ASSOCIATION OF COACH, PEER, AND PARENT-INITIATED MOTIVATIONAL CLIMATE WITH BURNOUT AND ENGAGEMENT

by

Jordan Barbee

May, 2020

Director of Thesis: Thomas D. Raedeke, PhD

Major Department: Kinesiology

Sport participation can be an engaging experience and result in health benefits, skill development, and social camaraderie. However, it can also result in negative outcomes such as burnout. Burnout is negatively associated with sport engagement and the quality of athlete experiences. It also contributes to the reasons why athletes discontinue sport and negatively impacts their well-being. Research has shown that burnout and engagement are potentially influenced by social agents (e.g. parents, peers, and coaches) such as through the motivational climate they create. A mastery climate is one in which success is defined in terms of self-referenced standards of excellence with a focus on improvement, mistakes being viewed as a part of learning, and effort. Within a performance climate, success is defined in terms of social comparison and outperforming others. This can result in intra-team rivalries and conflict. Although research has shown that the motivational climate created by social agents impacts athletes sport experiences, few studies have examined whether the climate created by coaches, parents, or peers has the strongest association with burnout and engagement. Therefore, the first purpose of this study was to examine the relationship of the motivational climate created by coaches, parents, and peers with engagement and burnout. The second purpose was to determine

which social agent is the strongest predictor of athlete engagement and burnout. Following student activities coordinator and coach approval, 150 high school athletes completed surveys on athlete engagement and burnout, along with surveys assessing athlete perceptions of the motivational climate created by coaches, parents, and peers. Correlational analyses were used to examine the relationship of athlete engagement and burnout with motivational climate while regression analyses were used to determine which social agent's motivational climate had the strongest association with burnout and engagement. Overall, a mastery climate created by coaches and peers had significant (p<0.05), small to moderate relationships with the devaluation and reduced sense of accomplishment dimension of burnout (i.e., r = -.22 to -.44), and engagement (i.e., r = .21 to .37). A parent mastery climate was found to be unrelated to burnout and had small, significant relationships with engagement (i.e., r = .21 to .27). The relationship between performance climates created by the social agents with burnout and engagement were smaller in magnitude compared to the mastery climates (r= -.10 to .19). When all three social agents were examined together, the motivational climates collectively explained 13.3% of the variance for overall burnout and 29.3% of the variance for overall engagement. When examining individual subscales, the most variance in burnout was reduced accomplishment (r^2 = 0.26), followed by devaluation (r^2= 0.13) and exhaustion (r^2 = 0.06). For engagement each subscale was similar to overall engagement (r^2= 0.20 to r^2= 0.23). It was found that the mastery climates created by coaches and peers predicted lower burnout scores whereas the climate created by parents was not a significant predictor. Mastery climates created by all three social agents were predictive (p<0.05) of higher engagement with peers having stronger associations compared to coaches and parents. The extent to which parents and peers created a performance climate was unrelated to burnout or engagement. Contrary to predictions, a coach created performance

climate was linked to higher engagement, but the relationship was small in magnitude (partial r= 0.18). Overall, when high school athletes perceived that their coaches and peers created a mastery climate, they reported higher engagement and lower burnout. A mastery climate in which success is defined by on effort, learning, and improvement should be created by coaches, parents and peers for athletes to experience high engagement and low burnout.

ASSOCIATION OF COACH, PEER, AND PARENT-INITIATED MOTIVATIONAL CLIMATE WITH BURNOUT AND ENGAGEMENT

A Thesis

Presented to The Faculty of the Department of Kinesiology

East Carolina University

In Partial Fulfillment of the Requirements for the Degree

Master of Science in Kinesiology

Sport and Exercise Psychology Concentration

by

Jordan Barbee

May, 2020

Association of Coach, Peer, and Parent-Initiated Motivational Climate with Burnout and Engagement

by

Jordan Barbee

APPROVED BY:

DIRECTOR OF
THESIS: _____

Thomas D. Raedeke, PhD

COMMITTEE MEMBER: _____

Katrina D. DuBose, PhD

COMMITTEE MEMBER: _____

Christine M. Habeeb, PhD

CHAIR OF THE DEPARTMENT
OF KINESIOLOGY: _____

Jookoo Yun, PhD

DEAN OF THE
GRADUATE SCHOOL: _____

(Paul J. Gemperline, PhD)

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1: INTRODUCTION

Millions of youth participate in sport (Aspen Institute's Project Play, 2019). Sport participation can have many positive aspects such as enjoyment, health benefits, skill development, and social camaraderie. Sport can also result in negative outcomes like burnout (Gould, 2019). Burnout is a psychological syndrome described by emotional and physical exhaustion, reduced sense of accomplishment and sport devaluation (Raedeke & Smith, 2001). Athletes who experience burnout report feeling fatigued as well as express more of a "don't care" attitude towards their sport and their performance. Athletes also state that they are not meeting their goals like they once did or are staying stagnant in their performance. Burnout can potentially impact physical well-being and mental health and is linked to chronic stress and motivational processes.

Aligned with the tenants of positive psychology, it is important to examine positive states as well as negative states. One positive state that has been examined is athlete engagement. Engagement is defined as an enduring and relatively stable experiential state, which refers to generalized positive cognitions and affect about one's sport (Curran, Hill, Hall, & Jowett, 2015). There are four dimensions of engagement; vigor (a state of mental and physical liveliness in sport), dedication (a desire to invest effort and time toward personally meaningful goals in sport), confidence (a belief in one's ability to accomplish things in sport), and enthusiasm (feelings of excitement and enjoyment in sport; Curran et al., 2015). Conceptually, engagement is viewed as the opposite of burnout which is why it is important to study along with burnout.

Burnout is an important issue warranting scientific inquiry because its prevalence is thought to be on the rise due to increasing physical training demands and the psychosocial pressures associated with sport participation (Gustafsson, Kenttä, & Hassmén, 2011). In addition,

burnout is thought to have a negative impact on athletes' sport experiences and their physical and mental well-being. Burnout may contribute to athletes discontinuing sport (DeFreese, Raedeke, & Smith, 2015). In addition, burnout has a negative impact on well-being. For example, research has found moderately strong correlations between burnout and depression (Cresswell & Eklund, 2006). Research using structural equation modeling and longitudinal designs have found burnout to be a mediator in the relationship between depression and stress and an antecedent of depression (DeFrancisco, Arce, del Pilar Vílchez, & Vales, 2016; Frank, Nixdorf, & Beckmann, 2017). In addition to being linked to depression, burnout has also been associated with diminished sense of overall well-being and life satisfaction (DeFreese & Smith, 2014). Given the apparent prevalence of burnout and the toll it can have on well-being, burnout is an important public health issue. Given that, research focused on understanding factors that may contribute to burnout may serve as the foundation for developing interventions to prevent its occurrence.

Burnout is a reaction to chronic stress and is linked to motivational processes. Several studies have found that burnout is linked to chronic stress in both work site settings (Cordes & Dougherty, 1993; Schaufeli, Maslach, & Marek, 1993) and sport (Frank et al., 2017; Raedeke, Lunney, & Venables, 2002; Raedeke & Smith, 2004; Smith, 1986). While burnout is a reaction to chronic stress, it has also been found to be linked to motivational processes. Gould (1996) noted that burnout occurs when personal motivation has gone awry and what was once an enjoyable and personally satisfying activity is no longer seen to be so. Specifically, burnout occurs when there is a shift from either self-determined or autonomous motivation types to nonself-determined or controlled types of motivation. Li, Wang, Pyun, and Kee (2013) conducted a meta-analysis and found that amotivation (i.e., athlete sees no reason to participate) has a strong positive association and intrinsic motivation (i.e., athlete chooses to participate for

the joy of participating) shows a strong negative association with burnout. Other types of autonomous extrinsic motivation (identified and integrated regulations) show small negative relationships with burnout, while controlled extrinsic motivation (external and introjected regulations) are only weakly positively associated with burnout. Extending cross-sectional correlational studies, structural equation modeling further found that motivational quality predicted changes in burnout, but not the opposite of burnout predicting changes in motivational quality (Lonsdale & Hodge, 2010).

A substantial amount of research shows that social agents (i.e., coaches, parents, and peers) impact the quality of athletes' sport experience including stress and motivational processes (Chan, Lonsdale, & Fung, 2012), as well as burnout (Pacewicz, Mellano, & Smith, 2019). Coaches potentially impact burnout through their leadership style (Vealey, Armstrong, Comar & Greenleaf, 1998; Price & Weiss, 2000). Peers also play a role in an athlete's susceptibility to burnout, specifically through social support. Research has found that peer social support has a moderately strong negative relationship with burnout (DeFreese & Smith, 2014) as well as mediates the relationship between athlete gratitude and burnout (Gabana, Steinfeldt, Wong, & Chung, 2017). Lastly, parental behaviors have been connected to an athlete's perception of burnout. Research has shown that parents can be a source of both stress and pressure (Raedeke et al. 2002; Stein, Raedeke, & Glenn, 1999; Gould, Tuffey, Udry, & Loehr, 1996). Research has found that athletes report higher perceptions of burnout when they experience negative parental influence (Pacewicz et al., 2019).

Although there are a variety of reasons as to why social agents may impact burnout and engagement, the motivational climate they create may play an important role. There are two types of team motivational climates, mastery and performance (see Table 1; Miulli & Nordin-

Bates, 2011). As illustrated, mastery, or task, motivational climate is one that focuses on learning, participation, skill mastery, effort and understanding that mistakes are a part of learning (Duda & Treasure, 2015). In a mastery climate, effort is rewarded, and improvement and encouragement are emphasized by coaches, parents and teammates (Lemyre, Hall & Roberts, 2008; Smith, Gustafsson, & Hassmén, 2010; Gustafsson, Hill, Stenling, & Wagnsson, 2016). In a performance, or ego, initiated motivational climate the focus is on norm-referenced standards of excellence with a focus on social comparisons (Duda & Treasure, 2015). In a performance climate, there are intra-team rivalries (outperforming teammates is viewed as important), intra-team conflict (negative comments to put a teammate down) and star players receive special attention (Lemyre et al., 2008; Smith et al., 2010). Athletes in a performance climate also worry about their performance (worry-conductive; Duda & Treasure, 2015; White, Duda, & Hart 1992) and find importance in winning without trying hard (success-without-effort; White et al., 1992). The motivational climate created within a team could potentially associate with both stress and motivation quality and therefore burnout and engagement.

Table 1

Motivational Climate Characteristics

Mastery Climate Characteristics	**Performance Climate Characteristics**
Encourages self-improvement	Encourages being the best
Supports all students	Supports star students
Mistakes help athletes learn	Mistakes are not acceptable
Play and learn with peers	Compare and compete with peers
Reward effort	Reward success

The motivational climate created in a team could potentially impact an athlete's feelings of stress. Physiologically, those in an ego-involving climate experience more of an increase in salivary cortisol, a stress responsive hormone, than those in a task-involving climate (Hogue, Fry, & Fry, 2017; Hogue, Fry, Fry, & Pressman, 2013). Outside of sport, research has found that a performance climate tends to have a positive relationship with somatic anxiety (Papaioannou & Kouli, 1999) and life stress (Castro-Sánchez, Zurita-Ortega, García-Marmol, & Chacón-Cuberos, 2019). A mastery climate has found to have the opposite relationship with somatic anxiety and life stress (Papaioannou & Kouli, 1999; Castro-Sánchez et al., 2019). When examining motivational climate and sport stress specifically, a performance climate is positively associated whereas a mastery climate is negatively associated with stress (Kristiansen, Halvari, & Roberts, 2012; Pensgaard & Roberts, 2000). In addition to help manage stress, it has been found that adaptive coping strategies are positively related to a mastery climate, which means athletes experiencing this climate may be able to cope with stress easier than in a performance climate (Kristiansen, Roberts, & Abrahamsen, 2007).

Not only is motivational climate associated with athlete stress levels, it has also been linked to motivational processes in both physical education and sport settings. In both physical education and sport settings, research has found that intrinsic motivation, identified and integrated regulations were positively associated with a mastery climate while amotivation, external and introjected regulations were positively associated with a performance climate (Ommundsen & Kval, 2007; Standage, Duda, & Ntoumanis, 2003; Parish & Treasure, 2003; Ruiz, Haapanen, Tolvanen, Robazza, & Duda, 2017; Harwood, Keegan, Smith & Raine, 2015; Ahmadi, Namazizadeh, & Mokhtari, 2012). Overall, a mastery climate is positively related to self-determined or autonomous motivation types while a performance climate is positively

related to controlled motivation. Given the association of motivational climate with stress and motivational processes, the motivational climate may also associate with burnout.

A coach's motivational climate is related to a variety of motivation related constructs associated with burnout and engagement. Research has found that a coach-initiated mastery motivational climate tends to be positively associated with basic needs satisfaction (Alvarez, Balaguer, Castillo, & Duda, 2012), enjoyment (Weiss, Amorose, & Wilko, 2009), and engagement (Curran et al., 2015). A performance climate tends to have negative associations with basic needs satisfaction (Alvarez et al., 2012), enjoyment (Weiss et al., 2009) and engagement (Curran et al., 2015). In addition, athletes who discontinue sport are more likely to perceive a performance-oriented climate over a mastery-oriented climate compared to those who continue (Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002). Research has noted in the relationship of coach-initiated motivational climate and burnout that a performance climate is positively related to burnout versus a mastery climate (Lemyre et al., 2008). If a coach initiates a mastery climate, then an athlete could experience positive aspects of sport, such as engagement, whereas a performance climate could lead to potential negative feelings toward sport, such as burnout.

While a coach-initiated motivational climate is associated with burnout perceptions and burnout, other social agents, such as peers and parents, could potentially also play a role. Peer-initiated motivational climate and burnout has been studied specifically. Smith, Gustafsson, and Hassmén (2010) found that a mastery climate initiated by peers has a stronger relationship with burnout than does a performance climate in a sample of 206 16 to 19-year-old athletes.

Parent-initiated climate and its relationship to burnout has also been studied. In samples of 204 14 to 17-year-olds and 237 16 to 19-year-olds, results indicate that a perceived mastery

climate has a positive, small relationship with task orientation (White, 1996) and a negative, small relationship with burnout (Gustaffson et al., 2016). Both samples also found that a perceived performance climate has a positive, small relationship with ego-orientation (White, 1996) and a positive, moderate relationship burnout (Gustaffson et al., 2016). Based on these results, the conclusion can be made that a mastery climate might help prevent burnout whereas a performance climate could make it more likely.

While researchers have examined each individual social agent and their relationship with burnout, it is necessary to investigate multiple social agents together. It is necessary because while one might be a strong predictor of burnout when examined individually, it might not be true when compared to another social agent. This information can then be used for interventions to help prevent burnout in athletes. If researchers know which social agent's motivational climate has the strongest associations with burnout, then the interventions could focus on teaching the social agent strategies to help athletes stay in sport longer and not experience feelings of burnout.

Researchers have examined the differences of two and all three social agent's motivational climates and quality of athlete sport experiences. O'Rourke, Smith, Smoll, and Cumming (2014), sampled athletes ages 9-14 years old and studied the difference of a coach-initiated motivational climate and a parent-initiated motivational climate in relation to self-esteem and self-determined motivation. The results revealed that a parent-initiated mastery motivational climate promoted higher self-esteem and self-determined motivation compared to a coach mastery motivational climate and a parent performance climate also promoted lower self-esteem and self-determined motivation compared to a coach performance climate. Another study sampled athletes ages 12-17 years of age and examined the difference in peer and coach-initiated motivational climate and concluded that a peer-initiated motivational climate was a stronger

predictor of enjoyment, a factor contributing to burnout and engagement (Ntoumanis, Vazou, & Duda, 2006). Overall, these two studies suggest that parent and peer-initiated motivational climates have stronger associations with burnout than a coach-initiated motivational climate.

Currently, minimal research has examined of all three motivational climates and burnout. Although not examining the relationship between mastery and performance climate and burnout specifically, research has examined all three social agents' task-involving motivational climate and athletes' goal orientation. In addition, they examined whether athletes' goal orientation is associated with perceived sport competence, self-esteem, enjoyment and intention to continue playing. In a sample of males ages 12-15 years of age, results indicated that a parent-initiated task motivational climate is a stronger predictor of task goal orientation than a coach or peer-initiated motivational climate. Results further found that a higher task orientation is associated with higher sport competence, self-esteem and enjoyment ultimately leading to an athlete more likely to return to play (Atkins, Johnson, Force, & Petrie, 2014). This study suggests that a parent mastery motivational climate could be a predictor of positive sport experiences; however, this study did not examine how a performance climate is related to positive sport experiences. Given that a parent motivational climate was more strongly associated with a variety of psychosocial constructs, it is plausible that it could play a role in the prevention of burnout.

Research has shown that coaches, parents and peers all play a role in an athlete's sport experiences. However, age of the athlete may determine which social agent has more influence on those sport experiences. Research has found parents have a strong association with the quality of youth sport experience compared to peers (Chan et al., 2012; O'Rourke et al., 2014; Sánchez-Miguel, Leo, Sánchez-Olivia, Amado, & García-Calvo, 2013; Leo, Sánchez, Sánchez, Amado & García Calvo, 2009). However, across studies, peers seem to have a strong association with the

quality of athlete experiences in high school-aged athletes (Chan et al., 2012; Ntoumanis et al., 2006). Coaches have been found to have associations with sport experiences in both young athletes and adolescent aged athletes (Chan et al., 2012; Ntoumanis et al., 2006; Curran et al., 2015; Lemyre et al., 2008; Weiss et al., 2009; Kipp & Amorose, 2008; Sarrazin et al., 2002; Alvarez et al., 2012). Therefore, coaches and peers could have more of an impact on high school aged athletes' perceptions of engagement and burnout compared to parents.

It is known that coaches, peers and parents have a role in an athlete's life and impact the way athletes perform. It is also known that burnout is an important issue and all three social agents have been associated with burnout. However, very little research has been conducted examining motivational climate and burnout, specifically examining all three social agents together. There are two purposes to this study. The first is to add information to the gap of motivational climate and burnout and engagement, specifically in high school athletes, by examining the relationships between motivational climate and burnout and motivational climate and engagement. The second purpose is to determine which social agent, parents, coaches or peers, is a stronger predictor of athlete burnout and engagement. Since previous research (Kristiansen et al., 2007; Ommundsen & Kvalø, 2007; Standage et al., 2003; Parish & Treasure, 2003; Ruiz, et al., 2017; Harwood et al., 2015; Ahmadi et al., 2012; Alvarez et al., 2012; Weiss et al., 2009; Curran et al., 2015) has found that a mastery climate is related to positive outcomes, it is hypothesized that athlete engagement will be positively related to a mastery climate, while burnout will be positively related to a performance climate. Chan et al. (2012) found that social influences from parents were more important in children than in adolescents, peers were more influential in adolescents and coaches were influential in both children and adolescents.

Therefore, it is also hypothesized that peers and coaches will be more predictive of engagement and burnout than parents in high school aged athletes.

CHAPTER 2: LITERATURE REVIEW

This chapter will discuss the importance of burnout, how burnout is linked to both chronic stress and motivational processes, how motivational climate is linked to both stress and motivation type, and how the motivational climate created by varying social agents (parents, coaches, and peers) associate with burnout and related constructs.

Why is Burnout an Important Issue?

While sport is seen as an enjoyment for many athletes, intense demands associated with training and competition can lead to chronic stress, motivational difficulties, and eventually burnout. Burnout is a psychological syndrome consisting of emotional/physical exhaustion, reduced sense of accomplishment, and sport devaluation. Physical/emotional exhaustion is when athletes are physically and emotionally fatigued from psychosocial and physical demands of sport participation. Athletes who experience burnout also have a feeling of reduced sense of accomplishment, meaning that they are not feeling that they are meeting their goals and do not feel as successful as they once did. Lastly, athletes who experience burnout suffer from sport devaluation in which they stop caring about sport and their own performance (Raedeke & Smith, 2001).

