and personal observations" and "Animal play behavior". (Beckoff, 1985; Siviyy, 1998; Brown, 1998; Fagen, 1981). Examining those sources led to the development of preliminary questions to be used in the development of the play survey. Initial questions exemplified the seven play properties essential to assessing play behavior, purposelessness, voluntary interaction, inherent attraction, improvisational potential, diminished consciousness of self, continuation desire, and freedom from time. Through varied iterations it

was settled on a 20-question instrument where 6 of the properties had 3 questions and 1 property had 2 questions. Validity was established through review by a panel of experts including researchers from the Center for Research in Intercollegiate Athletics, an expert in survey methodology from the Odom Institute of social science, three administrator that work with athlete development, and three faculty members who study college sport. Measures of reliability were examined and included in the results section. Internal reliability was measured via factor-analysis, and those alpha levels are presented in Table 2. The reliability coefficients ranged between -.428 and .804 showing aside from the outlier a moderate to high degree of scale reliability. The instrument's scale ranged from 1-not at all true of me to 5- completely true for me.

The survey also includes use of the Athlete Burnout and Engagement Questionnaire (Raedeke & Smith 2001) with documented reliability and validity in order to assess the student's level of burnout. The Athlete Burnout Questionnaire (ABQ), is a renowned psychometrically sound measure of athlete burnout using a 5-point Likert scale ranging from 1=almost never to 5=almost always. The instrument measures athlete burnout by examining the underlying factors; emotional/physical exhaustion, reduced sense of accomplishment and sport devaluation. The researchers initially included 21 items, 7 for each dimension but in the final publication of the instrument paired down to 15 items, 5 for each dimension. Raedeke (1997) developed face validity based on burnout dimensions definitions and interviews from previous research. Researchers then utilized three sport psychology graduate students to rate each item for content validity and readability. After further modifications based on the received feedback a sample (n=7) of athletes was used to pilot test the survey for item readability and comprehension. To examine if the items developed to assess emotional/physical exhaustion, reduced sense of

accomplishment, and sport devaluation aligned with the definition of burnout a factor analysis was conducted. Correlations between the factors ranged from .11 to .46 with a mean intercorrelation of .36. Upon utilization in this study, the reliability coefficients ranged between .77 and .86 indicating moderate to high reliability. This instrument has been utilized extensively and has well-cited measures of reliability and validity (Raedeke & Smith, 2001).

Data Analysis

SPSS statistical software was the main tool used in data analyses to test reliability coefficients and further test the hypothesized measurement model (play instrument). Summary statistics, one-way ANOVA testing and correlations were run to analyze the data.

CHAPTER IV RESULTS

Demographic Statistics

Questionnaires were sent to 796 student athletes, of which 202 responded (a response rate of 25.4%). The 202 responses yielded 182 questionnaires completed in their entirety. The age of participants ranged from 18 to 25 ($M=20.12$; $SD=1.31$). Of the respondents, 37% ($n=67$) were male and 62% ($n=115$) were female. Upon examination of the data, the sample is not representative of the athlete student body as a whole. The student athlete population during school year 2016-2017 was 54% male and 46% female, a difference of 17% between sample and actual population gender makeup. Additionally, there was a slight over-representation of rowing athletes and an under representation of football players. Descriptive statistics for the athlete sample are listed in Table 1.

Table 1		
<i>Demographic information of student athletes</i>		
	%	<i>n</i>
Sex		
Male	36.8%	67
Female	62.3%	115
Race		
African American	17.6%	32
Asian	1.6%	3
Caucasian	72.0%	131
Hispanic	2.2%	4
Native American	0.5%	1
Mixed Race	6.0%	11
Missing responses: 12		

Table 1 (continued)

