

COACHES' INFLUENCE ON MALE ADOLESCENTS' ACHIEVEMENT MOTIVATION,
PSYCHOLOGICAL FACTORS, AND SPORT PARTICIPATION

Dustin M. Johnson, B.A., M.S.

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APPROVED:

Trent A. Petrie, Major Professor
Patricia L. Kaminski, Committee Member
Scott B. Martin, Committee Member
Vicki L. Campbell, Committee Member and
Chair of the Department of Psychology
James D. Meernik, Acting Dean of the
Toulouse Graduate School

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The motivational climate, as created by coaches, and athletes' goal orientations are key constructs in understanding children's experiences with sport. In this study, the relationship between the perceived motivational climates, male adolescents' goal orientation, and their experiences of self-esteem, sport competence, enjoyment, and ultimately, intention to continue participating in sport was examined. Participants were 405 male adolescents (Sample A: $n = 200$; Sample B: $n = 205$) aged 13-15 years old. Structural equation modeling indicated an overall good fit to the structural model for both data sets. A task goal orientation was predicted by higher levels of coach-created task climate. Participants with higher task goal orientation had greater sport competence, self-esteem, and more enjoyment in sport; enjoyment was the only significant predictor of their intention to continue playing the sport they believe is most important over the next three years.

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CHAPTER 1

INTRODUCTION

Youth sport environments can have a positive influence on the psychological development of children and adolescents, including increased sport/athletic competence, self-esteem, and enjoyment (e.g., Kavussanu & Roberts, 1996; Maleté, 2006; Treasure & Roberts, 1998). Despite these psychological benefits, many young athletes discontinue participation during adolescence, a time of considerable physical growth and change. For example, as part of a study conducted by the Women's Sports Foundation that surveyed boys and girls from 3rd grade to 12th grade in the United States, Sabo and Veliz (2008) found that 45% of the sample had, at some point in their lives, dropped out of sport despite acknowledging that their physical health, social engagement, life satisfaction, and academic achievement had increased when they were involved. Because of the athlete drop-out rates that exist despite the many benefits associated with sport, it is important to study what factors create the motivation for adolescents to continue participating. In order to control for possible gender effects, this study focused on male adolescents, as opposed to sampling both male and female adolescents.

Coaches have been found to play an influential role in shaping the experiences boys have in sport, such as by setting and evaluating their performances (Krane, Greenleaf, & Snow, 1997) and teaching skills new skills and strategies. For example, Sabo and Veliz (2008) reported that 42% of the high school boys in their sample said that their coaches taught them the most about sports among all their social groups (e.g., mother, father, friends, and PE teachers accounted for the remaining 58%). This finding suggests that boys tend to value the teaching experiences that coaches provide, making coaches important contributors to the motivational atmosphere that begets continued participation in sport. Coaches can shape the motivational atmosphere through

their behaviors, values, attitudes, and goals (Smith & Smoll, 2002), and through the climate coaches create, boys learn what is important in terms of winning, putting forth effort, learning, interacting with teammates, and improving in their sport (Newton, Duda, & Yin, 2000). Given the centrality of coaches in boys' sport experiences, the purpose of this study is to explore how the coach-created task motivational environment is related to various psychosocial outcomes, including task goal orientation, and, ultimately, boys' intention to remain involved in sport. In the sections that follow, (1) achievement-related messages from coaches will be defined and discussed using achievement motivation theory, (2) psychological outcomes associated with achievement motivation will be examined, and (3) the effect psychological outcomes have on the intention to continue sport participation will be explored.

Achievement Motivation Theory

Achievement motivation theory posits that intentional behavior in competitive situations is directed at developing or demonstrating high rather than low ability (Nicholls, 1984). There are two referents individuals use to judge their ability. First, ability can be gauged in reference to individuals' past performance or knowledge. From this perspective, gains in self-referenced mastery indicate higher competence, such as when athletes determine that they have developed a more efficient and technically sound execution of a skill compared to previous attempts they have made in practice or competition. Second, ability can be evaluated based on performance relative to others. Being able to achieve more than another with equal effort or achieve as much as another with less effort indicates higher competence, such as when athletes win competitions or score more points than an opponent. In both cases, the perception of competence (or ability) leads to an intentional (goal-oriented) behavior that represents performers' motivation in achievement situations.

Achievement motivation is viewed as both a situational (environmental; Ames, 1992) and a dispositional (personal; Nicholls, 1989) influence. Thus, ability is evaluated based on either situationally-based messages or through ideas that have become a part of the individual's belief system. Environments are shaped by the messages, values, and behaviors of influential social agents, such as coaches (e.g., Smith, Smoll, & Cumming, 2007). The environmental influence is referred to as the motivational climate (Ames, 1992) and will be described in the next section. As children are exposed to the values, attitudes, and behaviors of key social agents, they begin to internalize these messages and ideas, creating an achievement goal orientation (Nicholls, 1984). Goal orientation will be described in the section that follows the description of the motivational climate. Adolescence is an important time for the development of one's goal orientation because it is when children begin to have the cognitive capacity to differentiate between effort (self-referenced perspective) and ability (other-referenced perspective; Fry & Duda, 1997; Nicholls, 1978). In other words, children's belief systems regarding sport participation (i.e., their own behaviors, values, attitudes, and goals) become established during adolescence, so it is especially important to examine the influence of the motivational climate on achievement goal orientation for this age group.

Motivational Climate

Motivational climate refers to "perceptions of situational cues and expectations" (i.e., motivations) of social agents (e.g., coaches) who encourage the development of particular goal orientations and, at any time, induce a specific goal involvement state (Ames, 1992). Ames (1992) identified two types of motivational climates: task-involving (i.e., encourages effort and rewards task mastery and individual improvement) and ego-involving (i.e., fosters social comparison and emphasizes normative ability). In a task-involving climate, individuals derive

satisfaction from personal progress and perceive that significant others emphasize personal skill improvement and regard errors as part of learning, whereas in an ego-involving climate, the emphasis is on interpersonal comparison, the demonstration of normative superiority, and competition with teammates. Of the two, a task-oriented climate consistently has been associated with more positive outcomes for kids, including greater perceptions of sport competence (Newton & Duda, 1999; Treasure, 1997), feeling happier (Ntoumanis & Biddle, 1999), higher self-esteem and satisfaction with life (Walker, Roberts, & Harnisch, 1998), lower anxiety (Walling, Duda, & Chi, 1993), continuation in sport (Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002), and higher levels of sportpersonship and a lower propensity to cheat (Ommundsen, Roberts, Lemyre, & Treasure, 2003) than has been found within ego-oriented environments.

Coaches can directly influence the motivational climate through the encouragement and instruction they provide. For example, Keegan, Spray, Harwood, and Lavallee (2009) found, in semi-structured interviews, that male and female adolescent athletes viewed certain coach behaviors as particularly motivating, such as by offering direct feedback, praise, and support, as well as by demonstrating tolerance and emotional control when interacting with players. Similarly, Black and Weiss (1992) found that male and female adolescent swimmers aged 10-18 years who believed they had received more frequent encouragement and information from their coaches reported higher levels of effort, enjoyment, perceived success, and competence in their sport. Further, certain behaviors related to encouragement and instruction (i.e., positive reinforcement, mistake-contingent encouragement, positive and encouraging corrective instruction, and technical instruction) have been found to lead to a reduction in performance anxiety and an increase in self-esteem among male adolescent baseball players (Smith, Smoll, & Barnett, 1995). Smith, Smoll, and Cumming (2007) found that such behaviors (e.g., positive

reinforcement, technical instruction) reflect a task-involving approach to sport and developed the mastery approach to coaching (MAC) training program as a coaching intervention. In their first test of the MAC, they found that 10-14 year old boys and girls who were coached by adults trained in a “mastery” (i.e., task-oriented) approach (which emphasized giving maximum effort rather than winning or outperforming others) reported reductions in trait and state anxiety pre- to post-season. Based on the results of these studies, it is clear that children respond positively to, and are motivated by, specific coach behaviors. In particular, when coaches offer encouragement and information in an effort to facilitate growth and learning in sport, they appear to create a motivational climate that is task-focused and associated with positive psychological outcomes among children and adolescents.