Prevalence.

Burnout is an important issue because its prevalence is thought to be increasing due to the modern sport culture. It is not uncommon for athletes to specialize at a young age and train nearly year-round. Along with high physical training demands, the psychosocial pressures associated with sport participation can also be high (Gustafsson et al., 2011). However, the prevalence of burnout is not well established since clinical cut-offs have not been established within burnout measures. In a review, Gustafsson, DeFreese, and Madigan (2017) estimate that

between 1% and 9% of athletes may experience high levels of burnout. They also note that this estimate may underestimate its occurrence as most studies sample current athletes and those experiencing burnout may have already left the sport. Even if the prevalence is low, burnout is a significant public health issue given the millions of athletes worldwide and the potential impact it has on athlete well-being.

Burnout and mental health.

Burnout is also seen as an important issue because it may potentially impact not only physical well-being but also mental health including indices of both ill- and well-being. For example, burnout has been associated with negative mental outcomes such as depression (DeFrancisco et al., 2016) with correlations typically being in the moderate range (Cresswell & Eklund, 2006). DeFrancisco et al. (2016) sampled 450 Spanish athletes to examine the relationships among perceived stress, burnout and depression. Structural equation modeling was used to examine whether burnout mediated the relationship between stress and depression. Results from this study concluded that stress accounted for 43% of the variance of burnout and burnout accounted for 50% of the variance of depression. Results also found that stress had a direct effect on depression but also an indirect mediating effect via burnout. This study provides evidence that burnout is a positive predictor of depression as well as a possible mediator between the relationship of depression and stress. Burnout can then be described as a potential antecedent of depression.

While DeFrancisco et al's. (2016) finding suggest that burnout may be an antecedent of depression, their study design was cross sectional. Frank et al. (2017) findings suggest that burnout and depression are bidirectionally related. Their study consisted of a sample of junior elite German athletes who completed questionnaires on stress, burnout and depression three

times over the course of a season. Results from this study indicated that burnout and depression are related and associated with stress. In addition, using cross-lagged panel analysis, results indicated that burnout was not simply an antecedent of depression, rather that burnout and depression are bidirectionally associated. This suggests that depression can contribute to burnout but also that burnout can contribute to depression.

Not only has burnout been linked to depression, it is negatively associated with positive indicators of well-being such as life satisfaction. As part of study examining the association of social constructs and burnout, DeFreese and Smith (2014) examined the relationship between burnout and well-being. 465 collegiate athletes completed a multipart questionnaire including questionnaires on overall burnout and well-being assessed via life satisfaction across a season. Results indicated a moderate, negative correlation between the burnout and well-being (r=-0.40). This suggests that those who suffer from burnout are more likely to have a negative sense of well-being (i.e., lower life satisfaction).

Burnout is an important public health issue due to the millions of athletes who participate in sport and because of the toll it can have on well-being, but its exact prevalence is unknown. Given that burnout is an important issue within the sport community, researchers have examined potential antecedents and factors that may contribute to its occurrence, as well as its relationship with well-being. Since burnout is potentially an important public health issue, it is also necessary to understand factors that may potentially cause it.

Burnout, chronic stress, and motivational processes

Burnout and chronic stress.

Burnout is typically viewed as a reaction to chronic stress. In support, numerous studies have found that burnout is linked to chronic stress outside of sport (Cordes & Dougherty, 1993;

Schaufeli et al., 1993). Likewise, in an early position paper on athlete burnout in sport, Smith (1986) highlighted how burnout is a result of chronic stress and other studies have supported that claim (Raedeke & Smith, 2004; Raedeke et al., 2002). In a more recent study conducted by Frank et al. (2017), junior elite German athletes completed questionnaires on stress, burnout and depression three times across a season. Correlations were calculated between the variables and results indicated that there was a strong relationship between chronic stress and burnout (r=0.72) and in regression analysis, chronic stress was a significant and strong predictor of athlete burnout (b*=0.54; p<0.001).

In addition to stress, research has also shown that burnout is associated with factors that are commonly associated with stress processes such as social support and coping resources. Raedeke and Smith (2004) examined social support and coping resources to understand if they have stress-mediated or stress-moderating associations with athlete burnout. Results found that social support (r= -0.34), coping resources (r= -0.37), and stress (r= 0.63) were all related to burnout. However, the relationship of social support and coping resources with burnout were mediated by stress. These findings highlight the importance of stress as a possible direct antecedent of burnout.

Burnout and motivational processes.

In addition to being a reaction to chronic stress, burnout is also linked to motivational processes. Motivation can be viewed on a continuum ranging, from amotivation to intrinsic motivation. Amotivation is described as no internal or external motivation, meaning that the athlete has no reason to participate. Between amotivation and intrinsic motivation are four types of extrinsic motivation including external regulation, introjected regulation, identified regulation and integrated regulation. External regulation is defined being driven by a desire to receive

external rewards or avoid punishers. Introjected regulation is when athletes participate due to internal rewards such as self-worth being contingent on performance or to avoid internal punishers like feelings of guilt and shame. Identified regulation is when participation is self-determined because it is valued but for extrinsic benefits such as fitness or social benefits. Integrated regulation is when athletes participate because sport is a part of the athlete's identity. Lastly intrinsic motivation is described as when participation is self-determined and inspired by inherent pleasure of the activity. Amotivation can be viewed as "I hate to participate", external and introjected regulation as "I have to participate", identified and integrated regulation as "I want to participate" and intrinsic as "I love to participate" (Duda & Treasure, 2015). Amotivation, external regulation and introjected regulation are viewed as reflecting non-self-determined or non-autonomous motivation and are considered maladaptive because they have been associated with a variety of negative outcomes including increased feelings of stress and anxiety. In contrast, identified regulation, integrated regulation and intrinsic motivation reflect autonomous or self-determined motivation types and have been associated with a variety of adaptive motivational outcomes such as enjoyment, effort, and persistence (Duda & Treasure, 2015).

Not only is burnout linked to stress, it is also connected to motivational processes. In an early conceptual paper Smith (1986) noted that burnout is associated with decreased motivation evident by psychological, physical, and emotional withdrawal from something that was once seen as enjoyable as a result from chronic stress. Echoing that position, Gould (1996) noted that although burnout is stress-related, it also linked to motivational processes. Specifically, he notes that burnout is a consequence of motivation gone awry. According to Gould (1996) when burnout occurs, personal motivation has gone awry and what was once an enjoyable and

personally satisfying activity is no longer seen to be so. Thus, examining motivational processes contribute to understanding burnout.

In one of the first studies to investigate burnout and its link to motivational processes, Gould et al. (1996) compared tennis players who experienced burnout to those who did not. The two groups consisting of 30 athletes who experienced burnout and 32 comparison players completed questionnaires on burnout and sport motivation. Stepwise discriminant function analyses and univariate tests were conducted in order to examine the differences between the two groups. Results indicated that burned out players were lower in external motivation but higher on amotivation than non-burned out players. The other motivation types (i.e., introjected, identified, and intrinsic regulations) did not differ between those who experienced burnout and those who did not. These results suggest that there is a link to burnout and motivational processes and the findings were able to set a foundation for future studies.

While Gould et al. (1996) findings, aside from amotivation, were not aligned with theoretical predictions, more recent research has supported that athletes reporting higher burnout report more maladaptive motivational characteristics. Li et al. (2013) conducted a meta-analysis to describe the overall relationships between motivation type or behavioral regulation and burnout. Overall burnout exhibited a strong negative correlation with self-determined motivation. The results from examining the specific types of motivation were that amotivation was strongly positively and intrinsic motivation negatively associated with burnout. Autonomous extrinsic (identified and integrated regulations) showed small negative relationships with burnout while controlled extrinsic (extrinsic and introjected regulations) were only weakly positively associated with burnout. Also, motivation types were more strongly associated with reduced sense of accomplishment and devaluation compared to exhaustion. These findings suggest that

reduced sense of accomplishment and devaluation are more strongly associated with behavioral regulation, especially amotivation and intrinsic motivation, compared to exhaustion.

As found in the meta-analysis conducted by Li et al. (2013), motivational processes have been studied as a predictor of athlete burnout. Holmberg and Sheridan (2013), aimed to further add to the foundation that motivational processes can be used to possibly predict burnout among collegiate athletes as well answer how are the dimensions of athlete burnout are differentially related to specific behavioral regulations. Five hundred ninety-eight NCAA Division I athletes completed questionnaires on behavioral regulation and athlete burnout. Correlations were used to determine the relationships between the dimensions of burnout and the degree of self-determination among the college athletes. Results showed that intrinsic motivation had a negative relationship with burnout while amotivation had a positive relationship. Specifically, amotivation had the strongest relationship with each of the dimensions of burnout (exhaustion 0.55, reduced sense of accomplishment 0.52 and devaluation 0.71), while intrinsic motivation had a negative, moderate relationship with each of the dimensions (exhaustion -0.30, reduced sense of accomplishment -0.48, and devaluation -0.58). Controlled regulatory styles (introjected and external regulation) had a positive relationship with burnout and that autonomous regulatory styles (integrated and identified regulation) had a negative relationship with burnout. This study further confirmed that maladaptive motivation types are positively related to burnout while adaptive types tend to be negatively related.

Several studies have found that maladaptive motivation is linked to burnout, what is unclear is whether burnout leads to maladaptive motivation or if maladaptive motivation leads to burnout. Lonsdale and Hodge (2010) investigated whether or not motivational quality predicted changes in burnout and vice versa and if these two elements had a reciprocal relationship

(meaning that motivational quality predicts changes in burnout and/or whether burnout predicts changes in motivational quality). Data from the participants was collected twice during a 4-month period. 181 athletes (119 athletes at time 2 responded) completed the Behavioral Regulation in Sport Questionnaire as well as the Athlete Burnout Questionnaire. The correlation relationships indicate that the motivation types amotivation, external regulation and introjected regulation tend to have a positive relationship with dimensions of burnout while identified regulation, integrated regulation and intrinsic motivation tend to have a negative relationship with the dimensions of burnout. The structural equation modeling analysis found that overall, motivational quality predicted changes in burnout, but burnout did not predict changes in motivational quality. Results from this study include at time 1 amotivation predicted time 2 exhaustion and reduced sense of accomplishment but burnout at time 1 did not predict amotivation at time 2. Time 1 external regulation also predicted time 2 exhaustion and burnout scores were not significant for the motivation type at time 2. Paths from time 1 introjected regulation to all three dimensions of burnout at time 2 were significant but all three dimensions at time 1 to introjected regulation at time 2 were not significant. In contrast to previous research, the current study also found that burnout predicted decreases in autonomous extrinsic motivation, but autonomous extrinsic motivation did not predict decreases in burnout. Results from this study revealed that low levels of overall self-determination and the presence of controlled motivation were antecedents of increased athlete burnout, meaning that maladaptive motivation leads to burnout.

Throughout several studies, researchers have found that burnout is linked to both chronic stress and motivational processes. Maladaptive motivation tends to be positively related to burnout while adaptive motivation tends to be negatively related. Given that burnout is

connected to both stress and motivational processes, it is then important to understand the relationship between stress, motivational processes and motivational climate.

Motivational Climate, Stress, and Motivational Processes

Motivational climate basics.

Burnout is linked to both stress and motivational processes. Given that, features of the sport environment that result in chronic stress or maladaptive motivation may play important roles in the burnout process. One such factor is the motivational climate that has been shown to associate with both stress and motivational processes. There are two types of team motivational climates, mastery and performance. A mastery, or task, initiated motivational climate is one created in which athletes are focused on learning something new, improving skills, and providing effort to succeed. Athletes in a mastery initiated motivational climate are focused on their personal improvement and see success as performing better than before (Duda & Treasure, 2015). Those in a mastery climate view mistakes as a stepping stone to success and often persist through obstacles. Success in a mastery climate is defined as self-referenced standards of excellence, meaning how one is compared to one's self. An athlete in a mastery climate does not compare themselves to others, rather measures success based on how well they have performed based on previous performances. Athletes also focus pushing other teammates to their full potential and providing each other support when working towards achieving personal and team goals (Smith, Gustafsson, & Hassmén, 2010).

A performance, or ego, initiated motivational climate is when the team focuses on norm-referenced standards of excellence with a focus on social comparison processes. Within an outcome climate the emphasis is on doing better than others and proving one's ability. Athletes in a performance-oriented climate are often concerned with the outcome and view failure as a

negative reflection of their ability. In a performance-oriented climate, effort is a double-edge sword where athletes know that they need to work hard to improve but are afraid to try when they are more likely to fail. A mastery or performance climate can shape the way an athlete views their sporting experience and potentially their feelings towards burnout.

Motivational climate and stress.

Given that athletic seasons are getting longer and training volumes are increasing (Gustafsson et al., 2011) athletes may be at risk of experiencing increased stress. With an increase of stress, there is also an increase of cortisol. Research has shown that there is an increase in salivary cortisol levels, a stress responsive hormone, in those who are in ego-involving climates than those who are in task-involving climates (Hogue et al., 2017 & Hogue et al., 2013). These results indicate that if an athlete experiences an ego-involving climate, then they are likely to have increases in cortisol, meaning more stress, than one experiencing a task-involving climate.

In addition to a physiological stress response, heightened demands are associated with anxiety. Papaioannou and Kouli (1999) examined students in physical education classes and found that those in an ego-involving climate reported higher somatic anxiety than those in the task-involving climate. The results reveal that those in an ego-involving were more tense and felt a pressure to perform versus those in a task-involving climate. While this study did not examine stress specifically, anxiety is closely related so the argument can be made that this same relationship could be found between stress and motivational climate. Research has also examined the relationship of motivational climate in sport and life stress and found that an ego climate had a positive relationship with life stress while a task climate had a negative relationship (Castro-

Sánchez et al., 2019). This study indicates that the motivational climate in sport also relates to an athlete's levels of life stress positively or negatively.

Stress can also be seen in relationships within the team. Kristiansen et al. (2012) studied the coach-athlete relationship with stress and motivational climate and found that a performance climate was positively associated with coach-athlete stress, while a mastery climate was associated negatively. Along with coach-athlete relationship, the team motivational climate may impact stress levels. Pensgaard and Roberts (2000) aimed to examine the relationship of motivational climate, individual goal dispositions, perceived relative ability and sources of distress in Norwegian athletes who participated in the 1994 Olympic Winter Games. Athletes completed questionnaires on perceived motivational climate, goal orientations, sources of distress, total distress and perceived ability. Through regression analysis, it was found that performance climate was the significant predictor of cognitive distress (beta=0.33) and a positive predictor of the coach and team as sources of distress (beta=0.38). Performance climate was also the only significant predictor of total distress (beta=0.43). A mastery climate, on the other hand, was found to be a negative predictor of the coach and team as sources of distress (beta=-0.30). Results from this study revealed that a high performance-oriented climate perceived more cognitive sources of distress than a low performance-oriented climate. The group with high performance-oriented climate also reported the coach and team to be significantly higher sources of distress than the low performance-oriented climate group. Although the study used a correlational design, findings suggest that a performance-oriented climate could potentially cause more distress in athletes than a mastery-oriented climate.

Since it is known that a performance-oriented climate could lead to higher distress levels in athletes than a mastery-oriented climate, one climate could potentially associate with more

effective coping strategies than the other. Kristiansen et al. (2007), were interested in the use of adaptive and maladaptive coping strategies based on task or ego involvement in elite wrestlers. The elite wrestlers completed questionnaires on perception of success, motivational climate and different coping strategies. Adaptive coping strategies are those that help the athletes better cope with competitive stress, while maladaptive coping strategies reduce their chance to perform well. The wrestlers also participated in in-depth interviews, direct observations and written documents. Results indicated that a mastery climate was positively correlated more adaptive strategies such as acceptance, active coping, planning, emotional support, instrumental support and positive reframe. On the other hand, a performance climate was positively correlated with maladaptive coping strategies such as behavioral disengagement, self-distraction, substance use, and denial. This study revealed that wrestlers tend to cope better in competitive situations since they tend to use their adaptive coping strategies, and these coping strategies had a positive correlation with both task orientation and mastery climate. While this study did not examine motivational climate and stress directly, it infers that a mastery climate promotes better coping resources in competitions than a performance climate. Overall, a performance climate tends to lead to distress and maladaptive forms of coping, which could lead to negative effects on the athlete.

Motivational climate and motivational processes.

It is known that non-self-determined motivation processes lead to a greater chance in maladaptive sport outcomes, like burnout, while self-determined motivational processes lead to more adaptive psychological outcomes. What needs to be further examined is how performance and mastery motivational climates are linked to the different motivational processes. This relationship has been investigated in physical education settings as well as in sport. In physical education settings, it has been found that intrinsic motivation has a positive relationship with a

mastery climate, while a negative relationship with a performance climate (Ommundsen & Kalvø, 2007). Ommundsen and Kalvø (2007) also found that amotivation had a positive relationship with performance climate, and a negative relationship with mastery climate. When examining more specific forms of motivation, research has found a mastery climate to be a positive predictor and strongly related to more self-determined forms of motivation (intrinsic motivation and identified regulation), while a negative predictor of amotivation (Standage et al., 2003; Parish & Treasure, 2003). When considering a performance climate, it has been found that this climate is a positive predictor and more strongly related to less self-determined types of motivation (amotivation and external regulation), while a negative predictor of identified regulation (Standage et al., 2003; Parish & Treasure, 2003).

Overall, research has found that a performance, or ego-involving, motivational climate tends to have a positive relationship with non-self-determined motivation in sport settings. Ruiz et al. (2017) found that an ego-involving climate was positively related to both controlled motivation (r=0.26) and amotivation (r=0.22). In a review by Harwood et al. (2015), a performance climate had positive effect sizes with external regulation (0.34) and amotivation (0.40). A mastery, or task-involving, climate on the other hand tends to have a positive relationship with self-determined motivation. Ruiz et al. (2017) found that a task-involving climate had a positive relationship with autonomous motivation (r=0.35) and Harwood et al. (2015) found that a mastery climate had positive effect sizes with intrinsic motivation (0.55) and identified regulation (0.46). A study by Ahmadi et al. (2012) further makes the point that a mastery climate has positive relationships with self-determined motivation while a performance climate has positive relationships with non-self-determined motivation. Results from their study showed that mastery-oriented climate had positive correlations with self-determined motivation

(internal motivation (r=0.50), identified (r=0.58) and integrated (r=0.21) regulations) and negative relationships with external regulation (r=-0.29) and amotivation (r=-0.29) while no relationship with introjected regulation (r=0.01). A performance climate was positively correlated with non-self-determined motivation (amotivation (r=0.37), external (r=0.37) and introjected (r=0.18) regulations) and negatively related to identified regulation (r=-0.15) and intrinsic motivation (r=-0.20).

A more recent study examined perceived motivational climate and motivation. Buch, Nerstad, and Säfvenbom (2017), aimed to examine the relationship between perceived mastery and performance climates in predicting an increase in intrinsic motivation (adaptive motivation). Norwegian cadets from three different military academies participated in this study and measures were taken at two points. Mastery and performance climate along with mastery and performance orientation were taken at time 1, while intrinsic motivation was measured at time 1 and time 2. Results found that a mastery climate correlated positively with intrinsic motivation at time 1 (r=0.27) and time 2 (r=0.31), while performance climate did not correlate significantly with intrinsic motivation at time 1 (r=-0.10) and time 2 (r=0.01). These results indicate that a mastery climate should be created if an increase in intrinsic motivation is desired within a team. In summary, a mastery climate is related to more self-determined forms of motivation, while also able to potentially increase intrinsic motivation over time. A performance climate is related to less self-determined forms of motivation, therefore not likely to increase intrinsic motivation throughout a team setting.