2016-2017 class standing		
Freshman	25.3%	46
Sophomore	28.6%	52
Junior	26.9%	49
Senior	16.5%	30
5th Year	2.7%	5
Sport		
Rowing	12.6%	23
Football	8.8%	16
W Lacrosse	6.6%	12
W Gymnastics	6.6%	12
W Cross Country	4.9%	9
Field Hockey	4.9%	9
Softball	4.9%	9
W Track & Field	4.9%	9
M Track & Field	4.4%	8
M Fencing	4.4%	8
M Swim & Dive	3.8%	7
M Lacrosse	3.8%	7
W Swim & Dive	3.8%	7
Volleyball	3.3%	6
Baseball	3.3%	6
W Basketball	2.7%	5
W Soccer	2.7%	5
M Soccer	2.7%	5
Other	10.3%	19

Note: Mean age is 20

"Other" is inclusive of sport teams from which less than 5 athletes took the survey. (W Fencing, W Golf, W Tennis, M Basketball, M Cross Country, M Golf, M Tennis, Wrestling)

Summary Statistical Analysis

Simple summary statistical analyses were conducted to determine the mean (*M*) and standard deviation (*SD*) for the Athlete Burnout Questionnaire (ABQ) and the Play

Questionnaire. Play questions included statements assessing Carolina student athlete's play mentality toward their sport. Athletes were asked to indicate their agreement on a statement ranging from 1-not at all true for me to 5- completely true for me. These results are displayed in Table 2. Also displayed in table 2 are the reliability measures (α) for each of the seven categories as a whole. The overall mean ($M=3.35$) and alpha level ($\alpha=.819$) of the play questionnaire is listed at the bottom of Table 2. Overall, elements of play that were most highly rated included an inherent attraction to their sport participation ($M = 4.30, SD = .90$), and freedom from time while playing their sport ($M = 3.59, SD = 1.21$). A high degree of variability was evident from the standard deviations with many exceeding 1.0. This high variability in responses likely drew the means toward the mid-point of the scale, as many surrounded 3.0.

Table 2

Summary Statistics for Scale of Play Questions

	<i>Mean</i>	<i>Std. Dev.</i>	<i>α</i>
Inherent Attraction	4.30	0.90	0.695
I like to play my sport	4.29	0.88	
I feel internally driven to play my sport	4.39	0.84	
I feel an inherent attraction to my sport	4.22	0.96	
Freedom from time	3.59	1.21	0.804
I regularly find myself losing track of time while playing my sport	3.68	1.18	
I am often surprised how quickly time passes while I play my sport	3.62	1.2	
As I play my sport, nothing else in the world matters	3.47	1.27	
Voluntary Interaction	3.45	1.12	0.500
When I have nothing else to do I find a way to play my sport	2.91	1.24	
I feel pressure to play my sport from others (-)	3.09	1.31	
I play my sport because I want to	4.36	0.79	
Continuation Desire	3.39	1.19	0.765
I often find myself wishing there was more time to engage in my sport	3.09	1.22	
When I play my sport I do not want time to end	3.11	1.33	
I look forward to playing my sport	3.97	1.04	
Improvisational Potential	3.08	1.32	0.482
When I play my sport in an unstructured setting, I often imagine I'm playing in different scenarios	3.15	1.29	
When I play my sport in an unstructured setting, I sometimes change the rules to keep it interesting	2.69	1.45	
When I play my sport in an unstructured setting, I rarely improvise scenarios or come up with alternative ways to play/practice my sport (-)	3.40	1.24	
Diminished Consciousness of Self	2.99	1.25	0.302
I am conscious of my appearance while playing my sport (-)	2.8	1.25	
I do not feel concerned with personal issues while playing my sport	3.41	1.25	
I am aware of the presence of onlookers while I play my sport (-)	2.78	1.27	
Appearing Purposeless	2.71	0.97	-0.428
I enjoy the process of playing my sport more than the results	3.33	1.07	
I play my sport to accomplish specific goals (-)	2.09	0.88	

Scale ranged from 1-almost never to 5-almost always

(-) = items are reverse-scored

Overall Scale mean = 2.58

Overall Scale α = .909

Similarly, the Athlete Burnout Questionnaire (ABQ) presented statements assessing athlete's burnout mentality. Athletes were asked to indicate their agreement with statements ranging from (1) almost never to (5) almost always. These results are displayed in Table 3 alongside the reliability measures (α) for each of the three categories as a whole. The overall mean ($M=2.58$) and alpha level ($\alpha=.909$) of the burnout questionnaire is listed at the bottom of

Table 3. Each of the means were below the 3.0 level, however standard deviations were high indicating a high degree of variability in responses.