Goal Orientation

Goal orientations parallel the motivational climate in their dimensions (i.e., task and ego) but is a dispositional construct that defines how individuals interpret, approach, and ultimately respond to achievement/performance related situations (Nicholls, 1984, 1989). A task (or mastery) goal orientation refers to thoughts and behaviors that are focused on improving skill competence (Nicholls, 1984, 1989). Task-oriented individuals generally perceive challenging situations as learning opportunities that will help them ultimately achieve mastery in the performance. The standards that these individuals set are personal, self-based, long-term, and flexible (Ames, 1992; Dweck & Elliot, 1983; Grant & Dweck, 2003), and their criteria for success is self-referenced (Duda & Hall, 2001; Nicholls, 1989). An ego (or performance) goal orientation refers to thoughts and behaviors that protect self-image and foster the appearance of competence (Nicholls, 1989). Ego-oriented individuals often shy away from challenging performance situations where failure is possible because they want to protect their unstable

esteem. These individuals' standards are focused on others, normative, short-term, and rigid (Ames, 1992; Dweck & Elliot, 1983; Grant & Dweck, 2003), and the criteria for success are other-referenced (Duda & Hall, 2001; Nicholls, 1989).

Like its situational counterpart, a task goal orientation has been associated with positive physical, emotional, and psychological outcomes among youth sport athletes and physical education students (Cury, DeFonséca, Rufo, & Sarrazin, 2002; Duda & Hall, 2001; Fox, Goudas, Biddle, Duda, & Armstrong, 1994; Kavussanu & Harnisch, 2000). For example, Cury et al. (2002) found that task goal orientations were related positively to perceived sport competence, intrinsic motivation, and self-efficacy in Physical Education class. Further, children and adolescents who reported high task orientation expressed higher levels of enjoyment in sport (Fox et al., 1994) and less boredom (Duda & Hall, 2001) than those who reported a low task orientation. Regarding self-esteem, task-oriented boys and girls ages 11-14 years who were attending a youth sport camp reported significantly higher levels of self-esteem than did kids who were low in their task orientation (Kavussanu & Harnisch, 2000). This sampling of studies suggests task goal orientations are associated with multiple positive psychological outcomes among youth sport participants. What warrants additional study (Duda & Hall, 2001), is whether or not the impact of the motivational climate on outcome variables can be explained through the subsequent development of goal orientation.

Research on whether goal orientation can potentially mediate the relationship between the motivational climate and psychological outcomes has been minimal; most studies have examined the direct effects of goal orientation and motivational climates on relevant outcomes separately (e.g., Kavussanu & Roberts, 1996; Ommundsen, Roberts, & Kavussanu, 1998; Treasure & Roberts, 1998). In one study that did test goal orientation as a mediator, Cury,

Biddle, Famose, and Goudas (1996) examined adolescent girls' perceptions of the motivational climate and their interest in school physical education (PE) classes. They found that task goals mediated the effects of task climate perceptions. Students' perceptions of a task-oriented environment were related to having a task goal orientation, which in turn, was associated with feeling intrinsically motivated in PE class. This study supports theory (Ames, 1992), which identifies goal orientation as resulting from the motivational climate and subsequently leading to myriad outcomes. More research is needed, though, to better understand the extent to which climates created by different social agents are directly (or indirectly through goal orientation) related to children's and adolescents' psychological functioning.

Psychological Outcomes and the Link to Continued Participation in Sports

As discussed in the previous section, prior research has established strong relationships between children's task goal orientations and the three psychological outcomes of interest in this study: sport competence, self-esteem, and enjoyment (e.g., Cury, DeFonséca, Rufo, & Sarrazin, 2002; Duda & Hall, 2001; Fox et al., 1994; Kavussanu & Harnisch, 2000). Research also has shown that sport competence can influence self-esteem directly (Harter, 1982; 1983). Harter noted that children as young as eight-years-old construct a view of general self-worth based on specific competency judgments, including those related to physical competence (which she defined as "... a focus on sports and outdoor games" [pp. 88]). In their study of boys and girls aged 8-13, Ebbeck and Weiss (1998) found that sport competence accounted for 49% of the variance in the children's self-esteem scores. This finding, along with Harter's theoretical work, supports the hierarchical nature of self-esteem (Baumeister, Campbell, Krueger, & Vohs, 2003; Harter, 1983), whereby it is viewed as a superordinate construct defined by lower-order competence judgments.

Self-esteem, sport competence, and enjoyment also have been related to children's continued participation in sport (Bowker, 2006; Butcher, Lindner, & Johns, 2002; Fox et al., 1994; Ullrich-French & Smith, 2009), which has been a critical area of research due to the need to promote and nurture life-long physical activity. Children are likely to continue playing their sport when they experience enjoyment and feel competent in it (Butcher, Lindner, & Johns, 2002; Fox et al., 1994; Ullrich-French & Smith, 2009). Although researchers have reported consistently positive relationships between sport participation and self-esteem (Bowker, 2006; Bowker, Gadbois, & Cornock, 2003; Slutzky & Simpkins, 2009), few studies have examined whether this relationship exists in reverse. Because self-esteem plays an important role in children's overall psychological development (Slutzky & Simpkins, 2009), research should examine the extent to which it also might serve as an antecedent of boys' intention to continue participating in sport.

Although examining boys' behavioral intention to continue participating may not be as ideal as studying their actual continuation in sport over time, it is appropriate to do so for several reasons. First, because the relationships in this model have not been fully tested as proposed, a cross-sectional design is warranted (Stice, 2002). Once the relationships have been established, longitudinal studies (that could include a measure of actual continuation in sport) would be appropriate. Second, behavioral intent is typically a strong predictor of behavior (Ajzen, 1985), has been used previously as a means of assessing continuation in sport (Le Bars, Gernigon, & Ninot, 2009), and has been linked in previous research to actual sport participation. For example, Hagger et al. (2001) examined two groups of 12 to 14 year old boys and girls longitudinally and found a significant relationship between children's intention and actual sport participation ($\beta =$

.59). Thus, it is plausible, in this first test of the proposed model, to measure continued participation by way of behavioral intention.

Purpose

Thus, the current study examined the relationship of a coach-created task-involving motivational climate on boys' task goal orientation, and the subsequent association of goal orientation with self-esteem, sport competence, enjoyment in sport, and ultimately, intention to continue playing their sport. A multi-component model was tested (see Figure 1). Specifically, it was hypothesized that (a) the Task-involving Motivational Climate created by coaches (i.e., Coach-Created Task Climate) would be related positively to Task Goal Orientation, (b) Task Goal Orientation would be related positively to the boys' Self-Esteem, Sport Competence, and Enjoyment, and (c) Self-Esteem, Sport Competence, and Enjoyment in sport would be related positively to Intention to Continue in sport. Also proposed was an alternate pathway that suggested a direct relationship between Sport Competence and Self-Esteem, to account for the conceptual association between these constructs.

CHAPTER 2

METHOD¹

Participants

Sample A – Exploratory Data Set

Participants were 205 eighth grade boys drawn from six different middle schools located within the same suburban school district in the southwestern United States. They were drawn from their athletic period, which is a physical education class taken by boys who are participating in one or more of the school's sports programs. Their mean age was 13.8 years ($SD = 0.55$); 27.8% ($n = 57$) were 13 years old, 64.9% ($n = 133$) were 14, and 6.3% ($n = 13$) were 15. Participants identified themselves as A ($n = 90$; 46.6%), B ($n = 93$; 48.2%), and C ($n = 10$; 5.2%) students. The race/ethnicity of the sample was: 54.1% Caucasian/White ($n = 111$), 11.2% African-American/Black ($n = 23$), 23.9% Hispanic/Latino ($n = 49$), 2.0% Asian-American/Pacific Islander ($n = 4$), and 8.8% other/biracial/multiracial ($n = 18$).