A motivational climate can either be mastery, focusing on improvement, or performance, focusing on the outcome. It has been discussed that motivational climate is linked to stress, specifically that a performance climate is related to higher levels of cortisol, anxiety, life stress,

maladaptive coping resources and could lead to more distress than a mastery climate. It was also found that a mastery climate tends to be related to more self-determined motivation, while a performance climate tends to be related to non-self-determined motivation. Since motivational climate is seen to be linked to stress and motivational processes and so is burnout, it is necessary to examine how burnout and motivational climate are related. Specifically examining the motivational climate created by different social agents and their relationship to burnout.

Motivational Climate and Burnout

Burnout is related to mental health, chronic stress, and motivational processes (DeFrancisco et al., 2016; Cresswell & Eklund, 2006; Frank et al., 2017; DeFreese & Smith, 2014; Cordes & Dougherty, 1993; Schaufeli et al., 1993; Raedeke & Smith, 2004; Raedeke et al., 2002; Smith, 1986; Gould, 1996; Gould et al., 1996; Li et al., 2013; Holmberg & Sheridan, 2013; Lonsdale & Hodge, 2010). In addition, perceived motivational climate is related to chronic stress and motivational processes. These connections suggest that motivational climate may be a predictor of burnout. This section will describe the connection between different social agent's motivational climate and factors indirectly related to burnout as well as burnout itself.

Social agents play a role in an athlete's sport experience. The motivational climate created by the social agent could possibly influence the athlete to have positive or negative feelings about their sport. Social agents (i.e., coaches, parents, peers) impact the quality of athletes' sport experience including stress and motivational processes (Chan et al., 2012) and burnout. A meta-analysis studied social constructs and burnout and found that social support and relatedness had negative associations with burnout perceptions. Negative social interactions (unwanted advice or intrusion, failure to provide help, unsympathetic or insensitive behavior, and rejection or neglect), however, had positive associations with burnout (Pacewicz et al.,

2019). Parents, coaches and peers can have an effect on an athlete through social support, relatedness, and negative social interactions. Since all three social agents are related to burnout, it is important to examine the motivational climate that they create and the climate's relationship with burnout.

Coach-initiated motivational climate and burnout.

It is known that coaches potentially impact burnout, and this could be through their behaviors and motivational climate created. Research has shown that coach behaviors are related to burnout. Vealey et al. (1998), found that those collegiate athletes who recorded higher on burnout dimensions perceived their coaches as less empathetic, emphasized dispraise as a motivational technique and emphasized winning as more important than athlete development. Athletes who had stronger perceptions of accomplishment perceived their coaches being more empathetic, emphasized more praise and were less winning-oriented. These findings indicate that negative coaching behaviors could potentially have athletes feeling dimensions of burnout verses positive coaching behaviors. Price and Weiss (2000) also investigated the relationship between coaching behaviors and athlete burnout. They found that athletes enjoyed playing, felt more proficient, less anxious and "burned-out" when their coaches allowed them to determine their own goals, participate in team decisions and help plan training sessions. However, athletes stated more negative psychological responses when coaches were seen as uncompromising leaders of their team. Positive psychological responses tend to happen when coaches allow athletes to have a voice on the team, while negative responses happen when the coach views the team as "theirs". Lastly, González-García, Martinent, and Morales (2019), examined two leadership styles of coaches; authoritarian and democratic. In contrast to previous research, they found that athletes who perceived their coach having authoritarian behavior also exhibited high social support and

positive feedback. Authoritarian coaching behaviors tend to be associated with negative athletes' outcomes, such as burnout. This study also found that those athletes who reported high scores of their coach having democratic behavior also had low scores on social support and positive feedback whereas previous research has found that democratic behavior is associated with high social support and positive feedback. The way an athlete perceives their coach's behavior and leadership is important since their behavior is related to burnout.

More specifically, through interviews, Raedeke et al. (2002) discussed with 13 United States Swimming senior coaches their personal views on burnout. Coaches described what they thought were the differences in dropping out versus burnout, the signs and symptoms of burnout, and the factors causing and preventing burnout. When discussing the factors of burnout, coaches stated that when a coach is outcome oriented this can cause a coach to put too much pressure on an athlete and ultimately result in burnout. Another factor discussed was the sense of swimmer entrapment, swimmers only defining themselves as swimmers. When coaches notice that their swimmers only focus on being a swimmer, they are more likely to create a performance climate in which athletes experience anxiety and stress and are more likely to burnout than coaches who focuses on individual development. Focusing on athlete development in and out of sport coincided with a more mastery focus. When asked what can be done in order to reduce the pressures on a swimmer in hopes to decrease feelings of burnout, coaches stated that support from the coach, team and parents as support from others is a characteristic of a mastery climate. Given the impact that coaches have on the quality of athlete sport experiences, it is possible that the motivational climate created by coaches could potentially be associated with elevated burnout. This current study aims to examine the impact that coaches have on their feelings of burnout and engagement specifically.

A coach's feedback is associated with the motivational climate created and the climate created has been related to athletes' psychosocial responses like competence, enjoyment and intrinsic motivation. Weiss, Amorose, and Wilko (2009) had 141 female soccer players complete questionnaires on perceived coach feedback, perceived competence, enjoyment and intrinsic motivation. A correlation analyses showed that a mastery climate had a small relationship with perceived soccer competence (r=0.14), enjoyment (r=0.22), and intrinsic motivation (r=0.12). A performance climate resulted in small, negative relationships with perceived soccer competence (r=-0.10), enjoyment (r=-0.20), and intrinsic motivation (r=-0.20). While the correlation relationships were small, the perceived mastery climate demonstrated positive relationships with enjoyment, intrinsic motivation, and perceived competence, while the performance climate resulted in negative relationships. This can be interpreted as that a mastery climate could potentially lead to players enjoying the sport more, having more of a sense of competence and being more intrinsically motivated than when in a performance climate. Results from this study showed that beneficial achievement-related outcomes are positively associated with positive and informational feedback and a mastery motivational climate, while negatively related to a performance motivational climate.

It has been discussed that coaching behaviors are related to motivational climate and burnout (Vealey et al., 1998; Price & Weiss, 2000; González-García et al., 2019; Raedeke et al., 2002) and that coach feedback is associated with motivational climate (Weiss et al., 2009). Research has stated that coach-initiated motivational climate is associated to constructs closely related burnout, such as basic needs, self-determined motivation, engagement and dropout. However, there are few studies that have investigated coach-initiated motivational climate and burnout directly.

Research has supported that there is a relationship between a coach-initiated motivational climate and basic needs satisfaction (i.e., autonomy, competence and relatedness) and behavioral regulation (Alvarez et al., 2012). For their study, 370 male soccer players answered questionnaires on perceived motivational climate, basic psychological needs, intrinsic motivation, well-being, and future sport intentions. Results from this study concluded that there were positive and significant path coefficients between a coach-initiated mastery climate and competence (0.12), autonomy (0.43) and relatedness (0.34) using structural equation modeling. Also, through structural equation modeling, it is noted that basic need satisfaction predicted intrinsic motivation. In turn, intrinsic motivation was a strong predictor of future intentions to participate. While this study did not directly examine the relationship between burnout and coach-initiated motivational climate, if an athlete is having a sense that they can perform tasks on their own, a confident feeling in their abilities and feelings support from the team, then it is unlikely that they will experience exhaustion, feelings of reduced sense of accomplishment or become uninterested in their sport.

Along with basic needs satisfaction, researchers have also studied coach-initiated motivational climate and its' relation to self-determined motivation. Kipp and Amorose (2008) sampled 200 female high school-aged athletes who participated in a wide range of sports. Participants completed measures assessing self-determined motivation and motivational climate as emphasized by the coach. Self-determined motivation was evaluated by the self-determination index, which is a combination of all of the scores from the questionnaire that assessed intrinsic motivation, amotivation and all types of extrinsic motivation. As predicted, there were positive, strong and significant relationships between self-determined motivation and cooperative learning (r=0.51), important role (r=0.56), and effort and improvement (r=0.55) which are all

dimensions of a mastery climate. Also as expected by researchers, there were negative, moderate to weak, and significant relationships between self-determined motivation and punishment for mistakes (r=-0.40), unequal recognition (r=-0.45), and intra-team rivalry (r=-0.13) which are all dimensions of a performance climate. Results from this study indicate that if a mastery climate is created, the athlete could potentially be more self-determined, intrinsically motivated, than when a performance climate is created by the coach.

While research has examined the relationship of a coach-initiated motivational climate and needs satisfaction (Alvarez et al., 2012) as well as self-determined motivation (Kipp & Amorose, 2008), it has examined the relationship of engagement and coach-initiated motivational climate. Conceptually, engagement is the direct opposite of burnout. Athlete engagement can be defined as an enduring and relatively stable experiential state, which refers to generalized positive cognitions and affect about one's sport (Curran et al., 2015). Curran et al. (2015), studied the four dimensions of engagement to examine their relationship between the two different motivational climates created by coaches. The four dimensions of engagement are vigor, a state of mental and physical liveliness in sport, dedication, the want to put effort and time toward goals in sport, confidence, the belief in one's ability to accomplish tasks in sport, and enthusiasm, feelings of excitement and enjoyment in sport. 260 athletes participated in this study where they answered questionnaires on their engagement in their sport as well as perceived motivational climate. The results of this study indicated that there was a positive, moderate correlation between a coach-initiated mastery climate and confidence (r= 0.47), dedication (r= 0.54), enthusiasm (r= 0.58) and vigor (r= 0.58). These results can then be interpreted that if a mastery-initiated motivational climate by coaches has a positive and moderate relationship to engagement that it would have a negative relationship to burnout, since burnout and engagement

are seen as opposites. On the other side, since a performance-initiated motivational climate by coaches had a negative, little to no relationship with all four dimensions of engagement, then it is possible that a performance climate would have little to no or a small positive relationship with burnout.

Researchers have also shown that motivational climate is associated with sport discontinuation, or dropout, which is a factor very closely related to burnout. Sarrazin, Vallerand, Guillet, Pelletier, and Cury (2002), used a model to examine motivational climate, basic needs and the intention of dropping out. Three hundred thirty-five French handball females between the ages of 13 and 15 participated in this study. They were ranked at the regional level and were training an average of four hours a week. Players completed questionnaires on motivation towards sport, perceived motivational climate, basic needs, and future sport intentions and 21 months later, the handball federation was contacted for the current list of players. 74 players were identified as to have dropped out. Results showed that at the beginning of the study, dropout players were significantly less intrinsically motivated and displayed more amotivation than persistent players. Dropout players perceived motivational climate emphasized by the coach as significantly less task-involving than persistent players and significantly more ego-involving than persistent players. The more ego-involving the coach's behavior, female handball players had fewer positive perceptions whereas the more task-involving the coach's behavior, female handball players had more positive perceptions. This study reveals that handball players who dropped out perceived the motivational climate to be more performance oriented and less task oriented than those who continued participation. They also reported higher levels of amotivation and lower levels of intrinsic motivation than those who stick with the sport.

In direct support of the relationship of coach initiated motivational climate and burnout in a longitudinal study sampling elite and junior elite athletes, Lemyre et al. (2008) reported a positive, small relationship between a performance climate and to overall burnout (r= 0.23). In addition, they reported negative, small to moderate relationship between a mastery climate and overall burnout (r= -0.30). The results broken down further concluded that a mastery climate was the stronger predictor of the three aspects of burnout as well, exhaustion (r= -0.28), reduced sense of accomplishment (r= -0.33) and sport devaluation (r= -0.10) versus a performance climate and the aspects of burnout, exhaustion (r= 0.22), reduced sense of accomplishment (r= 0.16) and sport devaluation (r=0.17). This study reveals that a coach-initiated mastery motivational climate was a strong predictor of burnout over a performance motivational climate

Research has determined that a coach-initiated motivational climate has relations with different coaching behaviors, basic need satisfaction, self-determined motivation, athlete engagement, and athlete discontinuation. It was also determined that a coach-initiated motivational climate is also related to athlete burnout and that a mastery climate tends to have a negative relationship while a performance climate tends to have a positive relationship. This finding indicates that how a coach structures their sport environment could potentially lead to athletes experiencing feelings of burnout. The current study will be examining the sport environment created by coaches specifically in a high school setting.

Peer-initiated motivational climate and burnout.

Coaches potentially impact burnout, but other social agents could impact burnout such as peers. Some studies have investigated that social support could act as a moderator or mediator in relationships related to burnout in athletes (DeFreese & Smith, 2014; Gabana et al., 2017). DeFreese and Smith (2014) examined the relationship of social support and negative social

interactions as possible moderators in the relationship of burnout and sport stress. 465 collegiate athletes from men's and women's swimming and diving and track and field completed questionnaires on social support, negative social interactions, perceived stress, and athlete burnout. When examining the univariate correlations, social support had a negative, moderate association with overall burnout (r= -0.40), physical/emotional exhaustion (r= -0.33), reduced sense of accomplishment (r= -0.36) and devaluation (r= -0.33). There was then a small to moderate, positive association between negative social interactions and overall burnout (r= 0.30), exhaustion (r= 0.31), reduced sense of accomplishment (r= 0.24) and devaluation (r= 0.19). Results from this study further indicates that social support has a negative association with overall burnout.

While DeFreese and Smith (2014) found that social support has a negative association with overall burnout, Gabana et al. (2017), examined whether social support was a mediator in athlete burnout and gratitude. Two hundred ninety-three varsity athletes from NCAA Division I and III schools completed questionnaires on gratitude, sport satisfaction, burnout and perceived social support. Results indicated that there was a small, negative association between burnout and gratitude (r= -0.14) and a moderate, negative association between burnout and perceived social support (r= -0.48). This study did conclude that social support can be a mediator between gratitude and athlete burnout, meaning that those who had higher levels of gratitude perceived more social support available to them; ultimately being less susceptible to burnout. This means that social support could potentially help in determining levels of burnout in athletes.

While social support is one common behavior that peers provide to their teammates, the motivational climate they initiate is also important in helping to develop players physically and psychologically. In a temporal study Jõesaar, Hein, and Hagger (2012) examined the stability of

perceived task-involving peer motivational climate (ego-involving peer motivational climate was not examined) and perceived autonomy support from the coach and how these constructs influence youth athletes' intrinsic motivation for sport participation over a year. Task-involving peer motivational climate had a relationship of r= 0.37 at time 1 and a relationship of r= 0.54 at time 2 with intrinsic motivation. This indicates that an athlete's motivation towards an activity is increased when they are encouraged to be task-orientated by their peers. A peer-initiated task climate is able to promote higher levels intrinsic motivation based on this study.

While Jõesaar, Hein, and Hagger (2012) examined peer-initiated motivational climate and intrinsic motivation, other research has looked at peer-initiated motivational climate and burnout specifically. One of those studies was conducted by Smith, Gustafsson, and Hassmén (2010), and they hypothesized that a task-created motivational climate with the components of improvement, relatedness support and effort would be negatively associated with burnout while performance-created motivational climate with the components of intra-team competition/ability and intra-team conflict would have a positive association with burnout. Peers can provide help to improve their teammates as well as encouraging them to try their best and making sure that everyone on the team feels valued, which would be seen more in a mastery climate. The negatives that can happen on a team is when teammates are placed head-to-head to go against each other and when negative comments put others down, which would be seen more in a performance climate. Two hundred six athletes, ages 16-19, participating in 22 different sports completed questionnaires on perceived stress, perceived peer-created motivational climate and burnout. Results from this study were that improvement, effort, and relatedness support all had negative, small to moderate relationships with reduced sense of accomplishment and sport devaluation. Correlations include improvement (r= -0.30 and -0.26), effort (r=-0.32 and -0.33)

and relatedness support (r= -0.33 and -0.29). Exhaustion was not related to improvement, effort or relatedness support. There was little to no correlation with performance aspect of intra-team competition/ability and exhaustion, reduced sense of accomplishment and sport devaluation. While the performance aspect of intra-team conflict did result in higher correlations than intra-team competition/ability with exhaustion (r= 0.17), reduced sense of accomplishment (r= 0.22) and sport devaluation (r= 0.26), they are still considered low in magnitude. This study suggests that a peer-initiated mastery climate is more likely to have negative associations with burnout (less burnout) than a performance climate initiated by peers.

Based on the results from Smith et al. (2010), a mastery peer-initiated motivational climate is going to have a stronger relationship with burnout than a performance motivational climate. Peers who encourage their teammates to perform their best and improve from previous performances are more likely to keep their teammates playing than those who speak negatively to each other and always see team drills as a competition. Athletes who experience a mastery peer-initiated motivational climate are less likely to experience fatigue (emotionally and physically), a "don't care" attitude towards their sport and performance, and are more likely to reach their goals. What this study is examining is in high school athletes, do their peers impact their levels of burnout and engagement more so than their coach or their parent.

Parent-initiated motivational climate and burnout.

Just as peers and coaches can help create a positive or negative sporting experience for any athlete, parents can also play a role in that aspect of an athlete's life. A parent-initiated motivational climate inspires how a child perceives, understands and reacts to achievement-related contexts, such as practices and competitions (Atkins et al., 2014). A mastery-involving climate is going to be described as parents promoting learning and enjoyment and expressing

satisfaction when their child tries something new, indicating that mistakes are a part of the learning process and they ultimately improve as an outcome (Atkins et al., 2014).

A parent motivational climate is important to study because the climate they create could pose as a predictor in burnout. White (1996) examined the relationship between goal orientation and the motivational climate initiated by parents in 204 female volleyball players ages 14-17. The athletes completed the Parent-Initiated Motivational Climate Questionnaire and the Task and Ego Orientation in Sport Questionnaire. The results of this study were expected, where an athlete who had a higher task orientation than ego indicated that their parents focused on a learning/enjoyment climate and not an environment where success was connected to low levels of effort. A learning/enjoyment climate produced a beta value of 0.27 when predicting a task orientation, while success without effort was the stronger predictor of ego-orientation than worry conductive produced a beta value of 0.14. A learning/enjoyment climate is one where emphasis is placed on mastering basic skills, realizing that mistakes are a part of learning, trying hard and having fun as well as challenging one's self and not being afraid of failure. Also noted in this study was that children who thought their parents preferred a motivational climate where success was linked to low effort was more likely to have an ego orientation than a mastery one. Previous research (Duda, 1992; Duda, 1993; Seifriz, Duda, & Chi, 1992) has shown that athletes who have an ego orientation are more likely to have maladaptive motivational patterns; such as unsportsmanlike conduct, aggressive acts in sport, cheating and participating in sport to gain social status. A parent who places emphasis on trying hard and having fun and less on ability and outcome are going to instill positive aspects in their child's life. A mastery-climate could be seen as a weak predictor of burnout if it does in fact produce many positive outcomes such as enjoying learning and trying hard.

Parent-initiated motivational climate could have an impact on an athlete's perceptions of burnout. Very few studies have examined the relationship between parent-initiated motivational climate and burnout, it is expected that athletes who perceive their parents initiating a performance-oriented climate are more likely to report higher levels of burnout (Gustafsson et al., 2016). Researchers examined 237 junior athletes, ages 16-19, who played a wide range of sports completed questionnaires on burnout, multidimensional perfectionism and perceived parent initiated motivational climate. There are three components of a parent-initiated motivational climate learning/enjoyment climate (mastery), worry-conductive climate (performance) and success-without-effort climate (performance). A learning/enjoyment climate is one that focuses on the enjoyment of learning new skills, worry-conductive is one where athletes focus on failing while success-without-effort is one where the athlete finds importance in giving little effort trying to succeed. The results of this study indicate that a worry-conductive climate (performance) had a positive, small to moderate relationship with all three dimensions of burnout, exhaustion (r= 0.32), sport devaluation (r= 0.36) and reduced sense of accomplishment (r= 0.32). Results then showed that no relationship between learning/enjoyment mastery climate and burnout. According to these findings, a performance parent-initiated motivational climate is a stronger predictor of burnout over a mastery parent-initiated motivational climate. A parent-initiated motivational climate is important to study because parents could potentially play a role in predicting burnout in athletes.