Table 3

Summary Statistics for Scale of Burnout Questions

	<i>Mean</i>	<i>Std. Dev.</i>	<i>α</i>
Reduced Sense of Accomplishment	2.63	1.11	0.777
I'm accomplishing many worthwhile things in my sport (-)	2.12	0.98	
I am not achieving much in my sport	3.31	1.02	
I am not performing up to my ability in my sport	2.40	1.15	
It seems no matter what I do, I don't perform as well as I should	3.01	1.20	
I feel successful at my sport (-)	2.34	1.24	
Emotional/physical exhaustion	2.63	1.32	0.864
I feel so tired from training that I have trouble finding energy to do other things	2.35	1.34	
I feel overly tired from my sport participation	2.69	1.28	
I feel "wiped out" from my sport	2.73	1.32	
I feel physically worn out from my sport	2.48	1.34	
I am exhausted by the mental and physical demands of my sport	2.93	1.34	
Devaluation	2.48	1.17	0.791
The effort I spend in my sport would be better spent doing other things	2.41	1.21	
I don't care much about my sport performance as I used to	2.92	1.21	
I'm not into my sport like I used to be	2.52	1.28	
I feel less concerned about being successful in my sport than I used to	2.51	1.07	
I have negative feelings towards my sport	2.08	1.11	

Scale ranged from 1-almost never to 5-almost always

(-) = items are reverse-scored

Overall Scale mean = 2.58

Overall Scale α = .909

One Way Analysis of Variance

One-way analysis of variance (ANOVA) was conducted to explore whether the variance evident through the high standard deviations within the play and burnout scales were due to differences between age of sport specialization, gender, participation in individual v. team sports, or participation in revenue v. Olympic sports. In each of these comparisons, the variance was not significant between comparison groups. In examination of gender, the male participants had slightly higher levels of both play ($M = 3.47$; $SD = .527$) and burnout ($M = 2.63$; $SD = .102$) than the female participants play ($M = 3.35$; $SD = .564$) and burnout ($M = 2.55$; $SD = .833$)

levels, but these differences were not significantly different $F(1, 167) = 2.18, p = .142$ (play); $F(1, 163) = .334, p = .564$ (burnout).

In the analysis of revenue v. non-revenue sport athletes, revenue athletes had marginally higher levels of both play ($M = 3.59; SD = .392$) and burnout ($M = 2.71; SD = .501$) than the non revenue athletes play ($M = 3.37; SD = .566$) and burnout levels ($M = 2.55; SD = .840$) levels, though these differences, also, were not significantly different $F(1, 167) = 2.71, p = .102$ (play); $F(1, 163) = .604, p = .438$ (burnout). Lastly, regarding team structure, individual sport athletes had slightly lower levels of play ($M = 3.30; SD = .604$) and higher levels of burnout ($M = 2.66; SD = .865$) than team sport athletes play ($M = 3.43; SD = .523$) and burnout levels ($M = 2.53; SD = .778$), though these differences were not significantly different. $F(1, 167) = 2.30, p = .134$ (play); $F(1, 163) = .971, p = .326$.

Age of Sport Specialization

In order to examine the relationship between age of sport specialization, burnout, and play, correlations were conducted. Neither play $r(167) = -.074, p = .343$ nor burnout $r(163) = .003, p = .97$ were significantly correlated with age of sport specialization. Scatterplots demonstrating these relationships are included in Figures 1 and 2 below.