Concerning the sports in which the boys participated (they could list more than one), football was the most popular (61.5%; $n = 126$), followed by track (41.0%; $n = 84$), and basketball (36.1%; $n = 74$). They also indicated which of these sports they believed was their “main sport” (i.e., the sport with which they most identified): 40.5% ($n = 83$) football, 14.6% ($n = 30$) basketball, 10.7% ($n = 23$) track, 10.7% ($n = 23$) soccer, 10.7% ($n = 22$) baseball, 3.4% ($n = 7$) golf, 0.5% ($n = 1$) hockey, and 1.0% ($n = 2$) swimming. 6.8% ($n = 14$) indicated that their main sport was “other.” Not including the “other” category, 95.3% played “team” sports (swimming and golf were considered “individual” sports). The mean number of sports played per participant was 2.12, with 63% ($n = 130$) playing two or more sports. In rating their ability in

¹ This study was performed in collaboration with a research team that included Matthew R. Atkins and Erica C. Force. Large sections of this chapter were co-authored by the team.

their main sport relative to their peers, 14 participants (6.8%) said they were below average in skill compared to their peers, 69 (33.7%) reported being on par with peers' skill levels, and the remaining 122 (59.5%) said they were above average in skill compared to their peers.

Sixty-one (29.7%) indicated that they were presently playing their main sport, whereas 130 (63.4%) indicated being in offseason training for their main sport. Fourteen (6.8%) participants left the item blank. In terms of their playing status on their main sport team, 66.8% ($n = 137$) said that they were starters or played regularly in competition, whereas 33.2% ($n = 68$) reported being a substitute. Regarding the competitive level of their main sport, 22.9% ($n = 47$) said they played in a select league, 60.0% ($n = 123$) in a school league, and 12.2% ($n = 25$) in a recreational league. Regarding winning, 46.8% ($n = 96$) of the boys stated that they won more than they lost when playing their main sport, as opposed to 29.3% ($n = 60$) who reported losing more than winning; 23.9% ($n = 49$) reported winning as much as losing. In rating their intent to drop out of their main sport in the next three years (from *1- not at all*, to *7- absolutely*), the boys indicated that they intended to keep playing ($M = 2.16$; $SD = 1.57$). In rating their determination to continue in their main sport (*1- not at all*, to *7- absolutely*), the boys reported a high level of intent to continue ($M = 5.79$; $SD = 1.63$).

Regarding the coach of their main sport, the boys indicated that their coaches primarily were (a) men ($n = 200$; 97.6%), and (b) White ($n = 130$; 63.4%). In terms of the coaches' age, 22.9% ($n = 47$) were thought to be aged 20-30 years, 31.2% ($n = 64$) aged 31-40, 8.3% ($n = 17$) aged 41-50, and 1.5% ($n = 3$) older than 50; 34.6% ($n = 71$) reported not knowing their coaches' ages. The boys reported having played for the current coach of their best sport for less than six months (32.2%; $n = 66$), six months to a year (15.6%; $n = 32$), one to two years (38.0%; $n = 78$), and more than two years (12.2%; $n = 25$).

Sample B - Confirmatory Data Set

Participants were 200 eighth grade boys who were drawn from four of the middle schools ($n = 181$) in the same school district as Sample A (during the subsequent year so no participant in Sample A could have been included in Sample B), as well as from a middle school in Colorado ($n = 19$)². As was the case with the exploratory data set, they were drawn from their athletic period, including the middle school in Colorado. Their mean age was 13.4 years ($SD = 0.52$); 0.5% ($n = 1$) was 12 years old, 27.8% ($n = 57$) were 13, 64.9% ($n = 133$) were 14, and 6.3% ($n = 13$) were 15. Participants identified themselves as A ($n = 98$; 49.0%), B ($n = 85$; 42.5%), and C ($n = 9$; 4.5%) students. The race/ethnicity of the sample was: 55.5% Caucasian/White ($n = 111$), 16.0% African-American/Black ($n = 32$), 22.5% Hispanic/Latino ($n = 45$), 4.5% Asian-American/Pacific Islander ($n = 9$), and 1.5% other/biracial/multiracial ($n = 3$).

Concerning the sports in which the boys participated, football again was the most popular (64.5%; $n = 129$), followed by basketball (55.5%; $n = 111$), and track (40.5%; $n = 81$). For their main sport (i.e., the sport with which they most identify), 41.5% ($n = 83$) played football, 23% ($n = 46$) basketball, 23% ($n = 46$) baseball, 7.5% ($n = 15$) soccer, 4.0% ($n = 8$) track, 2.0% ($n = 4$) golf, 0.5% ($n = 1$) hockey, and 0.5% ($n = 1$) swimming; 5.0% ($n = 10$) indicated that their main sport was “other.” Not including the “other” category, 95.5% played “team” sports (swimming, tennis, golf, and dance were considered “individual” sports). The mean number of sports played per participant was 2.57, with 74% ($n = 147$) playing two or more sports. In rating their ability in their main sport compared to peers, eight participants (4.0%) reported their ability level in their main sport to be below average compared to most, 63 (31.5%) said their ability level was on par

² The small sample from Colorado was used because it was available and I wanted to ensure that I would reach a minimum of 200 participants. At the time of data collection, I was unsure whether I would be able to obtain the necessary number of participants from the schools in Denton.

with their peers, and the remaining 129 (64.5%), indicated that their ability level was above average compared to peers.

Fifty-eight (31.1%) indicated that they were presently playing their main sport, whereas the remainder indicated being in offseason training for their main sport (68.0%; $n = 123$). The remaining 19 boys (9.5%) did not answer the item. In terms of their playing status on their main sport team, 63.1% ($n = 125$) said that they were starters or played regularly in competition, whereas 26.9% ($n = 75$) reported being substitutes. Regarding the competitive level of their main sport, 39.4% ($n = 78$) said they played in a select league, 69.8% ($n = 139$) in a school league, and 25.3% ($n = 50$) in a recreational league. Regarding winning, 50.0% ($n = 100$) of the boys stated that they won more than they lost when playing their main sport, as opposed to 31.5% ($n = 62$) who reported losing more than winning; 18.7% ($n = 38$) reported winning as much as losing. In rating their intent to drop out of their main sport in the next three years (from *1- not at all*, to *7- absolutely*), the boys indicated that they intended to keep playing ($M = 1.93$; $SD = 1.40$). In rating their determination to continue in their main sport (*1- not at all*, to *7- absolutely*), the boys reported a high level of intent to continue ($M = 5.74$; $SD = 1.80$).

Regarding the coach of their main sport, the boys indicated that their coaches primarily were (a) men ($n = 198$; 99.0%), and (b) White ($n = 135$; 67.8%). In terms of the coaches' age, 26.0% ($n = 52$) were thought to be aged 20-30 years, 40.0% ($n = 80$) aged 31-40, 10.5% ($n = 21$) aged 41-50, and 3.5% ($n = 7$) older than 50; 20.0% ($n = 40$) reported not knowing their coaches' ages. The boys reported having played for the current coach of their best sport for less than six months (30.0%; $n = 60$), six months to a year (16.0%; $n = 32$), one to two years (38.0%; $n = 76$), and more than two years (16.0%; $n = 32$).