Research has shown that coach, peer and parent motivational climates have relationships with a variety of motivational and stress related predictors of burnout as well as with burnout itself. A coach and peer-initiated mastery motivational climate plays more of a role in determining burnout while a parent-initiated performance climate predict burnout more than a

mastery climate (Lemyre et al., 2008; Smith et al., 2010; Gustafsson et al., 2016). While each one has been examined individually, it is important to understand which social agent has the strongest relationship with burnout because researchers can then develop interventions to help decrease the prevalence of burnout.

Multiple Social Agent's Motivational Climate

Parent, coach and peer motivational climate have been investigated individually in their relation to burnout directly as well as characteristics that are close to burnout. Two social agents, coach and parent and coach and peer, have also been examined in regard to their relationship with characteristics closely related to burnout. From examining 677 Norwegian soccer players, Ommundsen, Roberts, Lemyre, and Miller (2006) found that when coaches create a more mastery climate and parents are not viewed as being overly critical, players are more likely to develop into adaptive, healthy, achievement strivers. Coach and peer-initiated motivational climates have also been examined with their relation to team cohesion and athlete satisfaction. García-Calvo, Leo, Gonzalez-Ponce, Sánchez-Miguel, Mouratidis, and Ntoumanis (2014) found by examining Spanish soccer players that a coach-initiated motivational climate was positively related to cohesion and player satisfaction, while a peer-initiated motivational climate was positively related to cohesion. Although these studies did not examine the relationship of the social agent's motivational climate and burnout specifically, this supports that positive aspects of sport tend to be related to a mastery-initiated climate, while negative aspects tend to be related to a performance-initiated climate.

There is some research that has examined two social agent motivational climates together to determine which one has the stronger relationship with aspects relating to burnout. When comparing the motivational climates of parents and coaches, O'Rourke et al. (2014) studied 238

competitive swimmers (ages 9-14) and the relationship between athletes' late-season perceptions of coach and parent-initiated climates and their self-esteem and self-determined motivation. The results of this study indicate that a parent-initiated motivational climate, either mastery or performance, had a moderate relationship with self-esteem and self-determined motivation (mastery r= 0.45, 0.41and performance r= -0.40, -0.48) while a coach-initiated motivational climate, either mastery or performance, had a small to moderate relationship with self-esteem and self-determined motivation (mastery r= 0.27, 0.26 and performance r= -0.25, -0.30). Parent-initiated motivational climate was seen as a predictor of self-esteem and self-determined motivation at the end of the season more so than a coach-initiated motivational climate. It is important to examine why there would be differences between the two motivational climates because the relationships are different between parent and child and coach and child. Parents interact with their child at home, one-on-one, and with multiple parts of their sport such as travel as well as providing financial and emotional support. Parents also help shape their child's psychological and physical development. A coach-initiated motivational climate is largely connected to only sport; however, a parent-initiated motivational climate can be connected to many aspects of life. While the relationship between parent-initiated motivational climate and self-esteem and self-determined motivation was stronger than a coach-initiated motivational climate, both social agents could potentially have a relationship with burnout.

Smith et al. (2010) concluded that a peer-initiated motivational climate does have a relationship with burnout and Lemyre et al. (2008) concluded that a coach-initiated motivational climate also has a relationship with burnout. It is also important to examine if one has a stronger relationship than the other in order to determine if one motivational climate predicts higher levels of burnout over another. While Ntoumanis et al. (2006) did not look at the relationship between

peer and coach-initiated motivational climate and burnout specifically, the researchers did gather data on the motivational climates in relation to enjoyment, trait anxiety, physical self-worth and effort. The purpose of their study was to examine the importance of peer and coach-initiated motivational climate on affective motivation-related variables (physical self-worth, enjoyment and trait anxiety) and behavioral motivation-related variable of effort (as rated by the coach/PE teacher). The participants of this study were 493 athletes ranging in ages 12-17 years who participated in both team and individual sports. Based on previous research studies, the researchers predicted that a task, or mastery, climate created by peers and coaches would have a positive relationship with physical self-worth, enjoyment and effort, while an ego, or performance, climate would have a positive relationship with trait anxiety. Results concluded that there was a moderate relationship between a peer and coach task-oriented climate and enjoyment (r= 0.39 and 0.31), but little to no relationship with self-worth, effort, and trait anxiety. This study also indicated that a high coach ego-oriented motivational climate was a small predictor in trait anxiety (r= 0.21), which was expected since the coach is the authority figure on the team and their decisions and behaviors are likely to create anxiety within the team. The results from this study indicate that athletes tend to enjoy sport more when their peers create a task-oriented motivational climate, while athletes tend to have higher levels of trait anxiety when coaches create an ego-oriented motivational climate. Since a peer-initiated motivational climate was a stronger predictor of enjoyment than a coach-initiated motivational climate, an argument can be made that it could potentially be a stronger predictor of burnout as well.

There has been research that has looked at two social agents, coach and parent as well as coach and peers. A task peer and coach initiated motivational climate predicted higher levels of enjoyment (Ntoumanis et al., 2006), while a task-initiated climate by parents has a stronger

predictor in meeting the needs of athletes (O'Rourke et al., 2014). As stated, there has been research on the relationship on two social agents' motivational climates, but there is limited research on all three social agents' motivational climates in a single study.

There is not a lot of research discussing the relationship between all three social agents' (parents, peers and coaches) motivational climate and burnout specifically, however there is a study discussing other factors associated with burnout and motivational climate. Atkins et al. (2014) studied the relationship of task-initiated motivational from all three social agents and sport competence, self-esteem, and enjoyment and how they relate to intention to continue participating in sport. In the study, 205 8th grade boys participating in different sports answered questionnaires on peer, parent and coach created task (mastery) motivational climate, goal orientation, sport competence, self-esteem, sport enjoyment and intention to continue participating in sport. The findings in this study were that parent-initiated task motivational climate had the strongest relationship with task goal orientation (R^2= 0.39) than both peer and coach-created task motivational climate (both R^2= 0.30). Sport competence (R^2= 0.61), self-esteem (R^2= 0.31) and enjoyment (R^2= 0.47) all had a positive correlations with task-created motivational climate meaning that an athlete is more likely to have a higher sense of ability through learning and improvement, higher levels of self-esteem and life satisfaction through a task climate and enjoy playing their sport when a task climate is created. Sport competence, self-esteem and enjoyment are all connected to burnout, and what can be taken away from this study is that if an athlete has high competence, self-esteem and enjoyment, they are more likely to return to their sport and not experience feelings of burnout.

Summary

Research has concluded that coach, peer and parent-initiated climates are all connected and related to burnout in some way, directly or indirectly. A coach-initiated motivational climate is going to be positively related to needs satisfaction (Alvarez et al., 2012), increasing self-determined motivation (Kipp & Amorose, 2008) and athlete engagement (Curran et al., 2015), which are positive aspects of sport, while burnout is viewed as a negative aspect. Dropout, which is closely related to burnout, was found to be related to an ego-involving climate (Sarrazin et al., 2002), which indicates that an ego-involving climate could be a strong predictor of burnout. It has also been shown that peer and parent-initiated mastery climates are negatively associated with burnout (Smith et al., 2010; Gustafsson et al., 2016). The comparison of different social agent's motivational climates has also been studied indicating that a parent-initiated climate has a stronger relationship with self-esteem and self-determined motivation than a coach-initiated climate (O'Rourke et al., 2014) and that peer-initiated task climate is a predictor of enjoyment in sport over a coach-initiated task climate (Ntoumanis et al., 2006). When examining all three together, we know that a parent-initiated task climate has a stronger relationship with a task goal orientation which further relates to sport competence, self-esteem, enjoyment and intention to return to sport (Atkins et al., 2014). What has not been supported in much detail is that in high school athletes, which social agent's motivational climate has the strongest relationship with burnout and engagement? This is a significant question to ask because if we know which motivational climate tends to have the strongest relationship with burnout and engagement, then we are able to know how to structure interventions to decrease the symptoms of burnout and increase ways to keep athletes engaged in sport longer.

CHAPTER 3: METHODS

Participants

Participants for this study were 150 student athletes who were currently enrolled in the high school sampled and participated in a winter sport. Male (n = 85) and female (n = 65) athletes were sampled and were between the ages of 14-19 (M = 15.73, SD = 1.255) years of age. The majority of the participants self-identified as Caucasian (58%). Remaining participants self-identified as African American (17.3%), Asian (6.7%), Hispanic (1.3%), Native American (0.7%), more than one race (13.3%), and other (2.7%). Participants were sampled from the following sports: men's basketball (n = 14), women's basketball (n = 26), men's wrestling (n = 25), women's gymnastics (n = 13), men's and women's indoor track and field (n = 43), and men's and women's swimming (n = 29). Out of 270 student athletes, the overall response rate was 56%. However, the principal investigator was unable to get in contact with two winter sport coaches which could contribute to the response rate being low. Excluding the two teams, the response rate increases to 61%. The response rate is based off of the total numbers that were gathered at the beginning of the season, however by the time the surveys were conducted, some players may have dropped out. Table 2 shows the response rate for each team sampled. A similar number of participants indicated being a Freshman (29.3%), Junior (28%), or Sophomore (26%), while few indicated being a Senior (16%), and one participant did not answer. Most participants indicated being a varsity athlete (65.3%). The rest of the participants indicated being a junior varsity athlete (17.3%), a floater meaning they participated on both junior varsity and varsity (11.3%), and nine participants did not indicate their level of play. Participants self-identified their playing time as either a starter (48.7%), nonstarter (36%), or both (2%); however, 20 participants (13%) failed to self-identify. Average involvement of their current sport was 4.56

years (*SD* = 3.3). Average number of practices per week, as indicated by the players, was 5.02 days (*SD* = 0.82). Coaches indicated that their team would practice every day, excluding Sundays, that they did not have a competition or meet, which means some weeks they would practice 5 days while other weeks could be 3 days. On average, coaches indicated that they would practice for 1.86 hours per day. Coaches also indicated that their teams participated in, on average, a total of 11 competitions/meets per season; however, some sports like basketball would have several competitions per week resulting in 22 competitions while swimming and gymnastics may only participate in one per week resulting in 5-6 total competitions during the regular season. When asked if the participant competed in other sports offered by the high school, 52.7% said Yes while 46% said No and two did not answer. Of the multiple sport athletes, 19 participants stated that they compete in multiple high school sports, 16 stated football, and 14 stated soccer while the remaining participants reported a variety of sport types in which they participated. When asked if the participant competed in club sports, 65.3% stated No, while 32.7% stated Yes and three did not answer. Of the athlete playing club sports, 11 stated they played multiple, 9 stated soccer, and 7 stated basketball while the remaining participants reported a variety of different sport types in which they participated.

Table 2

Response Rates per Sampled Teams

Team	Response Rate	Total Athletes on Team	Participating Athletes
Women's Gymnastics (Varsity)	68%	19	13
Men's Basketball (Varsity)	88%	16	14
Women's Basketball (JV and Varsity)	93%	28	26
Men's Wrestling (JV and Varsity)	76%	33	25

Men's and Women's Swimming (Varsity)	56%	52	29
Men's and Women's Indoor Track (Varsity)	42%	102	43

Measures

Participants completed a series of questionnaires assessing burnout, athlete engagement and their perceptions of parent, coach, and peer initiated motivational climate. When completing all questionnaires, athletes were asked to think about their current sport. Athletes also completed a questionnaire on their demographics, including information on age, gender, race, class, current participating sport, playing level (varsity, junior varsity or both), length of current sport experience, playing status and other sport participation in high school as well as at the club level.

Burnout.

Burnout was examined by the Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001; 2008). This questionnaire consisted of 15 items with 5 items per subscale (sport devaluation, reduced sense of accomplishment and physical/emotional exhaustion). Examples of questions include "I am exhausted by the mental and physical demands of my sport" (physical/emotional exhaustion), "I don't care as much about my [sport] performance as I used to" (sport devaluation), and "I am not achieving much in [sport]" (reduced sense of accomplishment). All questions were evaluated on a 5-point Likert Scale ranging from 1 ("almost never") to 5 ("almost always"). Research has provided evidence that this questionnaire is reliable and valid; Cronbach's alpha values for all three subscales emerged emotional/physical exhaustion (α= 0.91), reduced sense of accomplishment (α= 0.85) and sport devaluation (α= 0.90) (Raedeke & Smith, 2001). The model also exhibited a good fit, $\mathcal{X}^2$ (87) =149.7, p<0.01, GFI = 0.91, NNFI= 0.96, CFI=0.97, RMSEA = 0.060 (Raedeke & Smith, 2001). Items "I'm

accomplishing many worthwhile things in [sport]" and "I feel successful at [sport]" were reversed scored. Subscale scores were calculated by averaging each item within the subscale. Overall burnout was calculated by averaging the three subscale scores.

Athlete engagement.

Athlete engagement was measured by the Athlete Engagement Questionnaire (Lonsdale, Hodge, & Jackson, 2007). This questionnaire consisted of 16 items with 4 items per subscale (confidence, dedication, enthusiasm, and vigor). Examples of questions include "I believe I am capable of accomplishing my goals in sport" (confidence), "I am determined to achieve my goals in sport" (dedication), "I feel excited about my sport" (enthusiasm), and "I feel really alive when I participate in my sport" (vigor). All items on the questionnaire were evaluated on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). Research using factor analysis has supported that the engagement questionnaire has four factors including confidence, dedication, vigor and enthusiasm. Four first-order factors (confidence, dedication, vigor, and enthusiasm), exhibited a good fit to the data: scaled $\mathcal{X}^2$ (100, N=382)= 231.61, p<0.01, RMSEA (90% CI) = 0.06 (0.05-0.07), CFI=0.98, TLI=.98 (Lonsdale et al., 2007). Item-factor loadings were strong as were factor loadings on the second-order engagement construct (confidence= 0.76, dedication=0.62, vigor =0.82 and enthusiasm= 0.99; Lonsdale et al., 2007). Correlations between the four factors were moderate to strong (r= .47 to .82) with none of the 95% CIs encompassing unity (Lonsdale et al., 2007). Subscale scores were calculated by averaging each item within the subscale. Overall engagement was calculated by averaging the four subscale scores.

Coach-initiated motivational climate.

Perceived coach motivational climate was examined by the Motivational Climate Scale for Youth Sports (Smith, Cumming, & Smoll, 2008). This questionnaire consisted of 12 items focusing on mastery and performance motivational climates created by coaches. Sample items include "The coach made players feel good when they improved a skill" (mastery-initiating climate) and "The coach spent less time with the players who weren't as good" (performance-initiating climate). All items on the questionnaire were evaluated on a 5-point Likert Scale ranging from 1 (Not at all True) to 5 (Very True). Research has provided evidence that this questionnaire is reliable and valid with Cronbach's alpha values of $\alpha = 0.84$ for mastery items and $\alpha = 0.76$ for performance items (Smith et al., 2008). Athletes were instructed to recall their head coach when completing this questionnaire. Each subscale score was calculated by averaging each item within the subscale. Overall coach mastery score was the same score as the mastery subscale score and overall coach performance score was the same score as the performance subscale score.

Peer-initiated motivational climate.

Perceived peer motivational climate was assessed through the Peer Motivational Climate in Youth Sport Questionnaire (Ntoumanis & Vazou, 2005). This questionnaire assessed the peer-initiated motivational climate in the athlete's current sport and contained 21 items. Mastery motivational climate subscales included improvement (teammates help each other improve), relatedness support (teammates feel valued), and effort (teammate want others to give their best at all times) whereas performance subscales included intra-team competition/ability (players want to "out do" the other) and intra-team conflict (negative comments are said about another teammate). Sample items are included in Table 3. All items were evaluated on a 7-point Likert Scale ranging

from 1 (strongly disagree) to 7 (strongly agree). Research has provided evidence that this questionnaire is reliable and valid. Cronbach's alpha were all acceptable except for intra-team competition which was marginal; improvement (α= 0.77), relatedness support (α= 0.73), effort (α= 0.70), intra-team conflict (α= 0.73), and intra-team competition (α= 0.69); Ntoumanis & Vazou, 2005). Athletes were instructed to recall their teammates on the current sport being played. Subscale scores were calculated by averaging each item within the subscale. Overall peer mastery score was calculated by averaging the three subscales, overall peer performance score was calculated by averaging the two subscale scores.

Table 3

Peer Motivational in Youth Sport Questionnaire

Subscale	**Example**
Mastery Improvement	"Help each other improve"
Mastery Relatedness Support	"Make their teammates feel valued"
Mastery Effort	"Encourage their teammates to try their hardest"
Performance Intra-team competition/ability	"Encourage each other to outplay their teammates"
Performance Intra-team conflict	"Make negative comments that put their teammates down"

Parent-initiated motivational climate.

Perceived parent motivational climate was examined by the Parent-Initiated Motivational Questionnaire-2 (White et al., 1992; White, 1996). This 18-item questionnaire assessed the perceptions of the parent-initiated motivational climate and contained the mastery climate subscale learning and enjoyment and the performance climate subscales worry-conductive and success-without-effort. Examples of some of the items include "Believes enjoyment is very important in developing new skills" (learning and enjoyment), "Makes me worried about failing

because it will appear negative in his/her eyes" (worry-conductive), and "Says it is important for me to win without trying hard" (success-without- effort). All of the items were evaluated on a scale ranging from 1 (strongly disagree) to 4 (strongly agree). Learning and enjoyment had 9 items, worry-conductive had 5 items and success without effort had 4 items. Research has provided evidence that this questionnaire is reliable and valid (White et al., 1992; White, 1996). Factor analysis found support for the three-dimensional structure and internal consistency (α= 0.72 to 0.90; Gustafsson et al., 2016). Athletes were instructed to recall their parent who is most involved in their current sport. Subscale scores were calculated by averaging each item within the subscale. Overall parent performance scores were calculated by averaging the two subscales, while overall parent mastery score was the same as the subscale score.

Procedures

Before approval from the University Internal Review Board (IRB), the student activities coordinator of the high school was contacted via email. Within that email, a brief summary and the importance of the study was highlighted as well as requesting permission to conduct the study in their school setting. Once the student activities coordinator granted approval and IRB approved the study for data collection, head coaches were contacted via email inviting their team to participate. Once coaches agreed to participate, there was coordination of a time and place to administer the questionnaires. Athletes provided assent through a cover letter distributed during the time of administration of questionnaires. They were administered by paper and pencil during the beginning of a normally scheduled practice session. Winter sports started mid-November and questionnaires were administered during the beginning of January. This was close to mid-season given that the sports would be ending around mid to late February. Participants completed the questionnaires individually and coaches were encouraged to leave the room or did something

else during the time the players are completing the questionnaires to avoid added pressure on the athlete's responses. The questionnaire administrator was present to answer any questions the participants had. Participants were told that their responses were confidential and anonymous.

Statistical Analyses

SPSS Version 26 was used to conduct all statistical analyses. Frequencies, mean, mode and standard deviation, were calculated for age, gender, race, class, current participating sport, playing level, length of sport experience, playing status, practices per week, other high school sport participation, and club sport participation. Pearson's correlations were used to analyze relationships between each of the variables. The Cohen (1988) guidelines were used to interpret the magnitude of the correlations. An effect size of .10 was considered small, .30 was considered moderate and .50 was considered large. Significance was determined by *p*-values of less than 0.05. Regression analysis was used to determine the strength of the relationships between each motivational climate with overall burnout and engagement as well as each dimension. Overall burnout, engagement, and performance/mastery scores for each social agent were used to determine the strength of the relationships between the motivational climates and burnout and engagement. A p-value of less than 0.05 was used to determine if the motivational climate created by each social agent was significantly related to burnout and engagement.