Figure 1

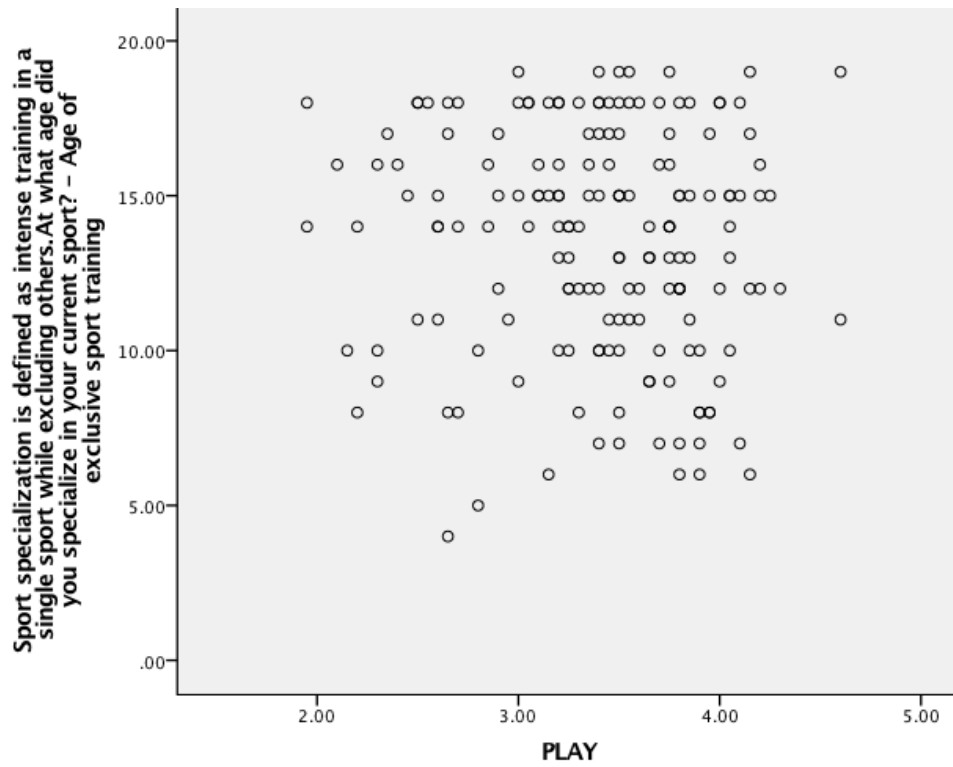
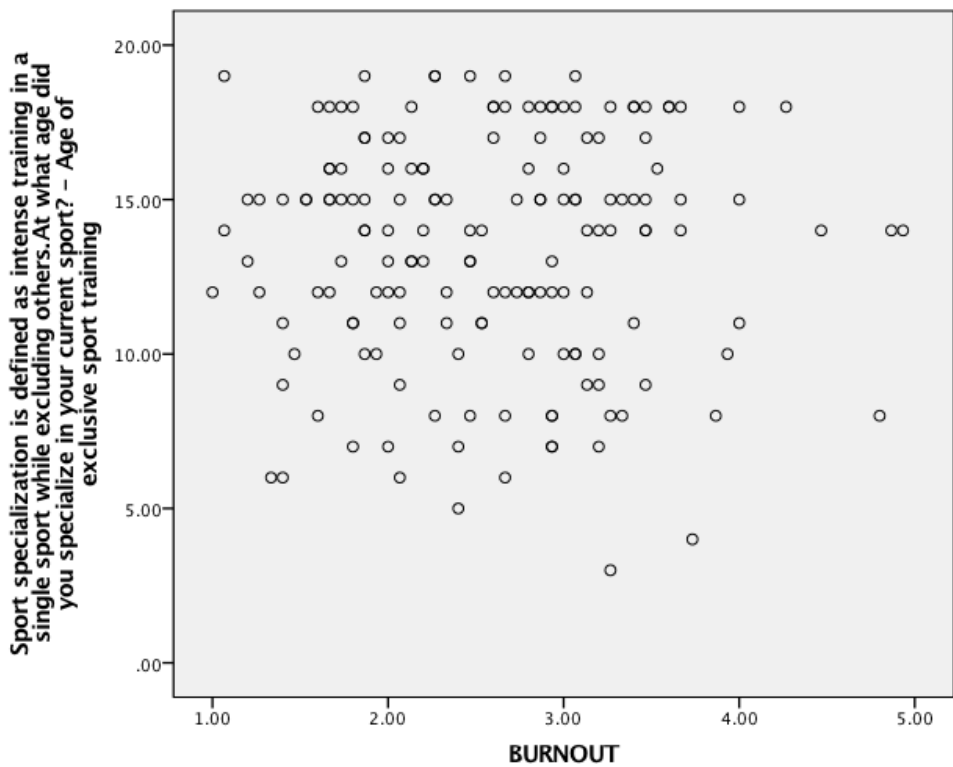