Instruments

Demographics

A demographic questionnaire was developed for the participants to report personal demographics (e.g., age, racial/ethnic status, etc.), sports in which they participate (including identification of “main” sport), status on teams, and data on the coaches of their “main” sports. Participants also listed the sports in which they had participated and were asked to identify their “main sport,” which was defined as “the sport that is important to you in some way.” In reference to their “main sport,” participants answered questions regarding the length of time of participation, their level of competition within that sport, their perceived ability relative to peers in that sport, point of season in which they were currently involved within that sport, and their intention to continue participation in that sport.

Coach-Created Motivational Climate

The 16-item Task scale from the 33-item Revised Perceived Motivational Climate in Sport Questionnaire (PMCSQ-2; Newton, Duda, & Yin, 2000) assesses athletes’ perceptions of their coach having created a task motivational climate (i.e., reinforces personal improvement and effort, believes that each member has an important role on the team, and emphasizes working together as leading to success). Consistent with past research (e.g., Vazou, Ntoumanis, & Duda, 2006), the boys evaluated the coach from their “main sport” team. For each item, participants responded using a five-point scale ranging from 1, *strongly disagree*, to 5, *strongly agree*. Total score is the mean; higher scores indicated either greater perceptions of a coach-initiated task-involving climate. In two separate samples of female athletes (13 to 23 years old), Newton, Duda, and Yin (2000) reported Cronbach’s alphas that ranged from .87 to .88. Cronbach’s alpha for the current study was .95 across both samples. In addition, Newton et al. found evidence for

concurrent validity of the PMCSQ-2 through positive and significant correlations with the Effort and Importance scale of the Intrinsic Motivation Inventory, sport version (IMI; McAuley, Duncan, & Tammen, 1989). In their development of the scale, Newton et al., (2000) reported that the task and ego factors were inversely related ($r = -.69$), suggesting that when coaches operated from a task-involving perspective, athletes experienced very little ego-focus in the motivational climate.

The six-item Task-initiating Climate scale from the Motivational Climate Scale for Youth Sports (MCSYS; Smith, Cumming, & Smoll, 2008) measures the extent to which coaches emphasize improvement, learning new skills, and cooperation when learning skills. The boys completed this scale in reference to the coach from their main sport. For each item, participants respond using a five-point scale ranging from 1, *not at all true*, to 5, *very true*. Total score is the mean; higher scores indicate greater perceptions of a coach-initiated task climate. Smith et al. reported Cronbach's alphas that ranged from .78 to .84 in samples of adolescent male and female basketball players and male and female swimmers. Cronbach's alpha for the current study was .90 within each sample. Regarding the scale's validity, Smith et al. reported significant positive correlations with a widely used measure of task goal orientation (Perception of Success Questionnaire; POSQ; Roberts, Treasure, & Balague, 1998).

Goal Orientation

The 13-item Task and Ego Orientation in Sport Questionnaire (TEOSQ; Duda, 1989) assesses two goal orientations: task (7 items; focus on developing competence, along with personal improvement related to skill mastery, and a self-referenced set of standards) and ego (6 items; focus on winning, being better than others, and an other-referenced set of standards). Although all 13 items were administered, for the purposes of this study, only the task goal factor

was used in the analyses. Duda (1989) found that the two factors were minimally correlated ($r = .03$), which indicates they are measuring unique goal perspectives. Participants respond to each item on a five-point Likert scale ranging from 1, *strongly disagree*, to 5, *strongly agree*. Total score is the mean; higher scores indicate greater perceptions of a task goal orientation. With a sample of male and female students (10th and 11th grade), Duda and Nicholls (1992) reported a Cronbach's alpha of .89; Cronbach's alphas for the current study ranged from .89 to .90 in both samples. Using a sample of adolescents, Duda (1992) reported three-week test-retest reliabilities that ranged from .68 to .75. Construct validity was supported using SEM-based cross-validation procedures, in which task orientation was found to be a valid predictor of intrinsic motivation in sport, a correlate of achievement motivation theory (Li, Harmer, Duncan, Duncan, Acock, & Yamamoto, 1998).

The six-item mastery dimension of the 12-item Achievement Goal Scale for Youth Sports (Cumming, Smith, Smoll, Standage, & Grossbard, 2007) assesses a mastery goal orientation (i.e., personal improvement and being the “best” one can be). The performance (i.e., ego; six items that measure normative superiority and being better than others) goal orientation items were also included in the questionnaire packet, although these items were not used in the measurement model. Participants respond to each item on a five-point Likert scale ranging from 1, *not at all true*, to 5, *very true*. Total score is the mean; higher scores indicated greater perceptions of a mastery goal orientation. Cumming et al. reported a Cronbach's alpha of .78 in a sample of male and female basketball players and swimmers aged 9 to 14 years. Cronbach's alpha for the current study ranged from .85 to .88 across the two samples. Through exploratory and confirmatory factor analyses, Cumming et al. validated the factor structure of the measure and found significant positive correlations with task goal orientation (POSQ; Roberts, Treasure, & Balague,

1998) and mastery motivational climate (Motivational Climate Scale for Youth Sports; MCSYS; Smith, Cumming, & Smoll, 2008).

Sport Competence

The 6-item Sports Competence subscale from the Physical Self-Description Questionnaire (PSDQ; Marsh, Richards, Johnson, Roche, & Tremayne, 1994) measures perceived ability in sport. For each item, participants respond using a 6-point scale ranging from 1, *false*, to 6, *true*. Total score is the mean; higher scores indicate higher levels of perceived competence. Internal consistency reliabilities have ranged from .94 to .95 in four separate trials across a sample of male and female high school students aged 12 to 15 years old (Marsh, 1996). For the two parcels (see *Procedure* to learn how the parcels were developed) in the current study, Cronbach's alpha has ranged from .78 to .83 (Sample A) and .79 to .92 (Sample B). Convergent validity was supported by significant correlations with similar competence scales of the Physical Self-Perception Profile (Fox, 1990) and the Physical Self-Concept Scale (Marsh et al., 1994; Marsh, 1996; Marsh, Hey, Roche, & Perry, 1997).

Self-Esteem

The eight-item Global Esteem subscale from the Physical Self-Description Questionnaire (PSDQ; Marsh, Richards, Johnson, Roche, & Tremayne, 1994) assesses overall positive feelings about oneself and perceptions of self-worth. For each item, participants respond using a six-point scale that ranges from 1, *false*, to 6, *true*. Total score is the mean; higher scores indicate higher self-esteem. Internal consistency reliabilities have ranged from .91 to .94 in four separate trials across a sample of male and female high school students aged 12 to 15 years old (Marsh, 1996). Initially, the PSDQ Global Esteem measure did not load well onto the Self-Esteem construct, likely caused by a clear pattern in responses that indicated the participants did not differentiate

between the reverse-scored items (i.e., negatively-valenced items) and regularly-scored items (i.e., positively-valenced items). Because of this, only the three single positively-valenced items were used. Each one was used as a single indicator of self-esteem, thus no internal consistency could be calculated. Convergent validity was supported by the significant correlations with similar esteem scales of the Physical Self-Perception Profile (Fox, 1990) and the Physical Self-Concept Scale (Marsh, 1996, Marsh et al., 1994, Marsh et al., 1997).

Sport Enjoyment

The four-item Enjoyment subscale from the Sport Commitment Model (SCM; Scanlan, Simons, Carpenter, Schmidt, & Keeler, 1993) assesses positive responses (i.e., enjoyment, happiness, fun, and liking sport) to the sport experience. Participants rate each item on a five-point Likert scale, ranging from 1, *not at all/none*, to 5, *very much*. Each item served as an independent indicator of enjoyment in sport, and thus each item was its own total score. Scanlan et al. (1993) reported a Cronbach's alpha of .90 in a sample of male and female athletes ranging from ages nine to 19 years, and factor analysis confirmed the enjoyment factor as independent within the Sport Commitment Model. Johnson (2009) found support in the use of the four items as independent indicators of the construct, Enjoyment, in a sample of adolescent girls.