CHAPTER 4: RESULTS

Reliability Analysis and Descriptive Statistics

There were 155 student athletes who agreed to complete the questionnaires. However, three questionnaires were left completely blank and two were excluded because the participants did not answer 10 or more items. A total of 150 questionnaires were examined. Those items that were left blank were replaced by the average of the given subscale for that individual. In total there were 99 missing items and of those 51 were Likert items, which were replaced. Thirty-nine missing items were from the demographic questionnaire and nine participants failed to answer the question which parent was most involved in their sport. The missing items were not replaced. Of the participants who missed items, 25 missed only one item. The most an individual participant missed was six items; however, only two participants missed more than one item on the subscale and in those cases they only missed two items. Forty questionnaires were randomly examined data entry accuracy. Only three questionnaires had at least one item incorrectly inputted for 7.5% error rate. An item level error rate, 40 questionnaires multiplied by 96 items to equal 3840 total items examined and 7 divided by total items examined resulted in a less than 1% error rate, indicating that the information recorded is accurate.

The reliability (i.e., internal consistency), as well as the descriptive statistics (means and standard deviations), for each measure is presented in Table 4. The internal consistency, using Cronbach's alpha coefficient, was acceptable ($\alpha > 0.70$) for most measures. However, each of the motivational climate questionnaires had one subscale that had somewhat low reliability. The Success without Effort subscale from the Parent-Initiated Motivational Climate Questionnaire item 3, "Looks satisfied when I win without effort" appeared not to be performing well. With the removal of the item, α increased from 0.65 to 0.69. On the Peer Motivational Climate

questionnaire, the relatedness support scale had low reliability (i.e., $\alpha = .61$). With removal of item 18, “Care about everyone’s opinion”, alpha increased to 0.69. Inspection of alpha coefficients on the coach motivational climate questionnaire revealed the performance climate subscale had an alpha of 0.68. All items were retained on this subscale since reliability was close to conventional guidelines for acceptable internal consistency and all items were performing similarly. Although three subscales had somewhat low reliability, alpha coefficients are close to the traditional guide of 0.70 and thus retained for all analyses.

Mean scores overall indicated that participants perceived all three social agents to have created a mastery climate more so than a performance oriented one. Coaches, parents and peers all created a mastery climate evident by high mean scores on mastery subscales as shown in Table 4. In contrast for both coaches, parents and peers, mean scores for a performance climate were in the low to moderate range. Peers perceived the performance climate differently for intra-team competition and conflict. More specifically, peers perceived moderate scores on intra-team competition but low scores on intra-team conflict.

Inspection of mean scores for burnout and engagement indicate that athletes reported positive sport experiences. Athletes reported moderately low burnout and high engagement. For burnout, devaluation had the lowest mean score (M=1.89) and exhaustion the highest (M = 2.53). In contrast, the overall engagement mean scores were high with dedication being the highest (M= 4.08) and vigor the lowest (M = 3.73).

Table 4

Reliability Analysis and Descriptive Statistics for Burnout, Engagement, and Motivational Climates

	Alpha (α)	*Alpha (α) if replaced*	Mean	Standard Deviation
Burnout				
Overall Burnout	0.85		2.28	0.53
Reduced Accomp. (RA)	0.72		2.43	0.40
Exhaustion (EX)	0.87		2.53	0.89
Devaluation (DEV)	0.84		1.89	0.84
Engagement				
Overall Engagement	0.93		3.92	0.63
Confidence (CON)	0.81		3.86	0.71
Vigor (VIG)	0.81		3.73	0.72
Dedication (DED)	0.86		4.08	0.76
Enthusiasm (EN)	0.89		4.02	0.79
Parent Mot. Climate				
Learning/Enjoy (LE)	0.78		3.35	0.43
Worry Conductive (WC)	0.84		1.92	0.71
Success without Effort (SWE)	0.65	0.69	1.69	0.61
Coach Mot. Climate				

Performance (PERF)	0.68	0.68	2.33	0.74
Mastery (MAS)	0.78		4.37	0.59
Peer Mot. Climate				
Improvement (IMP)	0.85		5.53	1.12
Effort (EFF)	0.75		5.83	0.91
Relatedness Support (RS)	0.61	0.69	5.71	1.11
Intra-team Competition (ICOMP)	0.80		4.29	1.34
Intra-team Conflict (ICON)	0.74		2.74	1.23

Relationships of Motivational Climates Across the Three Social Agents

Overall, athletes perceived that the motivational climate created by coaches and peers shared some similarity. Specifically, for a mastery climate, the correlations between athletes' perception of the climate created by coaches and peers were significant ($p<0.05$ and $p<0.01$) and in the moderate to strong range (i.e., correlations ranged from $r= .30$ to $r= .50$), as shown in Table 5. Similarly, the correlation between an athletes' perception of a performance climate created by the coach and peers was also moderately strong and significant (i.e., $r= .45$).

In contrast, the motivational climate athletes perceived that their parents created tended to have weak associations with that created by coaches and peers. For a mastery climate, although most were significant, the correlations between athletes' perception of climate created by parents with coaches and peers were generally small in magnitude (i.e., $r= .18$ to $r= .25$). While weak in magnitude ($r = .07$), the relationship between parent mastery and the peer mastery subscale relatedness support was not significant. For a performance climate, the association of the climate

created by parents with coaches and peers was small in magnitude and nonsignificant (*r*= .06 to *r*= .14). Overall, the relationships of athletes' perceptions of motivational climates created by coaches and peers tended to be larger in magnitude compared to the motivational climates created by parents. This suggests that there was overlap between the climates created by coaches and peers while the climate created by parents was independent of that created by coaches and peers.

In addition to examining whether the motivational climate created by coaches, parents and peers shared commonality, correlational analyses were used to examine whether an association existed between the mastery and performance climates. For coaches, the mastery climate was largely independent to the extent to which they created a performance climate (r = .15), as shown in Table 5. This means that the coach created mastery climate was not related to the coach created performance climate. Similarly, the extent to which the parent mastery climate was largely unrelated to the extent at which parents emphasize concerns about failure and mistakes (worry conductive (*r*= -.14). However, there was a moderate, negative correlation between parent mastery climate and the extent to which parents believed in success without effort. Specifically, the more parents were mastery- involved, the less they believed in success without effort (i.e., *r*= -.37).

Similar to parents, a peer created mastery and performance climate showed a small to moderate negative associations. Specifically, athletes' perception of a peer mastery climate was independent of their perception of intra-team competition. The more peers were mastery-oriented did not change intra-team competition with the relationships being nonsignificant and in the small range (*r*= -.07 to *r*= .12), as shown in Table 5. However, there were moderate to large, negative correlations between peer mastery climate and the extent to which peers create intra-

team conflict. Specifically, the more athletes' felt their peers were mastery-oriented, the less intra-team conflict they noted (i.e., r= -.39 to r= -.55). Overall the extent to which each social agent was either mastery or performance-oriented was largely unrelated or there was a moderately strong, negative relationship. This means that if a given social agent was mastery-oriented, they tended to be less performance-oriented or they were unrelated to each other.

Table 5

Correlations Between Each Motivational Climate

Variable	LE	WC	SWE	PERF	MAS	IMP	ICOMP	RS	EFF	ICON
Parent Mot. Climate										
Learning/Enjoy (LE)	-									
Worry Conductive (WC)	-.37**	-								
Success w/out Effort (SWE)	-.14	.29**	-							
Coach Mot. Climate										
Performance (PERF)	-.06	.17*	.09	-						
Mastery (MAS)	.22**	-.12	-.16	-.15	-					
Peer Mot. Climate										
Improvement (IMP)	.18*	-.10	-.07	-.05	.41**	-				
Intra-team comp. (ICOMP)	.03	.07	.14	.45**	.13	.12	-			
Relatedness Support (RS)	.07	-.02	-.01	-.15	.30**	.51**	-.07	-		
Effort (EFF)	.25**	-.10	-.12	-.15	.50**	.50**	.00	.52**	-	
Intra-team conflict (ICON)	-.09	.06	.06	.45**	-.19*	-.39**	.44**	-.55**	-.40**	-

* $p < .05$ ** $p < .01$

Purpose 1: Association of Motivational Climate with Burnout and Engagement

Overall, the motivational climate created by parents had weak associations with both burnout and engagement. The correlations of parent motivational climate with burnout and engagement are shown in Table 6. A parent-initiated mastery motivational climate (learning/enjoyment) overall had negative, but small nonsignificant correlations with each burnout dimension (r= -.07 to r= -.11). Although a parent-initiated mastery climate was unrelated to burnout, it was linked to engagement. The relationship between a mastery climate created by parents and each dimension of engagement was positive and significant, but somewhat small in magnitude (r= .21 to r= .27).

The extent to which parents created a performance climate was mostly unrelated to burnout and engagement. The correlations between the perceived performance climate created by parents with each burnout dimension were nonsignificant and small in magnitude (i.e., r= .07 to r= .13). However, the relationship between reduced accomplishment and the extent to which parents emphasize concerns about failures and mistakes was significant (r= .19) but still small in magnitude. Similar to burnout, the correlations created by parents with engagement were generally nonsignificant and small in magnitude (i.e., r= -.03 to r= .08). However, the relationship between the extent to which parents emphasize concerns about failures and mistakes did show a significant negative relationship with dedication. Although significant, the relationship was small in magnitude (r= -.23). These findings suggest that parent motivational climates are weakly related to both burnout and engagement; however, there is a link between a parent-initiated mastery climate and engagement.

Both types of motivational climates created by parents tended to be weakly associated with burnout and engagement, there were different results for the motivational climates created

by coaches. A performance climate created by coaches tended to have similar relationships with burnout and engagement as a parent motivational climate, whereas a mastery climate created by coaches appeared to have larger relationships with both burnout and engagement. The extent to which a coach created a performance climate were largely unrelated to each burnout dimension. These correlations were all less than |*r*= 0.09|. Similar to burnout, the associations with a performance motivational climate created by the coach with the engagement dimensions were generally positive, but nonsignificant and small in magnitude (*r*= .05 to *r*= .16). However, athletes who perceived the coach was performance oriented did perceive higher vigor. Although significant, the association with a coach performance climate and vigor was small in magnitude (*r*= .18).

Although the extent to which athletes' perceived coaches to create a performance climate was unrelated, or only weakly associated with burnout and engagement, the extent to which coaches created a mastery climate was related to both burnout and engagement, as shown in Table 6. Athletes who perceived the coach was mastery oriented perceived less reduced sense of accomplishment as well as less sport devaluation. The associations with reduced accomplishment (*r*= -.44) and devaluation (*r*= -.27) were significant and moderate in magnitude. However, the mastery climate created by coaches was unrelated to the exhaustion dimension of burnout (*r*= .02). Similar to burnout the extent to which coaches created a mastery climate was also related to engagement. Specifically, athletes who perceived the coach was mastery oriented perceived higher engagement. The associations were significant and in the moderate range (*r*= .27 to *r*= .33). A mastery climate created by coaches had stronger associations with engagement and burnout than a performance climate. This suggests that a mastery climate promotes athlete engagement and reduces the likelihood of burnout. In particular, athletes who perceived a

mastery climate were less likely to experience a reduced sense of accomplishment as well as devaluation. In addition to coaches, it is possible that the motivation climate created by peers is associated with the quality of athlete sport experiences.

A perceived peer motivational climate had similar associations with burnout and engagement as that of coaches, as shown in Table 6. Athletes who felt their peers were mastery involved generally perceived lower burnout in regard to reduced accomplishment and devaluation having significant negative correlations in the small to moderate range (i.e., r= -.22 to r= -.38). However, the association between relatedness support and devaluation was found to be nonsignificant and weak in magnitude (r= -.14). Exhaustion was generally unrelated to a peer-initiated mastery climate. The associations were nonsignificant and weak in magnitude (i.e., r= -.06 to r= -.14). A mastery climate has a stronger association with devaluation and reduced accomplishment compared to exhaustion with reduced accomplishment being the larger in magnitude. The associations of perceived peer mastery climate with engagement was also examined. Athletes who perceived their peers to be mastery oriented were overall more engaged in their sport with the correlations being significant and in the small to moderate in magnitude range (r= .18 to r= .37). Mastery climate subscales focused on defining success in terms of improvement and effort. Specifically, the mastery subscale improvement had moderate correlations (r= .29 to r= .37), and effort had moderate with each dimension (r= .28 to r= .36) except with vigor which was small in magnitude (r= .24). Relatedness support had small correlations with each dimension (r= .18 to r= .22) except with confidence which was moderate in magnitude (r= .35).

The associations of a perceived peer performance climate with burnout and engagement were generally weak and at times unrelated. The peer performance subscale intra-team

competition had small, negative relationships in magnitude with each dimension of burnout except with exhaustion, which was positive and small. Athletes who perceived a performance climate created by peers, specifically one focused on intra-team competition, reported lower levels of reduced accomplishment and devaluation but higher levels of exhaustion. All relationships between intra-team competition and burnout were nonsignificant except with reduced accomplishment (r= -.19). The other peer performance subscale, intra-team conflict was unrelated to burnout evident by nonsignificant relationships with each burnout dimension (r= .01 to r= .11). This suggests that athletes who perceived their peers to create a climate focusing on intra-conflict is associated with little to no levels of burnout. The correlations between intra-team competition with the engagement dimensions confidence and vigor were significant and small in magnitude (r= .19). However, the correlations between intra-team competition with dedication and enthusiasm were nonsignificant but also small in magnitude (r= .08 to r= .13). This suggests that intra-team competition was weakly related to confidence and vigor and unrelated to dedication and enthusiasm. Intra-team conflict had nonsignificant relationships with athlete engagement (r= -.10 to .00). These results indicate that intra-team conflict plays little to no role in an athlete's engagement. Athletes who perceived their peers created a mastery climate reported higher engagement.

Overall, athletes' perception of mastery climate created by coaches and peers tended to have stronger associations with burnout compared to a mastery climate created by parents, however all three mastery climates had strong associations with engagement. A coach perceived mastery climate had the strongest association with reduced accomplishment (r= -.44) suggesting that this type of climate is related to lower levels of burnout. In addition, all three social agent's mastery climates had little to no association with exhaustion. This suggests that a mastery or

performance climate has no linkage to exhaustion. All three social agent's mastery climate had significant relationships with engagement indicating that a mastery climate potentially may promote positive sport experiences and athletes staying in sport. More specifically, a mastery climate created by peers had the strongest associations compared to coach and parent created mastery climates with engagement (r= .18 to .37). The relationships between the peer mastery climate and engagement were also all significant indicating that peers could help create positive sport experiences with high engagement and low burnout.

Table 6

Correlations of Motivational Climates with Burnout and Engagement

Variable	RA	EX	DEV	CON	VIG	DED	EN
Parent Mastery Climate							
Learning/Enjoy (LE)	-.10	-.07	-.11	.21**	.22**	.27**	.26**
Parent Performance Climate							
Worry Conductive (WC)	.19*	.13	.13	-.14	-.11	-.23**	-.15
Success w/out Effort (SWE)	.10	.07	.08	.08	-.10	-.03	-.03
Coach Mot. Climate							
Performance (PERF)	.09	-.08	-.06	.05	.18*	.08	.16
Mastery (MAS)	-.44**	.02	-.27**	.30**	.27**	.33**	.32**
Peer Mastery Climate							
Improvement (IMP)	-.38**	-.09	-.27**	.29**	.36**	.37**	.33**
Effort (EFF)	-.24**	-.06	-.23**	.29**	.24**	.36**	.28**

Relatedness Support (RS)	-.22**	-.14	-.14	.35**	.22**	.18*	.21*
Peer Performance Climate							
Intra-team comp. (ICOMP)	-.19*	.10	-.13	.19*	.19*	.13	.08
Intra-team conflict (ICON)	.11	.03	.01	-.10	.00	-.09	-.01

* $p < .05$ ** $p < .01$

Purpose 2: Evaluating Whether Parent, Peer, or Coach Initiated Motivational Climate had the Strongest Association with Burnout and Engagement

Overall burnout, engagement, and motivational climate scores were used in a series of regression analyses to evaluate whether parents, peers, or coaches had the strongest relationship with burnout or engagement. Overall scores were used as a way of determining the relationships between motivational climate and burnout and engagement as a whole and not the individual subscales. Mastery and performance climate subscales differed across parents and peers. Therefore, to make the motivational climates created by each social agent more directly comparable, total mastery and total performance scores were used in the regression analyses. The independent measures were overall mastery and performance motivational climate scores for each social agent and the dependent measures were overall burnout and engagement as well as each individual subscale score. . For overall burnout, the motivational climate subscales collectively predicted 13.3% of the variance, which is moderate in magnitude. As shown in Table 7, the only significant predictor was the peer mastery motivational climate ($\beta = -.25$) with a partial correlation of -.21. This indicates that after controlling for the association of the other motivational climate subscales, a peer mastery climate had a significant, but small negative

association with overall burnout. Although not significant (p = .06) and low in magnitude, athletes' perception of a parent-initiated performance climate was also associated with higher burnout (β = .16, partial r = .16).

Table 7

Regression Analysis for Overall Burnout

	Standardized Beta	t	Sig.	Zero-Order correlations	Partial Correlations
Overall Burnout (Independent Variable)					
Overall Parent Mas.	.002	.03	.98	-.12	.002
Overall Parent Perf.	.16	1.93	.06	.18	.16
Overall Coach Mas.	-.11	-1.17	.24	-.24	-.10
Overall Coach Perf.	-.11	-1.14	.26	-.05	-.10
Overall Peer Mas.	-.25	-2.59	.01	-.29	-.21
Overall Peer Perf.	-.05	-.46	.65	-.00	-.04

In examining each individual burnout subscale, motivational climate had the strongest association with a reduced sense of accomplishment and explained 25.6% of the variance. As shown in Table 8, the coach mastery climate was a significant predictor with the highest beta weight (β= -.30) compared to the other motivational climates. Inspection of the partial correlation indicates that the coach mastery climate had moderately strong relationship (r= -.28) with reduced sense of accomplishment after controlling for parent and peer motivational climate

associations. The partial correlation was lower than the zero-order correlation (r= -.44) which suggests that the variance explained by the coach climate overlapped with that created by peers and parents. In addition to the coach mastery climate, both peer mastery and peer performance motivational climates were also significant predictors (β= -.25 and -.20) of reduced accomplishment with small partial correlations of -.21 and -.18. This means that after controlling for the association of other motivational climate subscales that a peer mastery and performance climate had significant, but small negative associations with reduced sense of accomplishment. Both a peer mastery and performance climate were found to be associated with less reduced sense of accomplishment, while it was hypothesized that only a peer mastery climate have a negative association. Although not significant (p = .08), a parent-initiated performance climate was linked to a reduced sense of accomplishment, albeit a weak relationship (partial r= .15). Overall this indicates that athletes who felt their coaches created a mastery climate had lower reduced sense of accomplishment. Athletes who also felt that their peers created a mastery or performance climate had lower sense of accomplishment as well.