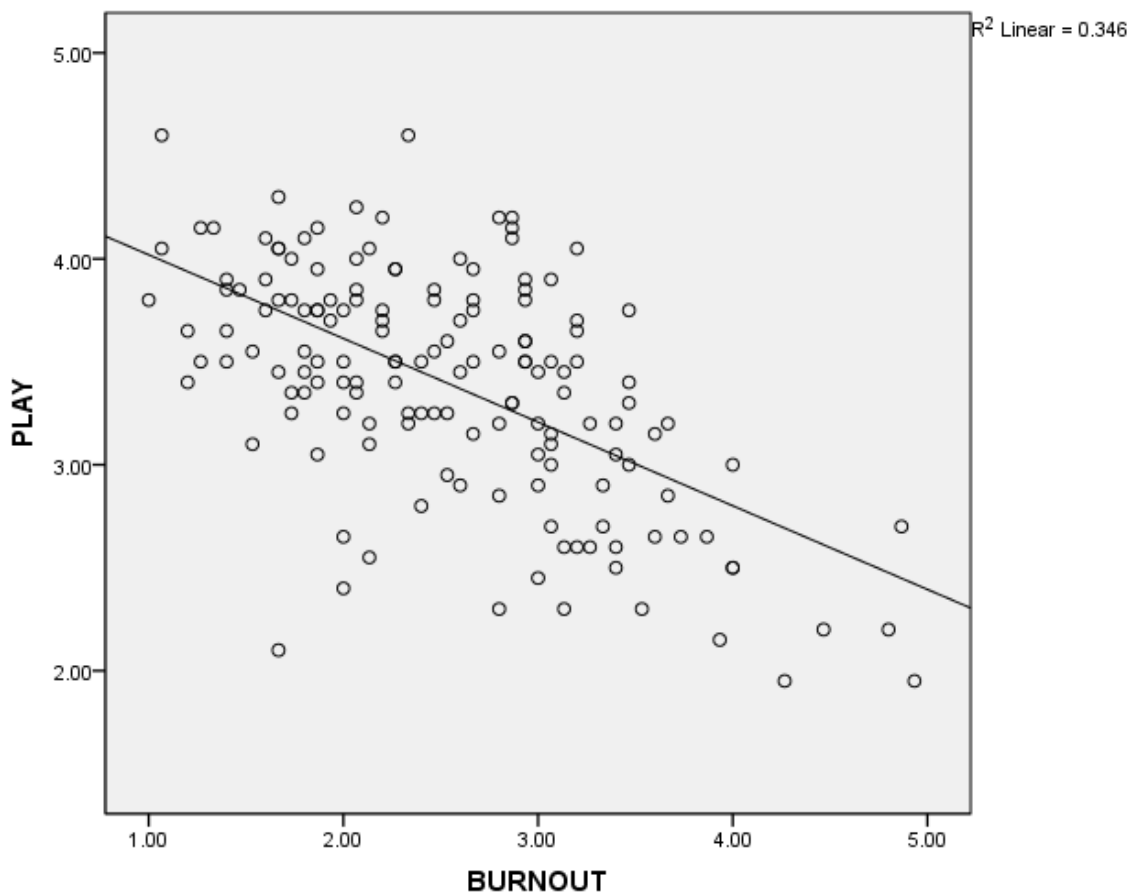
Figure 2



Relationship between Play and Burnout

In order to examine the relationship between burnout, and play, a final correlation was conducted, revealing a significant negative relationship $r(163) = -.588, p = .000$. A scatterplot demonstrating this relationship is included in Figure 3 below.