Intention to Continue Sport Participation

Two questions, based on Ajzen and Driver's (1992) application of the theory of planned behavior to leisure choice, were used (Le Bars, Gernigon, & Ninot, 2009). The two questions were "Is it likely that you will drop out of your most successful sport in the next three years?" and "Are you determined to continue your most successful sport at a high level?" Participants rate their responses on a seven-point Likert scale, ranging from 1, *not at all*, to 7, *absolutely*. Consistent with Le Bars et al. the two intention items were utilized as single item indicators.

Procedure

Following approval from the University of North Texas Institutional Review Board for Human Subjects, schools in the Dallas/Ft. Worth (D/FW) metropolitan area and the Grand Junction, Colorado municipality were contacted to obtain permission to have eighth grade boys who were playing sports participate. Permission was received from one school district in the D/FW area and one in CO (for Sample B only). Prior to completing the questionnaires, and after their parents provided consent, participants provided assent (see Appendix C). Completion of the questionnaire took approximately 30 minutes. The demographic form was completed first followed by the Task Climate scale of the PMCSQ-2, the Mastery Climate scale of the MCSYS, TEOSQ, AGSYS, PSDQ (Sport Competence and General Esteem subscales), and SCM (Enjoyment construct); the measures were counterbalanced to control for ordering effects. As compensation, participants were entered into a raffle for two \$25 cash prizes at each school, which was held immediately following the completion of questionnaires at each school.

Design and Analysis

Initially, data from both samples were screened for missing values. Using the Missing Values Analysis (MVA) module via SPSS (PASW 18), it was determined the data for each sample were missing completely at random (MCAR). In Sample A, only 0.6% of all the possible data were missing; in Sample B, it was only 0.45%. Expectation maximization (EM), a maximum likelihood estimation method that is part of the SPSS MVA was utilized to replace missing data. EM imputation utilizes observed data to estimate parameters and missing scores (Scholmer, Bauman, & Card, 2010).

Because of the overall length of the questionnaire, the age and attention span of the participants, and the need to have at least two measured variables per latent construct, the

strategic choice was made to include only one measured variable, the PSDQ Sports Competence, to measure competence in sport and then parcel this variable into two separate indicators.

Although not optimal, parceling allows researchers to include multiple indicators of a construct when limited measures of a construct exist (Weston & Gore, 2006). The “item-to-construct balance” parceling technique (Little, Cunningham, Shahar, & Widaman, 2002), in which the researchers “split” each measure into two sets of items that were found to have similar internal consistency values was used to parcel the PSDQ Sports Competence measure. The same configuration of items that represented each parcel was used in both Samples A and B.

Next, total scores for each measure were obtained and then means, standard deviations, as well as measures of the distributional properties (i.e., skewness, kurtosis), were computed. Total scores from the PMCSQ-2, MCSYS, TEOSQ, PSDQ, SCM, and the two intention questions from the demographics were negatively skewed and kurtotic within both data sets. These measures were transformed using square root and logarithmic procedures (Tabachnick & Fidell, 2007); however, the transformed scores still were skewed and kurtotic and thus the decision was made to use the nontransformed values and rely on the robust fit statistics from EQS. Following this decision, correlations and internal consistency reliabilities among all the total scores were calculated.

The proposed model (and the alternate pathway) was tested via structural equation modeling (SEM), which is a multivariate statistical method of relating the observed measures to their proposed theoretical constructs in a theoretically derived model (Bentler, 1980). The adequacy of the model is determined through the degree of fit with the sample data. Maximum Likelihood (ML) estimation was used, which assumes multivariate normality (Weston & Gore, 2006). However, ML is also robust to moderate violations of the normality assumption and can

be used if the data is moderately non-normal (Anderson & Gerbing, 1984), as was the case in the current study. The recommended best practices to determine model fit include incremental (comparison of the model to a null model that specifies no relationships among variables), absolute (how well the model fits the data), and predictive fit indices (Weston & Gore, 2006; Worthington & Whittaker, 2006). Weston and Gore (2006) and Worthington and Whittaker (2006) explained that these three types of indices achieve the major objective in data evaluation: to determine whether the associations among measured and latent variables in the researcher's predicted model are adequately consistent with the observed associations in the data. The specific absolute fit indices that were used were the robust Satorra-Bentler chi-square (χ^2) goodness of fit, and the root mean-square error of approximation with 90% confidence interval (RMSEA). Akaike's information criterion (AIC; Martens, 2005) was the predictive fit index used. Robust statistics were used for the absolute and predictive fit indices. The incremental fit indices used included the comparative fit index (CFI) and the nonnormed fit index (NNFI). Robust statistics were not used for the incremental fit indices, as use of robust fit statistics did not reflect improved fit.

The SEM was carried out over two steps. First, we tested the measurement model through confirmatory factor analysis (CFA). Second, we tested the proposed model, with and without the alternate pathway (see Figure 1). A chi-square test was used to evaluate the difference in degree of fit between the initial and alternative models. In all, 32 parameters were specified for estimation in the structural model, 31 for the alternative model. The sample size exceeded the 5:1 ratio of parameters to participants (Martens & Haase, 2006).

CHAPTER 3

RESULTS

Data analysis began with running a correlation matrix for Samples A and B among all the measured variables used in this study (see Table 1). Descriptive statistics such as means, standard deviations, skewness, kurtosis, and internal consistency reliabilities (Cronbach's alpha), of the measured variables were also gathered (see Table 2).

Preliminary Analyses

Preliminary Analyses

Multivariate analysis of variance (MANOVAs) were used to determine if differences existed among the measured variables of each latent construct by sport level (i.e., recreational, middle school, or select). Separate MANOVAs were run, one for the set of measured variables associated with each latent variable. Within sample A, there were no significant effects for Coach-Created Task Climate = .992, $F(4, 382) = .399$, $p = .809$, partial $\eta^2 = .004$, Goal Orientation, Wilks' lambda = .982, $F(4, 382) = .888$, $p = .471$, partial $\eta^2 = .009$, Self-Esteem, Wilks' lambda = .940, $F(6, 380) = 2.005$, $p = .064$, partial $\eta^2 = .031$, and Fun, Wilks' lambda = .933, $F(8, 378) = 1.677$, $p = .102$, partial $\eta^2 = .034$. There was, however, a significant effect for Sport Competence, Wilks' lambda = .901, $F(4, 382) = 5.1$, $p < .005$, partial $\eta^2 = .051$. For the first Sport Competence indicator, recreational ($M = 5.25$, $SD = .886$) and select ($M = 5.25$, $SD = .771$) level athletes had higher scores than those who played at the school level ($M = 4.73$, $SD = 1.09$), $F(2, 192) = 6.09$, $p < .005$, partial $\eta^2 = .060$. For the second Sport Competence indicator, similar results emerged. Recreational ($M = 5.32$, $SD = .65$) and select ($M = 4.99$, $SD = .86$) level athletes rated themselves higher than those who played at the school level ($M = 4.57$, $SD = 1.04$), $F(2, 192) = 8.1$, $p < .001$, partial $\eta^2 = .078$. A significant multivariate effect also emerged for Intent, Wilks' lambda = .870, $F(4, 382) = 6.86$, $p < .001$, partial $\eta^2 = .067$. With respect to their

likelihood of *not* dropping out of their main sport over the next three years, select level ($M = 6.62$, $SD = .768$) athletes reported higher scores than those who played at either the recreational level ($M = 5.44$, $SD = .961$) or school level ($M = 5.46$, $SD = 1.71$), $F(2, 192) = 13.06$, $p < .001$, partial $\eta^2 = .120$. With respect to their determination to continue their main sport at a high level, select level ($M = 6.51$, $SD = 1.02$) athletes again rated themselves higher than those at the school level ($M = 5.44$, $SD = 1.71$), $F(2, 192) = 9.01$, $p < .001$, partial $\eta^2 = .086$. The recreational athletes did not differ significantly from either the select or school athletes.