Table 8

Regression Analysis for Reduced Accomplishment

	Standardized Beta	t	Sig.	Zero-Order correlations	Partial Correlations
Red. Accomplishment (Independent Variable)					
Overall Parent Mas.	.07	.95	.34	-.09	.08

Overall Parent Perf.	.14	1.79	.08	.18	.15
Overall Coach Mas.	-.30	-3.51	.00	-.44	-.28
Overall Coach Perf.	.10	1.13	.26	.09	.09
Overall Peer Mas	-.25	-2.59	.01	-.29	-.21
Overall Peer Perf.	-.20	-2.24	.03	-.06	-.18

The associations between the motivational climates and sport devaluation was also examined. The motivational climate created by coaches, parents and peers explained 12.5% of the variance, which is moderate in magnitude. The only significant predictor, as shown in Table 9, was the peer mastery climate (β= -.21) with a small partial correlation of -.18. This indicates that after controlling for the association of the other motivational climate subscales that a peer mastery climate had a significant, but small negative association with devaluation. Although not significant (p= .09) and small in magnitude (partial r= -.14), a coach mastery climate was associated with devaluation. Athletes who perceived their coaches created a mastery climate reported low levels of sport devaluation. Overall, athletes who perceived that the team climate to be mastery involved through peers, and secondarily by coaches, experienced lower sport devaluation.

Table 9

Regression Analysis for Devaluation

	Standardized Beta	t	Sig.	Zero-Order correlations	Partial Correlations
Devaluation (Independent Variable)					
Overall Parent Mas.	-.01	-.10	.92	-.11	-.01
Overall Parent Perf.	.10	1.18	.24	.13	.10
Overall Coach Mas.	-.16	-1.73	.09	-.27	-.14
Overall Coach Perf.	-.07	-.74	.46	-.06	-.06
Overall Peer Mas.	-.21	-2.18	.03	-.26	-.18
Overall Peer Perf.	-.11	-1.16	.25	-.07	-.10

Evaluation of associations between the motivational climates and exhaustion was also conducted. Of the burnout dimensions, exhaustion had the weakest associations with the motivational climates, only explaining 6% of the variance. As shown in Table 10, none of the motivational climates were significant predictors of exhaustion. This indicates that none of the motivational climates had any independent association with exhaustion.

Table 10

Regression Analysis for Exhaustion

	Standardized Beta	t	Sig.	Zero-Order correlations	Partial Correlations
Exhaustion (Independent Variable)					
Overall Parent Mas.	-.02	-.23	.82	-.07	-.02
Overall Parent Perf.	.14	1.54	.13	.13	.13
Overall Coach Mas.	.09	.95	.35	.02	.08
Overall Coach Perf.	-.17	-1.74	.09	-.08	-.14
Overall Peer Mas.	-.14	-1.38	.17	-.12	-.11
Overall Peer Perf.	.12	1.16	.25	.08	.10

Overall a peer mastery climate was the strongest predictor of total burnout and devaluation, while a coach mastery climate was the strongest predictor of reduced sense of accomplishment. This indicates that a mastery climate created by coaches and peers could be associated with lower levels of burnout in athletes. Engagement had stronger associations compared to burnout with the motivational climates with a peer mastery climate being a significant predictor for each engagement dimension.

Compared to burnout, the motivational climate was more strongly associated with engagement. For overall engagement, the motivational climate subscales predicted 29.3% of the variance, which is considered large in magnitude. For overall engagement, peers, parents, and

coaches all played a role. As shown in Table 11, perceived peer mastery climate had the highest beta weight (β= .35) with a moderate partial correlation of .32. Both coach motivational climates, performance and mastery, were significant predictors (β= .18 and .17) with small partial correlations of .18 and .17. Athletes who perceived their coaches to create either a mastery or a performance climate reported higher engagement. This was not expected as a perceived performance climate tends to be associated with negative sport experiences. Perceived parent mastery climate was the final significant predictor (β= .17) with a partial correlation of .18. This means that after controlling for the associations with other motivational climates, a mastery climate created by all three social agents was linked to athlete engagement. In addition, a coach performance climate was also reported to have high levels of engagement. Of these, a peer mastery climate was the strongest predictor with the partial correlation being in the moderate range. While a coach mastery climate was also predictive, its partial correlation (r = .17) was lower than raw order (r = .36) suggesting that its association with engagement overlapped with peer and parent motivational climates.

Table 11

Regression Analysis for Overall Engagement

	Standardized Beta	t	Sig.	Zero-Order correlations	Partial Correlations
Overall Engagement (Independent Variable)					
Overall Parent Mas.	.17	2.24	.03	.28	.18

Overall Parent Perf.	-.06	-.79	.43	-.14	-.07
Overall Coach Mas.	.17	2.02	.05	.36	.17
Overall Coach Perf.	.18	2.16	.03	.14	.18
Overall Peer Mas.	.35	4.03	.00	.42	.32
Overall Peer Perf.	.09	1.04	.30	.07	.09

For individual engagement dimensions, motivational climate created by coaches, peers, and parents had strong relationships with the dimensions and explained 20-23% of the variance. Specifically, for confidence the motivational climate subscales predicted 20.4% of the variance, which is considered to be a moderate to large association. As shown in Table 12, the only significant predictor of confidence was peer mastery climate (β= .35) with a moderate partial correlation of .30. This means compared to other motivational climate subscales, peer mastery climate had a significant, moderate positive association with confidence.

Table 12

Regression Analysis for Confidence

	Standardized Beta	t	Sig.	Zero-Order correlations	Partial Correlations
Confidence (Independent Variable)					

Overall Parent Mas.	.13	1.66	.10	.21	.14
Overall Parent Perf.	.02	.29	.77	-.05	.02
Overall Coach Mas.	.11	1.28	.20	.30	.11
Overall Coach Perf.	.05	.53	.59	.05	.05
Overall Peer Mas.	.35	3.81	.00	.38	.30
Overall Peer Perf.	.14	1.50	.14	.06	.12

For vigor, the motivational climate subscales predicted 22.8% of the variance being moderate to larger in magnitude. Similar to confidence, a peer mastery climate was a significant predictor (β= .33) of vigor with a moderate partial correlation of .29, as shown in Table 13. Athletes who perceived their peers created a mastery climate reported higher vigor. However, a coach performance climate was also a significant predictor (β= .20) with a small partial correlation of .19. Similarly, to a peer mastery climate, athletes who perceived their coach created a performance climate reported higher vigor. This indicates that compared to the other associations with the motivational climate subscales, a peer mastery had significant moderate, positive associations while a coach performance had significant small, positive associations with vigor.

Table 13

Regression Analysis for Vigor

	Standardized Beta	t	Sig.	Zero-Order correlations	Partial Correlations

Vigor (Independent Variable)					
Overall Parent Mas.	.11	1.44	.15	.22	.12
Overall Parent Perf.	-.09	-1.17	.25	-.13	-.10
Overall Coach Mas.	.10	1.14	.26	.27	.10
Overall Coach Perf.	.20	2.27	.03	.18	.19
Overall Peer Mas.	.33	3.66	.00	.35	.29
Overall Peer Perf.	.12	1.31	.19	.12	.11

Motivational climate subscales explained 22.6% of the variance for dedication, which is considered to be moderate to large in magnitude. A peer and parent mastery climate were found to be significant predictors for this engagement dimension, as shown in Table 14. A peer mastery climate was the stronger predictor (β= .28) with a moderate partial correlation of .25. A parent mastery climate was still a predictor (β= .16) with a small relationship as well (partial *r*= .17). Athletes who perceived their parents and parents created a mastery climate reported higher dedication. Although not significant (*p*= .07) and small in magnitude (partial *r*= .15), a coach mastery climate was associated with dedication.

Table 14

Regression Analysis for Dedication

	Standardized Beta	t	Sig.	Zero-Order correlations	Partial Correlations

Dedication (Independent Variable)					
Overall Parent Mas.	.16	2.04	.04	.27	.17
Overall Parent Perf.	-.09	-1.14	.26	-.17	-.10
Overall Coach Mas.	.16	1.84	.07	.33	.15
Overall Coach Perf.	.13	1.48	.14	.08	.12
Overall Peer Mas.	.28	3.11	.00	.36	.25
Overall Peer Perf.	.06	.67	.51	.03	.06

For enthusiasm, the motivational climate subscales explained 22.6% of the variance being moderate to large in magnitude. Enthusiasm, had the most significant predictors compared to the other engagement dimensions with coaches, peers, and parents playing a role. As shown in Table 15, the strongest predictor was a perceived coach performance climate (β= .24) with a small partial correlation of .22, followed by a perceived peer mastery climate (β= .23) with a small partial correlation of .21. A coach and parent mastery climate were also found to be significant predictors (β= .20 and .17) with small partial correlations of .18 and .17. This indicates that athletes who perceived either a peer created mastery climate, a parent created mastery climate, or a coach created performance or mastery climate reported higher enthusiasm.

Table 15

Regression Analysis for Enthusiasm

	Standardized Beta	t	Sig.	Zero-Order correlations	Partial Correlations
Enthusiasm (Independent Variable)					
Overall Parent Mas.	.17	2.11	.04	.26	.17
Overall Parent Perf.	-.04	-.56	.58	-.12	-.05
Overall Coach Mas.	.20	2.24	.02	.32	.18
Overall Coach Perf.	.24	2.66	.01	.16	.22
Overall Peer Mas.	.23	2.58	.01	.33	.21
Overall Peer Perf.	-.00	-.01	1.00	.04	-.00

Overall, motivational climates created by parents, coaches and peers were more strongly related to engagement than burnout. Specifically, mastery climates created by all three social agents were predictors of overall engagement and had significant moderate relationships with each dimension. On the other hand, performance climates tended to have little to no relationship with burnout or engagement. In fact, a coach performance climate had negative associations with exhaustion and devaluation. The peer performance subscale intra-team competition also had negative associations with reduced accomplishment and devaluation. These findings suggest that a mastery climate reflects more of a positive sport experience, while a performance climate tends to have little to no relationship with athlete sport experiences.

CHAPTER 5: DISCUSSION

Key Findings Related to Study Purposes and Hypotheses

Past research has found that social agent's including coaches, parents and peers impact the quality of athlete sport experiences (e.g., Atkins et al., 2014; Chan et al., 2012; Curran et al., 2015; Lemyre et al., 2008; Smith et al., 2010). Past research has been mixed in terms of which social agent has the strongest association with athletes' sport experiences. Some studies have found that it is parents (Atkins et al., 2014), while other research suggests that it is peers, along with coaches (Chan et al., 2012). It is plausible that at the high school level that both peers and coaches may have a stronger role in predicting athlete sport experiences compared to parents because adolescents may be more influenced by their friends and coaches and less influenced by their parents. Minimal research has examined the motivational climates created by parents, coaches, and peers in a single study in effort to evaluate which has the strongest association with the quality of high school athletes sport experiences. Therefore, the first purpose of this study was to examine the association of motivational climates created by coaches, parents and peers with burnout and engagement. The second purpose of this study was to evaluate whether a coach, parent, or peer initiated motivational climate had the strongest association with burnout and engagement. The first hypothesis was that a mastery climate would be positively related to engagement and negatively related to burnout, while a performance climate would be negatively related to engagement and positively related to burnout. The second hypothesis was that a peer and coach motivational climate would be a stronger predictor of burnout and engagement compared to the motivational climate created by parents.

Overall, results indicated that all three social agents played a role in the quality of athlete sport experiences evident by engagement and burnout. However, the motivational climates

created by the social agents had stronger associations with athlete engagement compared to burnout perceptions. Across all three social agents, a mastery climate was more strongly related to engagement than a performance climate. Mastery climates created by coaches, parents and peers predicted all four engagement subscales. For burnout, a mastery motivational climate was related to lower reduced accomplishment and devaluation but not exhaustion. Compared to a mastery climate, the association between a performance climate with burnout and engagement was weaker in magnitude across the three social agents. Although the relationships were small in magnitude, athletes who perceived their peers and coaches created a performance climate reported lower burnout and higher engagement.

Of the three social agents, coaches and peers had the strongest associations with burnout and engagement, whereas parents had a weaker relationship. Although the motivational climate created by parents was not linked to burnout, athletes reported higher engagement if they perceived that their parents created a mastery climate. However, the mastery climates created by coaches and peers was more strongly associated with burnout and engagement compared to parents. When coaches and peers created mastery climates where the focus is on learning and improvement, athletes perceived higher engagement and lower burnout. When comparing the motivational climate created by parents, coaches and peers, athletes perceived peers and coaches to be more predictive of engagement and burnout compared to parents.

When evaluating hypothesis one, mastery climates created by coaches and peers were found to have positive relationships with engagement and negative relationships with burnout, while a parent mastery climate was found to be unrelated to burnout but did predict engagement. However, there was one association that contradicted the hypothesis. Contrary to predictions, not every performance climate was found to have a positive relationship with burnout and negative

relationship with engagement. Although small in magnitude, a coach performance climate was found to be related to lower exhaustion and devaluation. The peer performance subscale intra-team competition was related to lower burnout and higher engagement and intra-team conflict was also related to higher vigor. Hypothesis 1 was supported in that mastery climates were found to have positive associations with engagement and negative associations with burnout. However, in contrast to predictions, performance climates created by coaches and peers were either unrelated or negatively associated with burnout and positively with engagement.

In regard to the second hypothesis, the mastery motivational climates created by all three social agents were predictors of engagement, but not all were predictors of burnout. Both coaches and peers predicted burnout, but peers were stronger predictor of engagement. Therefore, hypothesis 2 was fully supported since a peer and coach-initiated motivational climates were the strongest predictors of burnout and engagement.

Comparison to Past Research and Theoretical Implications

Similar to the current study, past research (Brieger, Cumming, Smith, & Smoll, 2015; Cumming, Smoll, Smith, & Grossbard, 2007; Curran et al., 2015; Leo, Sánchez, Sánchez, Amado, & Calvo, 2009; Sánchez-Miguel, Leo, Sánchez-Olivia, Amado, & García, 2013) has also shown that mastery climates are more predictive of quality of athlete sport experiences than performance climates. More specifically, these studies found that when athletes perceived a mastery climate, they are more engaged, have higher enjoyment and sport commitment, and have a higher intention to return to the sport. Whereas, the performance climates were unrelated to the quality of athlete sport experiences. Also similar to the current study, previous studies have found that a mastery climate may be more predictive of positive aspects of sport (e.g., basic psychological needs) than negative aspects (e.g., somatic anxiety and amotivation; Ahmadi et al.,

2012; Hogue et al., 2013; Parish & Treasure, 2003). Overall, this study, like previous research, has found that a mastery climate is more predictive of positive sport experiences than negative experiences.

Previous research has been mixed in terms of which social agent is the most influential of sport experiences. Chan et al. (2012) noted that it was peers for older athletes and parents for younger athletes, while coaches had influence on both younger and older athletes. Another study also found that parents may be more influential of sport experiences in younger athletes compared to coaches and peers. Atkins et al. (2014) examined mastery climates of parents, coaches and peers and found that parents had stronger relationships with positive sport experiences in younger children compared to coaches and peers. The current study examined high school aged athletes and it found that peers and coaches were influential of sport experiences which is consistent with past research (Chan et al., 2012; Ntoumanis et al., 2006).

Findings from the current study were that overall performance climates were either small in magnitude or unrelated to burnout and engagement, which is similar to past studies that have found that a performance climate is unrelated to the quality of athlete sport experiences (Lemyre et al., 2008; Curran et al., 2015). This might be because researchers need to consider the team's win/loss record or how the team is performing when examining whether a performance climate has a positive or negative influence on an athlete's sport experience. Conceptually based on the Achievement Motivation Theory, a performance climate is not necessarily detrimental in times of success. However, a performance climate creates vulnerability in times of adversity (Dweck, 2008; Duda & Treasure, 2015). This suggests that one of the reasons why a performance climate by itself might not be related to burnout and engagement is because it needs to be evaluated in light of how a team is performing. Unexpectantly, it was found that a performance climate was

actually in some cases linked to lower burnout and higher engagement. Although contrary to predictions, the correlations were weak in magnitude. Even though the relationships were weak in magnitude, the impact of a performance climate might be dependent on how a team and individual athletes were performing at the time completing the questionnaires. In a mastery climate, athletes define success on improvement as self-referenced standards of excellence where the focus is on giving maximal effort, learning, and mistakes are viewed as a natural part of the learning process. These athletes could still feel successful even if their team is not consistently winning or they are not performing well compared to others, but they played to the best of their ability. In contrast, athletes in a performance climate base success on norm-referenced standards and how they compare to others. In a performance climate, athletes feel successful when they outperform other individuals or when their team outperforms another team. When performance-oriented athletes feel that they are not outperforming others or have a bad win-loss record, athletes may not feel successful. This could result in higher burnout and lower engagement. If the team was performing successfully, winning, and individual athletes felt that they were doing well compared to others, then a performance climate may not have had a negative impact. For a performance climate, researchers need to examine how an individual athlete as well as how teams are performing compared to others to determine the impact of the performance climate on the athlete sport experiences.

Results from this study in combination with past research (Smith et al., 2010) has shown that intra-team competition is either negatively related to burnout or unrelated. Compared to intra-team competition, research has been consistent in finding that intra-team conflict is either unrelated or positively related to burnout (Smith et al., 2010). These findings suggest that not all intra-team competition is negative. In a mastery climate, intra-team competition can be viewed

as pushing each other to be better so the team can achieve excellence. On the other hand, in a performance climate intra-team competition can create rivalries amongst teammates as the players are focused on outperforming each other. Since the athletes in the current study perceived high mastery climates, intra-team competition could have been viewed in positive terms linking to higher engagement and lower burnout.

The team motivational climate can potentially impact athlete attitudes toward sport, which may explain the stronger associations of motivational climate with reduced sense of accomplishment and sport devaluation compared to exhaustion. Across studies motivational climate is more predictive of reduced accomplishment and devaluation compared to exhaustion (Gustafsson et al., 2016; Lemyre et al., 2008; & Smith et al., 2010). Reduced accomplishment and devaluation reflect athlete attitudes towards their sport experiences. It is possible that parents and peers play a larger role in reduced accomplishment, devaluation, and engagement than they do for exhaustion. Exhaustion could be more impacted by the actual training volumes than the motivational climates created by coaches, parents and peers. The motivational climate might have a stronger impact on athlete attitudes which would be reflective of reduced accomplishment and devaluation.

Future Directions

In future studies, rather than just examining motivational climate, researchers should also examine athlete's perceptions of success and how they feel the team is performing. Team performance could be evaluated by the win-loss record. How the team is playing could interact with the performance motivational climate to determine its association with burnout and engagement. It could be that if the team is performing well, then engagement could be higher and burnout lower compared to if the team is not performing well where engagement could be lower

and burnout higher. If researchers have an understanding of when an athlete feels successful, then they could explain the impact of a performance climate in relation to burnout and engagement.

Another future direction would be to examine athletes across time. Sampling across time from a single sport league would help determine if social agents really do have an impact on athlete sport experiences. Past research (DeFrancisco et al., 2016) did find through longitudinal designs burnout to be a mediator in the relationship between depression and stress, as while as being an antecedent of depression. This suggests that burnout perceptions can change across time. It is important to examine this because it is necessary to see if influence from different social agents truly changes across time. For example, future researchers could sample from a given soccer league and take participants from the time an athlete begins sport (ages 3-5) to the end of high school years to see the importance of social agents across that time. This would enable adopting a developmental perspective to see how athletes change from different stages in life. Researchers may be able to view a cutoff point as to when athletes are influenced more by one social agent than other if athletes are sampled across time.

It seems plausible that athletes who have higher engagement and lower burnout will stay in sport longer, however research has not examined that issue. Therefore, another future direction would be to see if higher engagement and lower burnout predicts athletes staying in their sport longer. If researchers are able to determine of sport continuation, then coaches, parents and administrators can be educated on strategies to help keep athletes in sport.

Overall the current study showed that motivational climate created by coaches and peers were correlated. Future studies may want to examine if the coach climate impacts the peer climate. It could be that coaches not only directly impact burnout and engagement, but coaches

could also indirectly impact these experiences within the team culture. The coach can either create a team culture that is mastery or performance oriented. A mastery-oriented culture may focus on learning and improvement, while a performance-oriented team culture may focus on winning and outperforming others. One-way that the team culture can be impacted is by who the coach determines is on the team. Individual personalities could cause issues in creating a team culture, thus indirectly impacting the peer motivational climate. Future studies may want to investigate whether coaches also have a direct impact on burnout and engagement by an indirect association through their impact on a peer created motivational climate.