Figure 3



CHAPTER V DISCUSSION

A child's participation in organized sport is seen as a marker of normal social development for many people within American culture. Participation at a young age can establish continued positive exercise engagement into adulthood decreasing many health risk factors in addition to young people fostering positive social skills, positive self worth, and a decreased likelihood to experiment with illicit drugs (Merkel, 2013; Dowda, Levin, Pate, Trost, 2000). Psychologically, playing has maintained evolutionary significance since it continually activates neural circuitry, creating new connections not present previously (Siviy, 1998; Brown, 2009). However, although there are a myriad of benefits received from playing a sport, children who specialize too early run the risk of negating the positive outcome associated with sport and open themselves up to the possibility of burnout when no longer playing for skill building enjoyment (Wall & Cote, 2007) . Once thought of as a guaranteed path to collegiate sport participation, early sport specialization is not a reliable source at predicting future sport success (Wall & Cote, 2007; Callender, 2010; Goncalves, et. al, 2012; Elbe, Moesch, Hauge, & Wikman, 2010). Which suggests athletes can develop negative emotions and mentalities toward their sport in the pursuit of collegiate sport participation. It is important to gather data on the psychological approach collegiate athletes hold and whether the age athletes specialize in their sport impacts burnout and/or a play mindset.

Play Instrument Development

A strong contribution of this study to the body of literature is the pilot-testing of a Play Mentality Instrument (PMI-20). This 20-question apparatus, which includes the seven play properties - purposelessness, voluntary interaction, inherent attraction, improvisational potential, diminished consciousness of self, continuation desire, and freedom from time can be utilized in future research and tested to further test its reliability and validity as a measure of play (Schmid, 2009; Brown, 2009; Upton, 2015). Overall, the pilot testing revealed a strong internal reliability with an alpha exceeding .90. Subscales varied in their strength, and future researchers utilizing the survey should consider modifying sections with low or negative alphas. Of particular concern was the “appearing purposeless” subsection, which had negative alpha level. This was also the only subsection with two factors rather than three. While there was a reverse scored item within that subset, which was accounted for, it is unclear why participants responded in different ways to the two seemingly similar questions.

Play and burnout mindsets in Intercollegiate Athletes

Data within this sample suggested no relationship between the age of sport specialization and a play or burnout mentality. Additionally, no significant differences in play or burnout mentalities between male or female athletes, those who participate in individual v. team sports, or those who participate in revenue v. Olympic sports. These findings along with previous research indicate athletes from all types of sports can experience burnout however early sport specialization is not an inherent determinant of the syndrome. Athletes may see the early commitment to their sport with fervor to excel. This study was the first of its kind measuring play, but the study builds on previous burnout literature. Directly relevant previous studies have had differing outcomes when examining whether women or men would express high burnout

ratings (Gould, D., Tuffey, S., Udry, E., & Loehr, J., 1996, Finch, 1999; Wyner, 2004; Allen, 2006). These varying results could be based on differences in sample, or possibly different scales of measurement utilized. Other burnout scales utilized in the various studies referenced include the Eades Athletic Burnout Inventory and the Competitive State Anxiety Inventory.

Relative to differences between individual and team sport athletes, the insignificant differences in burnout between the two groups contradict previous research that has shown individual sport athletes to have higher levels of burnout than their team sport counterparts (Finch, 1999; Wyner, 2004; Allen, 2006). Previous results align with research that indicate individual athletes do not experience the “team” support dynamic with their peers considering they become opponents within a competition setting. Additionally, blame cannot be assigned to another party in the event of fault and individual sport practice is usually highly repetitive in nature, taxing the athlete even more. Again, differences between this sample and previous research could be attributed to the sample, or instruments utilized. The measure used in this study was the Athlete Burnout Questionnaire and differs significantly in structure from the Eades Athletic Burnout Inventory. The Eades Athletic Burnout Questionnaire is a 36-item self-reporting instrument, utilizing a 7-point Likert scale, the first of its kind to assess burnout in athletes (Eades, 1990).