Within Sample B there were no significant multivariate effects for Coach-Created Task Climate, Wilks' lambda = .983, $F(4, 364) = .803$, $p = .524$, partial $\eta^2 = .009$, Goal Orientation, Wilks' lambda = .954, $F(4, 364) = 2.168$, $p = .074$, partial $\eta^2 = .023$, Intent, Wilks' lambda = .972, $F(4, 364) = 1.287$, $p = .274$, partial $\eta^2 = .014$, and Fun, Wilks' lambda = .972, $F(8, 360) = .635$, $p = .748$, partial $\eta^2 = .014$. There was, however, a significant effect for Sport Competence, Wilks' lambda = .929, $F(4, 364) = 3.42$, $p < .01$, partial $\eta^2 = .036$. For the first Sport Competence indicator, select level ($M = 5.51$, $SD = .886$) athletes reported higher levels than school level ($M = 4.73$, $SD = 1.09$), $F(2, 183) = 5.037$, $p < .01$, partial $\eta^2 = .052$; recreational athletes ($M = 4.94$, $SD = .86$) did not differ significantly from either group. For the second Sport Competence indicator select level athletes ($M = 5.32$, $SD = .884$) had higher scores than those who played at either the school ($M = 4.76$, $SD = 1.04$) or recreational levels ($M = 4.65$, $SD = .83$), $F(2, 183) = 7.007$, $p < .005$, partial $\eta^2 = .071$. A significant effect for self-esteem was also present, Wilks' lambda = .870, $F(6, 362) = 2.26$, $p < .05$, partial $\eta^2 = .036$. With respect to their belief that most things they do turn out well, select level ($M = 5.25$, $SD = .109$) athletes rated themselves higher than school level ($M = 4.64$, $SD = .135$), $F(2, 183) = 4.466$, $p < .05$, partial $\eta^2 = .047$. The recreational athletes did not differ significantly from the other two groups. With

respect to their belief that they do most things well, select level ($M = 5.25$, $SD = .93$) athletes rated themselves higher than those who played at either the school level ($M = 4.81$, $SD = 1.12$) or recreational level ($M = 4.52$, $SD = 1.36$), $F(2, 183) = 4.334$, $p < .05$, partial $\eta^2 = .045$. With respect to their belief that, overall, they have a lot to be proud of, no significant differences existed between the three groups, $F(2, 183) = 1.738$, $p = .18$, partial $\eta^2 = .019$.

Measurement Model – Sample A (Initial Data Set)

CFA began with the latent variable Coach-Created Task Climate, positively loading the Task Climate scale from the PMCSQ-2 and the Task-initiating Climate scale from the MCSYS on the construct. Task Goal Orientation was the next factor added to the measurement model and was represented by the Task Orientation scale from the TEOSQ and the Mastery Orientation scale from the AGSYS.

Regarding the psychological outcomes, the two parcels from Sports Competence subscale from the Physical Self-Description Questionnaire (PSDQ) loaded positively on to the Sport Competence construct. The three single items from Global Esteem subscale of the PSDQ loaded positively on to the Self-Esteem factor. Last, the four items from the Enjoyment subscale of the SCM loaded positively on to the Enjoyment factor. These factors thus represented greater feelings of competence in sport, higher self-esteem, and more enjoyment from sport participation.

The final construct, Intention to Continue Sport, was represented by two single items, one item addressing intention to continue and the other asking of intention to drop out. Both items loaded in the expected directions, and the factor represented the athletes' intentions to continue playing their favorite sport. All latent factors were allowed to correlate and all factor correlations were significant ($p < .05$), ranging from .32 to .82. See Table 3 for the standardized factor

loadings and standard errors of each measured variable associated with its latent factor. Overall, the fit of the final measurement model for the initial data set was good (see Table 4).

Structural Model – Sample A (Initial Data Set)

The overall fit of the structural model was good, though the fit of the model with the alternate pathway was better, $\Delta\chi^2 = 24.95$, $df = 1$, $p < .001$, and $\Delta AIC = 35.10$ (see Table 4 for specific fit information on each model). Thus, the model with the extra pathway is described.

Within the structural model with the alternative pathway, Task Goal Orientation was associated with the direct effects of the Coach-Created Task Climate (standardized parameter estimate, $\beta = .67$), which accounted for 44% of its variance. Sport Competence was associated with higher levels of Task Goal Orientation ($\beta = .58$), which accounted for 34% of the variance in Sport Competence. Self-Esteem was based on the direct effects of Task Goal Orientation ($\beta = .30$) and Sport Competence ($\beta = .66$); these variables accounted for 75% of the variance in Self-Esteem. Enjoyment was based on the direct effect of Task Goal Orientation ($\beta = .47$), which accounted for 22% of its variance. Intention was based on the direct effects of Enjoyment ($\beta = .49$), which accounted for 41% of the Intention variance (See Figure 1).

Measurement Model – Sample B (Confirmatory Data Set)

The final measurement model from Sample A was tested in Sample B. All latent factors were allowed to correlate, which ranged from .19 to .78 ($p < .05$). See Table 3 for the standardized factor loadings and standard errors of each measured variable associated with its latent factor. Overall, the fit of the final measurement model for the initial data set was good (see Table 4).

Structural Model – Sample B (Confirmatory Data Set)³

Coach-Created Task Climate ($\beta = .48$) was related directly to Task Goal Orientation and accounted for 23% of its variance. Sport Competence was based on the direct effect of Task Goal Orientation ($\beta = .61$), which accounted for 37% of its variance. Self-Esteem was based on the direct effects of Task Goal Orientation ($\beta = .26$) and Sport Competence ($\beta = .62$); these variables accounted for 65% of the variance in Self-Esteem. Enjoyment was based on the direct effect of Task Goal Orientation ($\beta = .64$), which accounted for 41% of the variance in Enjoyment. Intention was based on the direct effects of Enjoyment ($\beta = .35$) and Self-Esteem ($\beta = .35$); these variables accounted for 44% of the Intention variance (See Figure 1).

Indirect Effects – Samples A and B

Across the two samples, similar indirect effects emerged within the model. Coach-Created Task Climate was related indirectly to Sport Competence (Sample A: $\beta = .39$, 95% CI = .34 to .44; Sample B: $\beta = .29$, 95% CI = .26 to .32), Self-Esteem (Sample A: $\beta = .38$, 95% CI = .33 to .43; Sample B: $\beta = .30$, 95% CI = .26 to .34), Enjoyment (Sample A: β 's = .31, 95% CI = .28 to .34; Sample B: $\beta = .31$, 95% CI = .29 to .33), and Intention to Continue (Sample A: $\beta = .28$, 95% CI = .24 to .32; Sample B: $\beta = .24$, 95% CI = .21 to .27). Task Goal Orientation was indirectly related to Intention to Continue (Sample A: $\beta = .42$, 95% CI = .27 to .57; Sample B: $\beta = .51$, 95% CI = .30 to .72). Sport Competence was indirectly related to Intention to Continue through Self-Esteem (Sample A: $\beta = .25$, 95% CI = .17 to .33; Sample B: $\beta = .22$, 95% CI = .17 to .27).

³ This model was run with and without the participants from CO. Fit indices for the final model were nearly identical and all R^2 values were comparable. All pathways that were significant in the model with the CO students remained so even without them. Therefore, the results from the full sample of 200 participants are reported.