Researchers could also examine whether playing multiple sports within the same season increases or decreases the strength in the associations between engagement and burnout with motivational climates. If an athlete is playing multiple sports, then they may feel more tired and less engaged in the current sport being evaluated due to the stresses that the other sport being played puts on the athlete. Playing multiple sports could have an impact on if an athlete experience high or low levels of burnout and engagement because they have stresses from other sports that could impact their sport experiences. Multiple sport athletes, since they experience different motivational climates from the other sports, that may affect their reactions to their current sport climate. If athletes with other sport experiences have grown to value a mastery or a performance climate and that climate is different from their current sport, then that might result in lower engagement and higher burnout.

Past research (Curran et al., 2015; Gustafsson et al., 2016; Lemyre et al., 2008; & Smith et al., 2010) has only examined the individual relationships between motivational climate and the quality of athlete sport experiences. However, future research may need to examine how the mastery and performance climate collectively impact the quality of athlete sport experiences. For

example, a performance climate is not necessarily negative if the mastery climate is also considered high at the same time. The performance climate could have negative impacts if the mastery climate was found to be low. Similarly, researchers also need to evaluate the compatibility between whether the motivational climates created by coaches, parents and peers are providing similar messages to athletes or whether the climates are creating conflicting messages as to what is important.

Since it is known that peers play an influential role in athletes staying engaged with their sport and reporting low levels of burnout, focus groups and guided interviewing could be used to determine what exactly peers do to impact burnout and engagement. If coaches and sport administrators know exactly what peers do to keep athletes engaged, then they can implement those strategies within their own teams. Positive experiences, such as engagement, help the number of athletes burning out or dropping out low.

Athletes from the current study were sampled in the middle of the season. This was done because it was thought that the beginning of the season would be one that is full of excitement and the motivational climates may not be as impactful yet, while at the end of the season it is thought that athletes are more tired due to the training loads and stresses of the season. It is possible that the motivational climate could shift across a season. Coaches could be more mastery towards the beginning/middle of the season; however, it is then possible as they get into more conference play and closer to tournaments that the climate could switch to be more performance oriented.

Another future research idea is to further examine whether more individualized sports (i.e., gymnastics, wrestling and swimming) result in peers and coaches still being significant predictors of burnout and engagement. When past research (Kipp & Amorose, 2008; &

Gustafsson et al., 2016) has sampled from a variety of sports to examine the relationships between motivational climate and the quality of athlete sport experiences, the relationships are often not discussed on a team by team basis but as athletes as a whole. Therefore, this would be an interesting finding because then researchers would know if a more team sport relies more on peers and coaches than a more individualized sport.

Another demographic that could play a role on the relationships between motivational climate and quality of athlete sport experiences is gender. Past research (Brieger et al., 2015) has found that females were more adversely affected by a performance climate compared to males. The current study did not examine gender differences in relation to motivational climate and athlete sport experiences, but the findings from Brieger et al. (2015) suggest that future research may want to further examine these differences.

Practical Implications

Athletes who perceived coaches to have created a mastery climate reported higher engagement and lower burnout. This suggest that creating a mastery climate may help prevent burnout and promote engagement. One way that coaches can create a mastery climate is by emphasizing effort, learning, and that mistakes are part of the learning process. Other researchers have developed the TARGET method; Task structure, Authority structure, Reward structure, Group structure, Evaluation structure and Time structure. Coaches can create practice activities that emphasize self-improvement and learning that are also challenging (Task) while also recognizing an athlete's learning, effort and improvement ahead of winning (Reward). They can also create opportunities for independence, responsibility and self-direction by creating an autonomy supportive environment (Authority). Coaches can also use variety in grouping their athletes (Group) and adjust time allotments to ensure that every athlete can learn the skill in as

much time as they need (Time). Lastly, coaches can ensure that evaluation is based on a concrete performance criterion, including individual skill development, progress, improvement and mastery (Evaluation) (Burton & Raedeke, 2008).

In addition, a peer mastery climate was also linked to higher engagement and lower burnout. One-way coaches could potentially shape the peer climate and team culture is by creating a mastery climate themselves. In the current study, both mastery climates created by coaches and peers when examined individually were both associated with higher engagement and lower burnout. However, when coaches, peers and parents were all examined collectively, both coach and peer-initiated mastery climates were linked to burnout. Peers however, had a stronger association with engagement compared to coaches. This suggests that perhaps the motivational climate created by coaches indirectly impacted engagement through its influences on the peer motivational climate which then had the direct impact on engagement. If coaches create a mastery climate themselves, then the team culture and peer initiated motivational climate may be more likely to be mastery focused.

Lastly, while the current study found that a parent-initiated performance and mastery climates had little to no relationship with burnout, a parent created mastery climate did have significant relationships with engagement. This suggests that parents do play a role in keeping an athlete engaged with their sport. A parent's role starts to diminish in the eyes of an adolescent athlete; however, they still play a role in the athlete's feelings of engagement. If peers, coaches and parents all create an environment that promotes learning and improvement, then specifically for high school athletes, there should be a decrease in athlete burnout while an increase in athlete engagement.

While a mastery climate focuses on learning and improvement and a performance climate focuses on outperforming others, a performance climate does not necessarily need to be avoided. A high mastery climate coupled with high performance tends to lead to high enjoyment, high motivation and athletes are most likely to reach their full potential (Duda & Treasure, 2015). However, if a high performance climate is coupled with a low mastery climate, then there tends to be high anxiety and low enjoyment (Duda & Treasure, 2015). A performance climate does not necessarily need to be avoided; however, it should be coupled with a high mastery climate to keep athletes engaged and not experiencing burnout.

Limitations/Delimitations

This study does not go without limitations. One limitation was that data was only gathered during one practice time during one given week. This means that if an athlete was absent from that given day of data collection, then their input was not collected. Out of 270 winter sport athletes, the current study's response rate was 56%. However, the principal investigator was unable to get in contact with two winter sport coaches which contributed to the response rate being low. Excluding the two teams, the response rate increases to 61%. The response rate is based off of the total numbers that were gathered at the beginning of the season; however, by the time the surveys were conducted, some players may have dropped out. The low response rate could also be attributed to how one team had over 100 athletes on the team and only 43 athletes participated in the study. Participants on the indoor track team may not be required to come to practice every day and it is known that the long-distance runners practice off school property. Older athletes who participate in long distance running may not have stuck around after school and already left for the off-practice site.

Since data was collected during the same week, collection of the girls' basketball team was interrupted for picture day. This could have resulted in athletes not taking the questionnaire seriously or to miss a few questions due to the interruption. Another limitation was that the questionnaire was long. This may have been too many questions for athletes to complete right before practice time. Some athletes voiced their frustration at the length of the questionnaire, which may have caused them to rush through it and not think about their answers. The questionnaires were also answered in a group setting, which could have also resulted in some distractions. Due to the nature of the questionnaire, we were unable to measure the responses of those athletes who have already experienced burnout. The levels of burnout could be higher in this given high school because those athletes who have already experienced feelings of exhaustion, reduced accomplishment and sport devaluation were not included in the sample. Athletes who have already experienced burnout would not have been included in the sample because they would have already stopped playing the sport.

Lastly, most of the athletes sampled indicated being a freshman or sophomore. This aims to be a limitation because it could be these athletes were excited to play for the high school team or it may be there first season playing the sport, therefore, could have reported higher engagement and lower burnout. Feelings of excitement could have driven their responses on engagement and since it may be their first season, they have not yet experienced feelings of burnout. Questionnaires were administered towards the middle of the season. Administering in the middle of the season allowed the "newness" of the season to wear off to hopefully get a true measurement of engagement. If questionnaires were administered late into the season, then burnout could have been reported higher because athletes tend to be more tired at the end of the season.

This study also had some delimitations. Data was collected from only one high school. Results could have differed from school to school given the school's history of performance in the sampled sports. If the school has a history of performing well in a given sport, then their perceptions of motivational climate with burnout and engagement could be different than a school who has a history of not performing well. Lastly, athletes were instructed to only think about their head coach when completing the coach motivational climate questionnaire. The current study only examined the influence from the head coaches; however, the team climate may be influenced by the assistant coaches as well.

Strengths

This is one of the first studies to examine all three social agents' motivational climates and one of the few to use high school aged participants. Only one known study examined all three social agents and their relation to athlete sport experiences; however, this study only examined task orientation from each social agent (Atkins et al., 2014). Studies that examine all three social agents and their impact on athlete sport experiences are necessary to evaluate which plays the most important role. Another strength of the study was that it sampled high school aged athletes (14-19 years of age). Previous research has examined social agent's motivational climate with burnout and engagement, but the samples overlapped age groups (i.e., 12-17 years of age). This makes it difficult to understand the relationships between motivational climate created with burnout and engagement with older athletes. The principal investigator was also able to sample all but two teams during the winter sport season. This is a strength of the study because a wide variety of teams were able to be examined. Lastly, the goal was to sample 150 student athletes and after excluding incomplete questionnaires, the final number of athletes sampled was 150. A

large sample size increases the likelihood that findings are not sample specific and are more generalizable to the population being studied.

Conclusion

Results found that the mastery climates created by coaches, parents and peers were associated with high engagement and low burnout. This suggests that mastery climates created by each social agent are important to keep athletes engaged in their sport and reduce feelings of burnout. When parents, coaches and peers were examining collectively the mastery climate from both peers and coaches predicted lower burnout and higher engagement. Overall, the current study found that mastery climates created by parents, coaches and peers are associated with positive sport experiences and that coaches and peers predict lower burnout and higher engagement in high school aged athletes.

REFERENCES

Ahmadi, M., Namazizadeh, M., & Mokhtari, P. (2012). Perceived motivational climate, basic psychological needs and self determined motivation in youth male athletes. *World Applied Sciences Journal, 16*(9), 1189-1195.

Alvarez, M. S., Balaguer, I., Castillo, I., & Duda, J. L. (2012). The coach-created motivational climate, young athletes' well-being, and intentions to continue participation. *Journal of Clinical Sport Psychology, 6,* 166-179.

Aspen Institute Project Play. (2019). *State of play 2019: Trends and developments in youth sports.* Retrieved from https://assets.aspeninstitute.org/content/uploads/2019/10/2019_SOP_National_Final.pdf

Atkins, M. R., Johnson, D. M., Force, E. C., & Petrie, T. A. (2014). Peers, parents, and coaches, oh my! The relation of the motivational climate to boys' intention to continue in sport. *Psychology of Sport and Exercise, 16,* 170-180. http://dx.doi.org/10.1016/j.psychsport.2014.10.008

Breiger, J., Cumming, S. P., Smith, R. E., & Smoll, F. (2015). Winning, motivational climate, and young athletes' competitive experiences: Some notable sex difference. *International Journal of Sports Science & Coaching, 10,* (2+3), 395-411.

Buch, R., Nerstad, C. G. L., & Säfvenbom, R. (2015). The interactive roles of mastery climate and performance climate in predicting intrinsic motivation. *Scandinavian Journal of Medicine & Science in Sports, 27,* 245-253. doi: 10.1111/sms.12634

Burton, D., & Raedeke, T. (2008). *Sport psychology for coaches.* Human Kinetics.

Castro-Sánchez, M., Zurita-Ortega, F., García-Marmol, E., & Chacón-Cuberos, R. (2019). Motivational climate in sports is associated with life stress levels, academic performance and physical activity engagement of adolescents. *International Journal of Environmental Research and Public Health, 16,* 1-15. doi:10.3390/ijerph16071198

Chan, D. K., Lonsdale, C., & Fung, H. H. (2012). Influences of coaches, parents, and peers on the motivational patterns of child and adolescent athletes. *Scandinavian Journal of Medicine & Science in Sports, 22,* 558-568. doi: 10.1111/j.1600-0838.2010.01277.x

Cordes, C. L. & Dougherty, T. W. (1993). A review and an integration of research on job burnout. *Academy of Management Review, 18*(4), 621-656

Cresswell, S. L., & Eklund, R. C. (2006). The convergent and discriminant validity of burnout measures in sport: A multi-trait/multi-method analysis. *Journal of Sports Sciences, 24*(2), 209-220. DOI: 10.1080/02640410500131431

Cumming, S. P., Smoll, F. L., Smith, R. E., & Grossbard, J. R. (2007). Is winning everything? The relative contributions of motivational climate and won-lost percentage in youth sports. *Journal of Applied Sport Psychology, 19*(3), 322-336. https://doi.org/10.1080/10413200701342640

Curran, T., Hill, A. P., Hall, H. K., & Jowett, G. E. (2015). Relationships between the coach-created motivational climate and athlete engagement in youth sport. *Journal of Sport & Exercise Psychology, 37,* 193-198. http://dx.doi.Org/10.1123/jsep.2014-0203

DeFrancisco, C., Arce, C., del Pilar Vílchez, M., & Vales, Á. (2016). Antecedents and consequences of burnout in athletes: perceived stress and depression. *International Journal of Clinical and Health Psychology, 16,* 239-246. http://dx.doi.org/10.1016/j.ijchp.2016.04.001

DeFreese, J. D., & Smith A. L. (2014). Athlete social support, negative social interactions, and psychological health across a competitive sport season. *Journal of Sport & Exercise Psychology, 36,* 619-630. http://dx.doi.org/10.1123/jsep.2014-0040

DeFreese, J. D., Raedeke, T. D., & Smith, A. L. (2015). Athlete burnout: An individual and organizational phenomenon. In J. M. Williams & V. Krane (Eds), *Applied sport psychology: Personal growth to peak performance* (pp. 444-461). New York, NY: McGraw-Hill.

Duda, J. L. (1992). Motivation in sport settings: A goal perspective analysis. In G. Roberts (Ed), *Motivation in Sport and Exercise* (pp. 57-91). Champaign, IL: Human Kinetics.

Duda, J. L. (1993). Goals: A social cognitive approach to the study of achievement motivation in sport. In R. N. Singer, M. Murphey, and L. K. Tennant (Eds), *Handbook of Research in Sport Psychology*) (pp. 421-436). New York: Macmillan.

Duda, J. L. & Treasure, D. C. (2015). The motivational climate, athlete motivation, and implications for the quality of sport engagement. In J. M. Williams & V. Krane (Eds), *Applied sport psychology: Personal growth to peak performance* (pp. 57-77). New York, NY: McGraw-Hill.

Dweck, C. S. (2008). *Mindset: The new psychology of success*. Ballantine Books.

Frank, R., Nixdorf, I., & Beckmann, J. (2017). Analyzing the relationship between burnout and depression in junior elite athletes. *Journal of Clinical Sport Psychology, 11,* 287-303. https://doi.org/10.1123/JCSP.2017-0008

Gabana, N. T., Steinfeldt, J. A., Wong, Y. J., & Chung, Y. B. (2017). Gratitude, burnout and sport satisfaction among college student-athletes: The mediating role of perceived social support. *Journal of Clinical Sport Psychology, 11,* 14-33. https://doi.org/10.1123/jcsp.2016-0011

García-Calvo, T., Leo, F. M., Gonzalez-Ponce, I., Sánchez-Miguel, P. A., Mouratidis, A., & Ntoumanis, N. (2014). Perceived coach-created and peer-created motivational climates and their associations with team cohesion and athlete satisfaction: Evidence from a longitudinal study. *Journal of Sports Sciences, 32*(18), 1738-1750.

González-García, H., Martinent, G., & Morales, A. T. (2019). Perceived coach leadership profiles and relationship with burnout, coping, emotions. *Frontiers in Psychology, 10,* 1-8. doi: 10.3389/fpsyg.2019.01785

Gould, D. (2019). The current youth sport landscape: Identifying critical research issues. *Kinesiology Review, 8,* 150-161. https://doi.org/10.1123/kr.2019-0034

Gould, D. (1996). Personal motivation gone awry: Burnout in competitive athletes. *Quest, 48,* 275-289.

Gould, D., Tuffey, S., Udry, E., & Loehr, J. (1996). Burnout in competitive junior tennis players: A quantitative psychological assessment. *The Sport Psychologist, 10,* 322-340.

Gould, D., Tuffey, S., Udry, E., & Loehr, J. (1996). Burnout in competitive junior tennis players: II. A qualitative analysis. *The Sport Psychologist, 10,* 341-366.

Gustafsson, H., DeFreese, J. D., & Madigan, D. J. (2017). Athlete burnout: Review and recommendations. *Sport Psychology, 16,* (109-113).

Gustafsson, H., Kenttä, G., & Hassmén, P. (2011). Athlete burnout: an integrated model and future research directions. *International Review of Sport and Exercise Psychology, 4*(1), 3-24. DOI: 10.1080/1750984X.2010.541927

Gustafsson, Hill, A. P., Stenling, A., & Wagnsson, S. (2016). Profiles of perfectionism, parental climate, and burnout among competitive junior athletes. *Scandinavian Journal of Medicine & Science in Sports, 26,* 1256-1264. doi: 10.1111/sms.12553

Harwood, C. G., Keegan, R. J., Smith, J. M. J., & Raine, A. S. (2015). A systematic review of the intrapersonal correlates of motivational climate perceptions in sport and physical activity. *Psychology of Sport and Exercise, 18,* 9-25.

Hogue, C. M., Fry, M. D., & Fry, A. C. (2017). The differential impact of motivational climate on adolescents' psychological and physiological stress responses. *Psychology of Sport and Exercise, 30,* 118-127. http://dx.doi.org/10.1016/j.psychsport.2017.02.004

Hogue, C. M., Fry, M. D., Fry, A. C., & Pressman, S. D. (2013). The influence of a motivational climate intervention on participants' salivary cortisol and psychological responses. *Journal of Sport & Exercise Psychology, 35,* 85-97.

Holmberg, P. M., & Sheridan, D. A. (2013). Self-determined motivation as a predictor of burnout among college athletes. *The Sport Psychologist, 27,* 177-187.

Jõesaar, H., Hein, V., & Hagger, M. S. (2012). Youth athletes' perception of autonomy support from the coach, peer motivational climate and intrinsic motivation in sport setting: One-year effects. *Psychology of Sport and Exercise, 13,* 257-262. doi:10.1016/j.psychsport.2011.12.001

Kipp, L. & Amorose, A. J. (2008). Perceived motivational climate and self-determined motivation in female high school athletes. *Journal of Sport Behavior, 31,* 108-129.

Kristiansen, E., Halvari, H., & Roberts, G. C. (2012). Organizational and media stress among professional football players: Testing an achievement goal theory model. *Scandinavian Journal of Medicine & Science in Sports, 22*, 569-579. doi: 10.1111/j.1600-0838.2010.01259.x

Kristiansen, E., Roberts, G. C., & Abrahamsen, F. E. (2007). Achievement involvement and stress coping in elite wrestling. *Scandinavian Journal of Medicine & Science in Sports, 18,* 526-538. DOI: 10.1111/j.1600-0838.2007.00646.x

Lemyre, P. N., Hall, H. K., & Roberts, G. C. (2008). A social cognitive approach to burnout in elite athletes. *Scandinavian Journal of Medicine & Science in Sports, 18,* 221-234. DOI: 10.1111/j.1600-0838.2007.00671.x

Leo, F. M., Sánchez, P. A., Sánchez, D., Amado, D., & García, C. (2009). Influence of the motivational climate created by coach in the sport commitment in youth basketball players. *Revista de Psicología del Deporte, 18,* 375-378.