The gap in data surrounding the burnout mentalities comparing revenue and Olympic sport athletes is particularly curious because the high visibility of revenue sport athletes can underpin the perfectionistic strivings (Rasquinha et al., 2014) which can yield negative outcomes, however, the strong team/family identity many revenue sports exhibit can yield a higher perceived support from teammates which mitigates feelings of athlete burnout (Defreese

& Smith, 2012). Further research is necessary to conclusively identify if the added visibility revenue sports receive makes them more susceptible to burnout than Olympic sport athletes.

The reality may be that differences in burnout and play (evidenced by high standard deviations) are based on factors other than any of the independent variables examined within this research, but rather factors such as difference in coaching styles or absence of “collegiate experience” outside of sport (e.g. excessive sport time demands). Examining the standard deviations of both the play and burnout output, with many exceeding 1.0, indicates a high degree of variability was evident in survey responses. For the play scale specifically, this high variability in responses likely drew the means toward the mid-point of the scale, as many surrounded 3.0. This variability indicates there were very strong responses either one way or another either identifying greatly with a play identity or away from it; demonstrating high or low levels of burnout.

Family support or levels of income could be another factor potentially affecting these mental states. It could be possible, regardless of the age one starts to play their sport, for an athlete to view their collegiate performance as something of a contractual obligation. Many athletes may view participation in their sport as a job, with scholarship assistance as compensation for this job (Orlick & Mosher, 1978; Amrose & Horn, 2000; Medic et. al., 2007).

The high variability in both the play and burnout measures indicates there are many athletes who are highly burned-out, and not experiencing a play-centric experience, and others who are not burned out and experiencing play as they pursue their sport. Sport administrators can benefit greatly from knowing their athlete’s mindset as it pertains to their sport. Being able to create motivation tactics that will engage their athletes to perform better is a critical element

for a coach to be successful considering at the end of the day their contract renewal is mostly based on their ability to win.

Relationship between Play and Burnout

Analysis revealed play is negatively associated with burnout, which is an important measure for practitioners to be knowledgeable of to ensure the longevity of their athletes' sport performance. It can provide athletic department sport psychologists with another measure to gauge their athlete's mentality towards their sport. More importantly, this information can also prove fruitful for high school, youth, club sport coaches and administrators an opportunity to give young athletes a positive sport experience. Considering burnout is a complex psychological syndrome brought on by an overlay of factors it would be completely correct to say a sport experience devoid of play could be related to the development of burnout symptoms.

Limitations and Suggestions for Further Research

The creation of a play scale used in conjunction with the Athlete Burnout Questionnaire filled an important gap in research examining collegiate athletes mentalities toward their sport considering no study has combined the two measures to gain perspective on the mindset of Division I athletes. Further research will be needed to expand the claim play and burnouts have a negative relationship beyond collegiate athletes at University of North Carolina at Chapel Hill. Researchers could replicate this study within other collegiate athletic departments across the Division I competition level to conclude if the results witnessed in this study are conclusive across other highly competitive athletic departments.

Carolina is a highly competitive school both academically and athletically, meaning the individuals who get to participate on a sports team at the university have been exposed to high-level expectations previously. They continue to, at the worst, endure, at the best, thrive within the highly competitive structure surrounding their collegiate experience. This sample therefore has an obvious limitation being that the students who might have left their sport due to burnout are not included in the sample. Another limitation in this study is an absence of coach support in the distribution of the survey. As individuals responsible for the young people they are coaching the potential to find out that your athletes feel burnout leads to a responsibility to address and rectify their situation. This might come from a supervisory position, which could launch further review and bench players and coaches, alike. The potential for a negative output from the information within this survey might not be appealing to coaching staff and therefore might not mandate or push their athletes to complete it.