CHAPTER 4

DISCUSSION

The purpose of this investigation was to test a model on the relationship of male adolescents' perceptions of the motivational climate as created by coaches to task goal orientation, psychological outcomes (i.e., sport competence, self-esteem, and enjoyment), and ultimately, their intention to continue playing their main sport. This model incorporated four major lines of research in the youth sport area: (a) the importance of coach influence in defining a task-involving motivational climate for young athletes (Smith et al., 2007), (b) goal orientation, which is influenced by (and hypothesized to result from), the motivational climate (Duda, 2001; Kavussanu & Roberts, 1996; Ommundsen, Roberts, & Kavussanu, 1998; Treasure & Roberts, 1998), (c) the relationship of goal orientation to positive psychological outcomes (Cury et al., 2002; Fox et al., 1994; Kavussanu & Harnisch, 2000; Lemyre et al., 2002), and (d) the importance of these psychological outcomes in determining who continues to participate in sport (e.g., Kavussanu & Roberts, 1996; Malet, 2006; Treasure & Roberts, 1998). In addition, a pathway was proposed to explain the potential relationship between sport competence and self-esteem that is based on Harter's (1982; 1983) theory regarding the hierarchical nature of self-esteem and the influence of perceptions of sport competence on that of global self-worth.

The Coach-Created Task Climate was related significantly and positively to the boys' Task Goal Orientation, which was consistent with research and theory (e.g. Cury et al., 1996; Nicholls, 1984). For example, Cury et al. (1996) found a direct positive association between adolescent girls' perceptions of a task-involving motivational climate and their task goal orientation. Theoretically, Nicholls (1978; 1984) has suggested that the referents of effort and ability can be evaluated in the situational (motivational climate; Ames, 1992) and dispositional

(goal orientation; Nicholls, 1984; 1989) realms along the dimensions of task-mastery and ego-performance. Given the conceptual similarity between the motivational climate and goal orientation, the link between a task climate and a task goal orientation would be expected. In the current study, boys who perceived the coach of their best sport as having created a task-involving climate were likely to report a consistent self-referent orientation to sport for themselves, that is, a task goal orientation.

The effects of the perceived task-involving climate created by coaches were not just related directly to goal orientation, but extended indirectly (through goal orientation) to boys' feelings of sport competence, self-esteem, and enjoyment. Previous research (e.g., Newton & Duda, 1999; Walker, Roberts, & Harnisch, 1998) has shown a direct connection between a task-involving climate and similar psychological outcomes (e.g., enjoyment, perceived ability in sport), though these studies did not address the fact that the motivational climate may, in fact, act through the athletes' goal orientation. For example, in a sample of female high school athletes, Newton and Duda (1999) found that the athletes' perception of a task-involving motivational climate (as determined by coaches) predicted the amount of enjoyment they reported having in their sport. They also found that the athletes' task goal orientation was related to their enjoyment, though they did not test whether or not goal orientation mediated the effects of the motivational climate. Cury et al. (1996), however, did test for the mediating effects of goal orientation, and found that task goals mediated the effects of task climate perceptions on a psychological outcome (intrinsic motivation) in a sample of adolescent girls. Similarly, in the current study, the effects of the motivational climate do appear to extend through athletes' goal orientation and have direct and positive influences on different psychological outcomes as would be predicted by achievement goal theory (Nicholls, 1984).

Task Goal Orientation was related significantly and positively to perceived competence in sport, which is consistent with the idea that competence is gained through learning skills (Nicholls, 1989). Task-oriented athletes hold the belief that ability (i.e., competence) can be increased through effort and learning (Duda & Nicholls, 1992). According to Biddle (1999), when athletes view sport as an opportunity for self-improvement and developing new skills, they understand that they are the source of their success and have control over whether or not they become better players. Thus, it makes sense that task-oriented athletes, who are self-referent in their evaluations of ability and development, also would view themselves as competent in their sports. Empirically, Cury et al. (2002) found that early-teenaged boys' task-oriented goals were associated with perceptions of physical education competence and incremental (self-improvement) beliefs about sport ability.

As expected, Task Goal Orientation was related significantly and positively to Self-Esteem, which corroborates Kavussanu and Harnisch's (2000) finding that task-oriented children have high levels of esteem and are satisfied with their lives. Task-oriented athletes believe that they are the source of their successes, and it is such a self-referenced evaluative process that leads to them feeling more positively about themselves. Thus, adolescents with self-referenced standards and personal goals will have a greater sense of accomplishment because they believe that it was their efforts that led to success. When such attributions are made, favorable self-evaluations and high self-esteem are likely to follow (Baumeister, Campbell, Krueger, & Vohs, 2003).

Sport Competence also was related significantly and positively to Self-Esteem. This finding is consistent with theoretical models of self-esteem (Harter, 1982; 1983) and empirical findings (Ebbeck & Weiss, 1998), which indicate that a more global sense of self-worth or self-

esteem is determined by more specific competencies, such as a child's ability in sport. This idea suggests that being good in certain competency areas will lead to positive feelings of self.

Athletes who evaluate their sport abilities highly are likely to feel a greater sense of accomplishment and feelings of competence than those who view themselves as less capable athletically. These feelings of competence are then likely to lead to favorable overall self-evaluation and ultimately higher self-esteem.

As hypothesized, the boys' task goal orientation was related to greater enjoyment in their sport, which is consistent with previous research (Fox et al., 1994; Malete, 2006). For example, with male and female adolescents ages 12-18 years, Malete (2006) concluded that task goal orientation was associated with increased enjoyment in both recreational and competitive sports, compared to an ego goal orientation. Theoretically, task-oriented individuals are more likely than ego-oriented individuals to view challenges within achievement situations as positive experiences. In believing that they have a greater sense of control over their successes and in viewing sport as a process in which they may experience some setbacks, task-oriented athletes are likely to invest themselves in practices, enjoy competing even if they are not winning, and form close relationships with teammates, all of which lead to a greater sense of fun and enjoyment.

Regarding Intention to Continue, Enjoyment was the only one of the psychological constructs to be related significantly to the construct. As hypothesized, having more fun playing their best sport was associated with the athletes' intention to continue participating in it, specifically continuing to play that sport at a high level and being less likely to drop out in the future. This finding is consistent with research that has shown enjoyment to be the primary predictor of children's sport participation (e.g., Fox et al., 1994). As would be expected, children

want to pursue activities that they consider fun and enjoyable and drop out from those that are not. When sport environments promote the learning of new skills and putting forth effort, both of which are under the children's control, they are likely to believe they are shaping the sport experience for themselves. As Biddle (1999) has shown, children with such beliefs have more fun and are likely to stay involved in sport.

Sport Competence was not related significantly to Intention to Continue in the structural model, though the bivariate correlations amongst the measured variables representing the constructs were significant, though only small to moderate. Previous research by Reinboth & Duda (2004) has indicated that male high school students (mean age of 16.44 years) are more likely to persist in sports when they have high perceptions of their ability and sport competence. Their findings are consistent with Fredricks' and Eccles' (2002) longitudinal study that followed the same cohort of boys and girls from grades 1 through 12. They reported that boys tended to place a higher value on ability and doing well in sports than girls do, which was consistent across the course of the 12 years of the study. Based on these studies' findings (Fredricks & Eccles, 2002; Reinboth & Duda, 2004), it was expected that the male adolescents' level of sport competence would be a primary criterion for continued participation. However, it is likely that the effects of Sport Competence on Intention were attenuated by Enjoyment, which emerged as the most salient predictor of Intention in this study. The positive and significant bivariate correlations between Sport Competence and Intention indicate that the two are indeed related, though the significance of this relationship is reduced when evaluated in conjunction with Enjoyment for this age group of adolescent male athletes.