Li, C., Wang, C. K. J., Pyun, D. Y., & Kee, Y. H. (2013). Burnout and its relations with basic psychological needs and motivation among athletes: A systematic review and meta-analysis. *Psychology of Sport and Exercise, 14,* 692-700. http://dx.doi.org/10.1016/j.psychsport.2013.04.009

Lonsdale, C. & Hodge, K. (2010). Temporal ordering of motivational quality and athlete burnout in elite sport. *Medicine & Science in Sports & Exercise,* 913-921.

Lonsdale, C., Hodge, K., & Jackson, S. A. (2007). Athlete engagement: II. Development and initial validation of the athlete engagement questionnaire. *International Journal of Sport Psychology, 38,* 471-492.

Miulli, M., & Nordin-Bates, S. M. (2011). Motivational climates: What they are, and why they matter. *The IADMS Bulletin for Teachers, 3*(2), 5-7.

Ntoumanis, N. & Vazou, S. (2005). Peer motivational climate in youth sport: Measurement development and validation. *Journal of Sport & Exercise Psychology, 27,* 432-455.

Ntoumanis, N., Vazou, S. & Duda, J. L. (2006). Predicting young athletes' motivational indices as a function of their perceptions of the coach- and peer-created climate. *Psychology of Sport and Exercise, 7,* 215-233. doi:10.1016/j.psychsport.2005.08.007

Ommundsen, Y., & Kvalø, S. E. (2007). (Autonomy-mastery, supportive or performance focused? Different teacher behaviours and pupils' outcomes in physical education. *Scandinavian Journal of Educational Research, 51,* 385-413. DOI: 10.1080/00313830701485551

Ommundsen, Y., Roberts, G. C., Lemyre, P. N., & Miller, B. W. (2006). Parental and coach support or pressure on psychosocial outcomes of pediatric athletes in soccer. *Clinical Journal of Sport Medicine, 16*(6), 522-526.

O'Rourke, D. J., Smith, R. E., Smoll, F. L., & Cumming, S. P. (2014). Relations of parent- and coach- initiated motivational climates to young athletes' self-esteem, performance anxiety, and autonomous motivation: Who is more influential? *Journal of Applied Sport Psychology, 26,* 395-408. DOI: 10.1080/10413200.2014.907838

Pacewicz, C. E., Mellano, K. T., & Smith, A. L. (2019). A meta-analytic review of the relationship between social constructs and athlete burnout. *Psychology of Sport & Exercise, 43,* 155-164. https://doi.org/10.1016/j.psychsport.2019.02.002

Papaioannou, A., & Kouli, O. (1999). The effect of task structure, perceived motivational climate and goal orientations on students' task involvement and anxiety. *Journal of Applied Sport Psychology, 11*(1), 51-71. DOI: 10.1080/10413209908402950

Parish, L. E., & Treasure, D. C. (2003). Physical activity and situational motivation in physical education: Influence of the motivational climate and perceived ability. *Research Quarterly for Exercise and Sport, 74*(2), 173-182. DOI: 10.1080/02701367.2003.10609079

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.

Price, M. S., & Weiss, M. R. (2000). Relationships among coach burnout, coach behaviors, and athletes' psychological responses. *The Sport Psychologist, 14,* 391-409.

Raedeke, T. D., & Smith, A. L. (2001). Development and preliminary validation of an athlete burnout measure. *Journal of Sport & Exercise Psychology, 23,* 281-306.

Raedeke, T. D., & Smith, A. L. (2004). Coping resources and athlete burnout: An examination of stress mediated and moderation hypotheses. *Journal of Sport & Exercise Psychology, 26,* 525-541.

Raedeke, T. D., & Smith, A. L. (2008). *The Athlete Burnout Questionnaire Test Manual*. Morgantown, West Virginia: Fitness Information Technology.

Raedeke, T. D., Lunney, K., & Venables, K. (2002). Understanding athlete burnout: coach perspectives. *Journal of Sport Behavior, 25*(2), 181-206.

Ruiz, M. C., Haapanen, S., Tolvanen, A., Robazza, C., & Duda, J. L. (2017). Predicting athletes' functional and dysfunctional emotions: The role of the motivational climate and motivation regulations. *Journal of Sports Sciences, 35*(16), 1598-1606.

Sánchez-Miguel, P. A., Leo, F. M., Sánchez-Oliva, D., Amado, D., & García-Calvo, T. (2013). The importance of parents' behavior in their children's enjoyment and amotivation in sports. *Journal of Human Kinetics, 36,* 169-177. DOI: 10.2478/hukin-2013-0017

Sarrazin, P., Vallerand, R., Guillet, E., Pelletier, L., & Cury, F. (2002). Motivation and dropout in females handballers: A 21-month prospective study. *European Journal of Social Psychology, 32,* 395-418. DOI: 10.1002/ejsp.98

Schaufeli, W. B., Maslach, C., & Marek, T. (Eds.) (1993). *Professional burnout: Recent developments in theory and research*. Washington, DC: Taylor & Francis.

Seifriz, J. J., Duda, J. L., & Chi, L. (1992). The relationship of perceived motivational climate to intrinsic motivation and beliefs about success in basketball. *Journal of Sport and Exercise Psychology, 14*, 375-392.

Smith, R. E. (1986). Toward a cognitive-affective model of athletic burnout. *Journal of Sport Psychology, 8,* 36-50.

Smith, A. L., Gustafsson, H., & Hassmén, P. (2010). Peer motivational climate and burnout perceptions of adolescent athletes. *Psychology of Sport and Exercise, 11,* 453-460. doi:10.1016/j.psychsport.2010.05.007

Smith, R. E., Cumming, S. P., & Smoll, F. L. (2008). Development and validation of the motivational climate scale for youth sports. *Journal of Applied Sport Psychology, 20,* 116-136. DOI: 10.1080/10413200701790558

Standage, M., Duda, J., & Ntoumanis, N. (2003). Predicting motivational regulations in physical education: The interplay between dispositional goal orientations, motivational climate and perceived competence. *Journal of Sports Sciences, 21*(8), 631-647. DOI: 10.1080/0264041031000101962

Stein, G. L., Raedeke, T. D., & Glenn, S. D. (1999). Children's perceptions of parent sport involvement: It's not how much, but to what degree that's important. *Journal of Sport Behavior, 22*(4), 591-601.

Vealey, R. S., Armstrong, L., Comar, W., & Greenleaf, C. A. (1998). Influence of perceived coaching behaviors on burnout and competitive anxiety in female college athletes. *Journal of Applied Sport Psychology, 10*(2), 297-318, DOI: 10.1080/10413209808406395

Weiss, M. R., Amorose, A. J., & Wilko, A. M. (2009). Coaching behaviors, motivational climate, and psychosocial outcomes among female adolescent athletes. *Pediatric Exercise Science, 21,* 475-492.

White, S. A. (1996). Goal orientation and perceptions of the motivational climate initiated by parents. *Pediatric Exercise Science, 8,* 122-129.

White, S. A., Duda, J. L., & Hart, S. (1992). An exploratory examination of the parent-initiated motivational climate questionnaire. *Perceptual and Motor Skills, 75,* 875-880.

APPENDIX A: IRB APPROVAL

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** · **rede.ecu.edu/umcirb/**

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: Jordan Barbee
CC: Thomas Raedeke
Date: 11/8/2019
Re: UMCIRB 19-002402
Motivational Climate and Athlete Sport Experience

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) occurred on 11/8/2019. The research study is eligible for review under expedited category # 7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a Final Report application to the UMCIRB prior to the Expected End Date provided in the IRB application. If the study is not completed by this date, an Amendment will need to be submitted to extend the Expected End Date. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
Coach Invitation via email	Recruitment Documents/Scripts
Consent Form	Consent Forms
Questionnaires	Surveys and Questionnaires

For research studies where a waiver of HIPAA Authorization has been approved, each of the waiver criteria in 45 CFR 164.512(i)(2)(ii) has been met. Additionally, the elements of PHI to be collected as described in items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

APPENDIX B: LETTER OF ASSENT

Dear Participant,

I am a graduate student at East Carolina University in the Kinesiology Department studying sport psychology under the direction of Dr. Tom Raedeke. I am asking you to take part in my research study titled, "Association of Coach, Parent, and Peer-Initiated Motivational Climates with Sport Engagement and Burnout".

The purpose of this research is to examine motivation and factors thought to influence sport participation in high school athletes. Specifically, we will examine the association of motivational climate with sport engagement and burnout. We hope the information from this study will be useful in helping us learn how to structure sport to be a positive experience for athletes. Your participation is completely voluntary.

You have been invited to take part in this research because you are a member of a sports team at Ocean Lakes High School. If you agree to participate, you will be asked questions about your team's motivational climate, sport engagement and athlete burnout as well some demographic questions. Completing the survey will take about 15 minutes.

The survey is not a test -- there are no right or wrong answers. Rather we are interested in your thoughts about your high school sport participation. When answering the questions, do not spend much time on each item, rather simply record your initial thought. No one will see your completed questionnaire except my faculty supervisor and myself. Your answers are completely confidential and anonymous, so you don't need to put your name on the survey.

This research is overseen by the University and Medical Center Institutional Review Board (UMCIRB) at ECU. Therefore, some of the UMCIRB members or the UMCIRB staff may need to review your research data. However, the information you provide will not be linked to you as we will not ask you to record your name on the survey**.** Therefore, your responses cannot be traced back to you by anyone, including me or my supervisor, Dr. Tom Raedeke.

If you have questions about your rights when taking part in this research, call the University and Medical Center Institutional review Board (UMCIRB) at 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, call the Director of Human Research Protections, at 252-744-2914.

You do not have to take part in this research, and you can stop at any time. If you decide you are willing to take part in this study, continue with the survey below.

Thank you for taking the time to participate in my research.

Sincerely,

Jordan Barbee, Principal Investigator

APPENDIX C: QUESTIONNAIRE

(Note: I included the questionnaire for Men's Basketball. The other questionnaires were similar, just conceptualized for their particular sport.)

Reflections on Your Sport Experience
2019-2020 Season

Instructions:

We are interested in your opinions and views on your high school basketball experiences this season. There are no right or wrong answers so please answer each question as honestly as you can. We won't share your answers with anyone. Do not spend too much time on any one question. Some items may appear similar but please make sure you answer all items. If you have questions, feel free to ask.

Directions: Please read each statement carefully and decide if you ever feel this way about your current basketball participation. Please indicate how often you have had this feeling or thought this season by circling a number 1 to 5, where 1 means "I almost never feel this way" and 5 means "I feel that way most of the time."

	How often do you feel this way?	Almost Never	Rarely	Sometimes	Frequently	Almost Always
1.	I'm accomplishing many worthwhile things in basketball.	1	2	3	4	5
2.	I feel so tired from my training that I have trouble finding energy to do other things.	1	2	3	4	5
3.	The effort I spend in basketball would be better spent doing other things.	1	2	3	4	5
4.	I feel overly tired from my basketball participation.	1	2	3	4	5
5.	I am not achieving much in basketball.	1	2	3	4	5
6.	I don't care as much about my basketball performance as I used to.	1	2	3	4	5
7.	I am not performing up to my ability in basketball.	1	2	3	4	5
8.	I feel "wiped out" from basketball.	1	2	3	4	5
9.	I'm not into basketball like I used to be.	1	2	3	4	5
10.	I feel physically worn out from basketball.	1	2	3	4	5
11.	I feel less concerned about being successful in basketball than I used to.	1	2	3	4	5
12.	I am exhausted by the mental and physical demands of basketball.	1	2	3	4	5
13.	It seems that no matter what I do, I don't perform as well as I should.	1	2	3	4	5
14.	I feel successful at basketball.	1	2	3	4	5
15.	I have negative feelings toward basketball.	1	2	3	4	5

		Almost Never	Rarely	Sometimes	Frequently	Almost Always
16.	I believe I am capable of accomplishing my goals in basketball.	1	2	3	4	5
17.	I feel energized when I participate in basketball.	1	2	3	4	5
18.	I am dedicated to achieving my goals in basketball.	1	2	3	4	5
19.	I feel excited about basketball.	1	2	3	4	5
20.	I feel capable of success in basketball.	1	2	3	4	5
21.	I feel energetic when I participate in basketball.	1	2	3	4	5
22.	I am determined to achieve my goals in basketball.	1	2	3	4	5
23.	I am enthusiastic about basketball.	1	2	3	4	5
24.	I believe I have the skills/technique to be successful in basketball.	1	2	3	4	5
25.	I feel really alive when I participate in basketball.	1	2	3	4	5
26.	I am devoted to basketball.	1	2	3	4	5
27.	I enjoy basketball.	1	2	3	4	5
28.	I am confident in my basketball abilities.	1	2	3	4	5
29.	I feel mentally alert when I participate in basketball.	1	2	3	4	5
30.	I want to work hard to achieve my goals in basketball.	1	2	3	4	5
31.	I have fun in basketball.	1	2	3	4	5

Motivational Climate Created by Parents

Directions: Please read each of the following statements listed below and indicate how much you personally agree with each statement by circling the appropriate response. To answer these questions, think about your parent who is the most involved in your basketball experience.

My parent who is most involved is _____(Please indicate)

	Items	Strongly Disagree	Disagree	Agree	Strongly Agree
1.	Is satisfied when I learn something new.	1	2	3	4
2.	Makes me worried about failing.	1	2	3	4
3.	Looks satisfied when I win without effort.	1	2	3	4
4.	Makes me worried about failing because it will appear negative in his/her eyes.	1	2	3	4
5.	Pays special attention to whether I am improving my skills.	1	2	3	4
6.	Says it is important for me to win without trying hard.	1	2	3	4
7.	Makes sure that I learn one thing before teaching me another.	1	2	3	4
8.	Thinks I should achieve a lot without much effort.	1	2	3	4
9.	Believes enjoyment is very important in developing new skills.	1	2	3	4
10.	Makes me feel badly when I can't do as well as others.	1	2	3	4
11.	Looks completely satisfied when I improve after hard effort.	1	2	3	4
12.	Makes me afraid to make mistakes.	1	2	3	4
13.	Tells me I should be satisfied when I achieve without trying hard.	1	2	3	4
14.	Approves of me enjoying myself trying to learn new skills.	1	2	3	4
15.	Supports my feelings of enjoyment to skill development.	1	2	3	4
16.	Makes me worried about performing skills that I am not good at.	1	2	3	4
17.	Encourages me to enjoy learning new skills.	1	2	3	4
18.	Tells me that making mistakes are part of learning.	1	2	3	4

Motivational Climate Created by the Coach

Directions: Here are some statements about what your current basketball team is like. Please read each one and circle the number that is most correct. If there is more than one coach on your team, think about your head coach when answering the questions. If you play both JV and Varsity, complete the questionnaire based on the coach you spend the most time with.

	Not at all True		Somewhat True		Very True
1. Winning games was the most important thing for the coach.	1	2	3	4	5
2. The coach made players feel good when they improved a skill.	1	2	3	4	5
3. The coach spent less time with the players who weren't as good.	1	2	3	4	5
4. The coach encouraged us to learn new skills.	1	2	3	4	5
5. The coach told us which players on the team were the best.	1	2	3	4	5
6. The coach told players to help each other get better.	1	2	3	4	5
7. The coach told us that trying our best was the most important thing.	1	2	3	4	5
8. The coach paid most attention to the best players.	1	2	3	4	5
9. Coach said that teammates should help each other improve their skills.	1	2	3	4	5
10. Players were taken out of games if they made a mistake.	1	2	3	4	5
11. The coach said that all of us were important to the team's success.	1	2	3	4	5
12. Coach told us to try to be better than our teammates.	1	2	3	4	5

Motivational Climate Created by your Peers

Directions: Please read each of the following statements listed below and indicate how much you personally agree with each statement by circling the appropriate response. To answer these questions, think about your teammates on your current basketball team.

On this team, most athletes…

		Strongly disagree			Neutral			Strongly agree
1	Help each other improve.	1	2	3	4	5	6	7
2	Encourage each other to outplay their teammates.	1	2	3	4	5	6	7
3	Offer to help their teammates develop new skills.	1	2	3	4	5	6	7
4	Cares more about the opinion of the most able teammates.	1	2	3	4	5	6	7
5	Make their teammates feel valued.	1	2	3	4	5	6	7
6	Work together to improve the skills they don't do well.	1	2	3	4	5	6	7
7	Make negative comments that put their teammates down.	1	2	3	4	5	6	7
8	Try to do better than their teammates.	1	2	3	4	5	6	7
9	Criticize their teammates when they make mistakes.	1	2	3	4	5	6	7
10	Teach their teammates new things.	1	2	3	4	5	6	7
11	Encourage their teammates to try their hardest.	1	2	3	4	5	6	7
12	Look pleased when they do better than their teammates.	1	2	3	4	5	6	7
13	Make their teammates feel accepted.	1	2	3	4	5	6	7
14	Want to be with the most able teammates.	1	2	3	4	5	6	7
15	Praise their teammates who try hard.	1	2	3	4	5	6	7
16	Complain when the team doesn't win.	1	2	3	4	5	6	7

		Strongly disagree			Neutral			Strongly agree
17	Are pleased when their teammates try hard.	1	2	3	4	5	6	7
18	Care about everyone's opinion.	1	2	3	4	5	6	7
19	Set an example on giving forth maximum effort.	1	2	3	4	5	6	7
20	Laugh at their teammates when they make mistakes.	1	2	3	4	5	6	7
21	Encourage their teammates to keep trying after they make a mistake.	1	2	3	4	5	6	7

Age: _____ Sex (circle one) Male Female

What is your race or ethnic background? (circle all that apply)

African American Caucasian Hispanic Asian Native American Other

Year in school (circle one) Freshman Sophomore Junior Senior

Participating Sport:_____

Level (circle one) Varsity Junior Varsity Floater (play both)

How long have you been participating in this sport? _____ years

Playing time (circle one) Starter Nonstarter

On average how many times do you typically practice per week?

1 2 3 4 5 6

Do you participate in other high school sports? (circle one) YES NO

If yes, what sport(s)_____

Do you participate in other competitive club/travel teams? (Circle one) YES NO

If yes, what sport(s)?_____

APPENDIX D: COACH INVITATION EMAIL

Dear Coach_____,

Currently I am a graduate student at East Carolina University studying sport psychology under the supervision of Dr. Tom Raedeke. I am writing to request your team's participation in a project I am conducting at Ocean Lakes High School. I am interested in examining motivation and factors potentially influencing sport participation in teenage athletes. This project has been approved by ECU's Institutional Review Board. I have also discussed it with Mr. Williams, the Student Activities Coordinator, to make sure he approves of me proceeding with data collection.

In talking with coaches, I realize how important issues related to motivation are in sport today, especially in high school athletics. With your permission, we would like invite your team to participate in this study. If your team is willing to be involved, we would like to have the athletes complete a questionnaire at a regularly scheduled practice. Athlete responses will be kept confidential and anonymous. The questionnaire will take around 15 minutes to complete. I'm aware of the time demands this would impose on you and your athletes. To minimize interference, we would arrange a time with you which would be conducive to your team's schedule. I hope that you are willing to help us with this project. It is important that we get as large a sample as possible.

As a token of appreciation for assistance, we will be happy to share a summary of the results based on the entire sample when the study is finished.

I will follow-up with a phone call in the near future to answer any questions that you may have regarding the project. In the meantime, feel free to contact me at (757) 390-0190 or my supervisor Dr. Raedeke at (252) 737-1292 during the day or at (252) 355-4908 during the evening. Thanks for your consideration, I appreciate it. I look forward to talking with you.

Have a great day!

Sincerely,

Jordan Barbee
Sport Psychology
Dept. of Kinesiology
81B Minges Coliseum
East Carolina University
Greenville, NC 27858
barbeejo18@students.ecu.edu
(757) 390-0190

Dr. Tom Raedeke
Sport Psychology
Dept. of Kinesiology
175 Minges Coliseum
East Carolina University
Greenville, NC 27858
raedeket@ecu.edu
(252) 737-1292