An area of research that can expand on this study would be examining if there is a difference in the perceived play and burnout mentalities of starters vs. athletes coming off the bench. To play at Carolina, even the individuals who do not see play until later in the competition, are high-level performers, and likely were elite in high school. While both groups receive extrinsic rewards and motivation (e.g. championship ring, campus notoriety etc.) regardless of performance when the team wins, internal self perception based on the difference in playing time could yield interesting results regarding play and burnout mentalities.

Another area of future research surrounds comparing the outcomes of this study against the three Divisions of intercollegiate play. Noting the structural and financial difference across the three divisions, further research could explore whether the reduced number/absence of scholarship, and less visibility on a national level, something that can be seen as an externally

motivating element to ones participation in college sport, at the DII and DIII level, produces similar outcomes as noted in this study. Doing so will illustrate that a playful engagement with ones sport is not just something found at the highest level of collegiate competition, but present through other divisional play as well.

APPENDIX #1

Final Athlete Play Mentality Instrument (PMI-20)

Item#	Subscale	Item Text
1	AP	I enjoy the process of playing my sport more than the results
2	AP	I play my sport to accomplish specific goals
3	V	When I have nothing else to do I find a way to play my sport
4	V	I feel pressure to play my sport from others
5	V	I play my sport because I want to
6	IA	I like to play my sport
7	IA	I feel internally driven to play my sport
8	IA	I feel an inherent attraction to my sport
9	IP	When I play my sport in an unstructured setting, I often imagine I'm playing in different scenarios
10	IP	When I play my sport in an unstructured setting, I sometimes change the rules to keep it interesting
11	IP	When I play my sport in an unstructured setting, I rarely improvise scenarios or come up with alternative ways to play/practice my sport
12	DC	I am conscious of my appearance while playing my sport
13	DC	I do not feel concerned with personal issues while playing my sport
14	DC	I am aware of the presence of onlookers while I play my sport
15	CD	I often find myself wishing there was more time to engage in my sport
16	CD	When I play my sport I do not want the time to end
17	CD	I look forward to playing my sport
18	FT	I regularly find myself losing track of time while playing my sport
19	FT	I am often surprised how quickly time passes while I play my sport
20	FT	As I play my sport, nothing else in the world matters.

Note: Response set is a 5-point Likert scale of (1) “not at all true for me” (2) “rarely” (3) “sometimes” (4) “frequently” (5) “almost always”. Items 2, 4, 11, 12, and 14 are reverse-scored. AP=appearing purposeless, V=voluntary, IA= inherent attraction, IP= improvisational potential, DC= diminished sense of consciousness, CD= continuation desire, FT= Freedom from time.

APPENDIX #2

Athlete Burnout Questionnaire

Item#	Subscale	Item Text
1	RA	I'm accomplishing many worthwhile things in my sport
2	E	I feel so tired from my training that I have trouble finding energy to do other things
3	D	The effort I spend in my sport would be better spent doing other things
4	E	I feel overly tired from my sport participation
5	RA	I am not achieving much in my sport
6	D	I don't care as much about my sport performance as I used to
7	RA	I am not performing up to my ability in my sport
8	E	I feel "wiped out" from my sport
9	D	I'm not into my sport like I used to be
10	E	I feel physically worn out from my sport
11	D	I feel less concerned about being successful in my sport than I used to
12	E	I am exhausted by the mental and physical demands of my sport
13	RA	It seems not matter what I do, I don't perform as well as I should
14	RA	I feel successful in my sport
15	D	I have negative feelings toward my sport

Note: Response set is a 5-point Likert scale of (1) "not at all true for me" (2) "rarely" (3) "sometimes" (4) "frequently" (5) "almost always". Items 1&14 are reversed-scored. RA= reduced sense of accomplishment, E=emotional/physical exhaustion, D=devaluation

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