Similar to Sport Competence, Self-Esteem was unrelated significantly to Intention in the structural model, though small to moderate correlations amongst the measured variables were

found. Past research has demonstrated relationships between sport participation and self-esteem (Gadbois & Cornock, 2003; Slutzky & Simpkins, 2009) but not the reverse, suggesting that self-esteem may be more of an outcome than an antecedent. Additional research examining self-esteem as an antecedent to sport participation is needed to ascertain the directionality of the relationship. As was the case with the Sport Competence to Intention relationship, the effect of Self-Esteem on Intention was likely attenuated when it was considered simultaneously with Enjoyment.

The relative association of male adolescents' perceptions of sport competence, self-esteem, and enjoyment with intention to continue sports may be explained by their stage of sport development. Cote, Baker, and Abernethy (2003) suggested that when children are in a "sampling" stage of sport (around ages 6 to 12 years), they typically report that enjoyment is the most important factor with respect to their participation. The boys surveyed in the current study, though slightly older, still were playing multiple sports (nearly two-thirds in one sample and three-fourths in the other played two or more sports), both at their middle school and in either recreational or select leagues. Such involvement across sports probably reflects this idea of sampling and elevates the importance of having fun in determining whether or not they will continue participating.

As children get older and continue to play sports, they enter what Cote et al. (2003) have referred to as the "specialization" stage of sport (which usually occurs around 15 years old). In this stage, athletes generally devote themselves to a single sport and focus more on skill development, competency in that sport, and competition, which has implications for self-esteem given its relationship to competency beliefs. Perhaps as boys get older and select a single sport in which to specialize, their levels of competence in that sport and self-esteem are likely to play a

more significant role in their continued participation. That is, at this stage, their continued participation is less about how much “fun” they are having, but rather determined by whether or not they view themselves as skilled and competent in the sport, which is likely corroborated by coaches’ comments and by their play against opponents. Support for this idea comes from Reinboth & Duda’s (2004) study, which sampled male adolescent athletes who were, on average, 16.5 years old. These athletes were recruited from either a club team or school team in cricket or soccer, and 70% of them reported having played an organized form of that sport for five years or more. These athletes were found to (a) highly value being competent in their sport, (b) base their general esteem on their competency beliefs, and (c) report that gaining skills in their sport enabled them to continue playing. Thus, for this older group of athletes, sport competence appeared to play an important role in determining their continued involvement in their main sport. Consequently, future studies may want to examine the model from the current study with older athletes who are more fully specialized in their sport to determine the relative influence of competence and self-esteem, while still accounting for the effects of fun/enjoyment.

Overall, when male adolescents perceive that their coaches have created a task-involving motivational climate, they report having a task goal orientation. This task goal orientation, in turn, is related to the perception of being more competent in their sport, having higher self-esteem, and having more fun playing sport, which is consistent with past research (e.g., Cury et al., 2002; Fox et al., 1994; Kavussanu & Harnisch, 2000; Lemyre, et al., 2002). In the current study, the male adolescents’ intention to continue their participation in sport was explained primarily by the amount of fun they reported having. Overall, the findings provide information on how coaches and the motivational climate they create influence male adolescent athletes’ psychological states and, ultimately, their intention to continue playing their sport.

Implications for Coaches and Consultants of Coaches

Sport psychology consultants (SPCs) can work with coaches to help them learn how to behave and communicate in a manner that is consistent with a task-involving motivational climate. In other words, SPCs can teach coaches' new skills (and reinforce existing ones) in communicating and behaving in a manner consistent with promoting effort, personal improvement, cooperation with teammates, and ensuring that all athletes on a team are treated as important. Such an approach is reflected in the work of Smith et al. (2007), who developed the Mastery Approach to Coaching (MAC) to teach coaches how to promote task-oriented behaviors through emphasizing effort and personal improvement through positively reinforcing and supportive actions. Intervention programs, such as the MAC, are important because task-oriented messages help athletes view sports as a vehicle to self-improvement, personal empowerment, and the belief that success is within the athlete's control. Further, such messages would create an environment that fosters the development of positive psychological outcomes, such as sport competence, self-esteem, and enjoyment, that may support adolescents remaining involved in sport.

Because fun and enjoyment were supported as salient predictors of remaining involved in sport, SPCs could work with coaches (as well as parents and teammates) to develop practices that are fun and focus on learning and improvement. Taking this approach in youth sports may help reduce the dropout that occurs among boys (Sabo & Veliz, 2008). When boys are self-referent (i.e., seek growth and improvement in their personal goals) in their approach to sport, they are more likely to believe that they themselves are the source of their success, and thus, will have more fun and will be likely to want to stay involved (Biddle, 1999). When coaches offer encouraging and supportive instruction that is tailored to the growth and improvement of each

athlete, male adolescents are more likely to grow and flourish within sport, creating an enjoyable environment that is likely to lead to continued participation.

Limitations and Directions for Future Research

There were several limitations in this study that warrant discussion. First, data were collected exclusively via self-report, meaning that the potential for respondents to over or underreport their perceptions was a possibility. However, the participants completed the questionnaires anonymously and were separated from the coaches during their athletic periods to minimize this potential problem. In addition, only valid, reliable measures that have been used extensively in past research with youth sport participants were included. Future research could involve the coaches themselves to determine their perceptions of the sport environment they are creating (and thus supplement the self-reported perceptions of children and/or adolescents).

Second, generalizability of the findings is limited to similar groups of male youth sport participants. Although this model has been tested with similarly aged girls (Johnson, 2009), future research may want to examine its validity in samples of older male and female adolescents, particularly those who have reached the specialization stage of sport (Cote, Baker, & Abernethy, 2003). Researchers also could focus on athletes from coactive sports to see if similar coaching effects are supported.

Third, some of the constructs were represented by a single parceled indicator. Although it would be ideal to have multiple independent indicators for each construct, the reality is that doing so would have unnecessarily lengthened the questionnaire and presented the issue of participant fatigue. Thus, future studies will need to balance the ideal of having multiple indicators with the reality of surveying younger athletes and the accepted procedure of parceling measures (Weston & Gore, 2006).

Fourth, all the data for the current study were cross-sectional, thus temporal relationships among the variables could not be determined. Because this study was the first with male adolescents to consider all of these constructs simultaneously in an integrated model, a cross-sectional design was warranted (Stice, 2002). Future research, though, may want to incorporate a longitudinal design to determine the temporal relationships among the variables, in particular whether they predict actual continued participation in sport.

Fifth, only certain psychological outcomes that have been related to motivational climates, goal orientations and children's continued participation in sport were examined. Practically, the number of constructs evaluated was limited to a certain few to account for potential participant fatigue, but future research may want to include other measures, such as athletic identity, anxiety, and intrinsic motivation, to determine if they can help explain which athletes will consider continuing in sport and which ones may choose to drop out to pursue other activities.

Finally, only the effects of a task environment and a task goal-orientation were examined. Although this approach is supported by past research (e.g., Newton & Duda, 1999; Ntoumanis & Biddle, 1999; Treasure, 1997; Walker, Roberts, & Harnisch, 1998), the possible effects of ego goal orientation were not examined in the current study. In future studies, researchers may want to consider its potential influence on different psychological outcomes, such as sport competence, and the extent to which it might contribute to the prediction of athletes' intention to continue in their sport.

Conclusions

This study has provided information about the relationship of the perceived motivational climate created by coaches (i.e., emphasizing effort, personal improvement, and cooperation) to

male adolescent athletes' task goal orientation, psychological outcomes experienced in sport, and intention to continue in their best sport. There was a direct, positive relationship between the Coach-Created Task Climate and Task Goal Orientation, and the effects of the task climate carried through to the psychological outcomes, indirectly through its effect on the athletes' goal orientation. There were direct, positive relationships between Task Goal Orientation and Sport Competence, Self-Esteem, and Enjoyment. Only Enjoyment, though, was positively and directly related to Intent to Continue. This information can help researchers better understand how adolescent male athletes' goal orientations may be influenced by the motivational climate, as well as how the motivational climate's influence extends through their goal orientation.

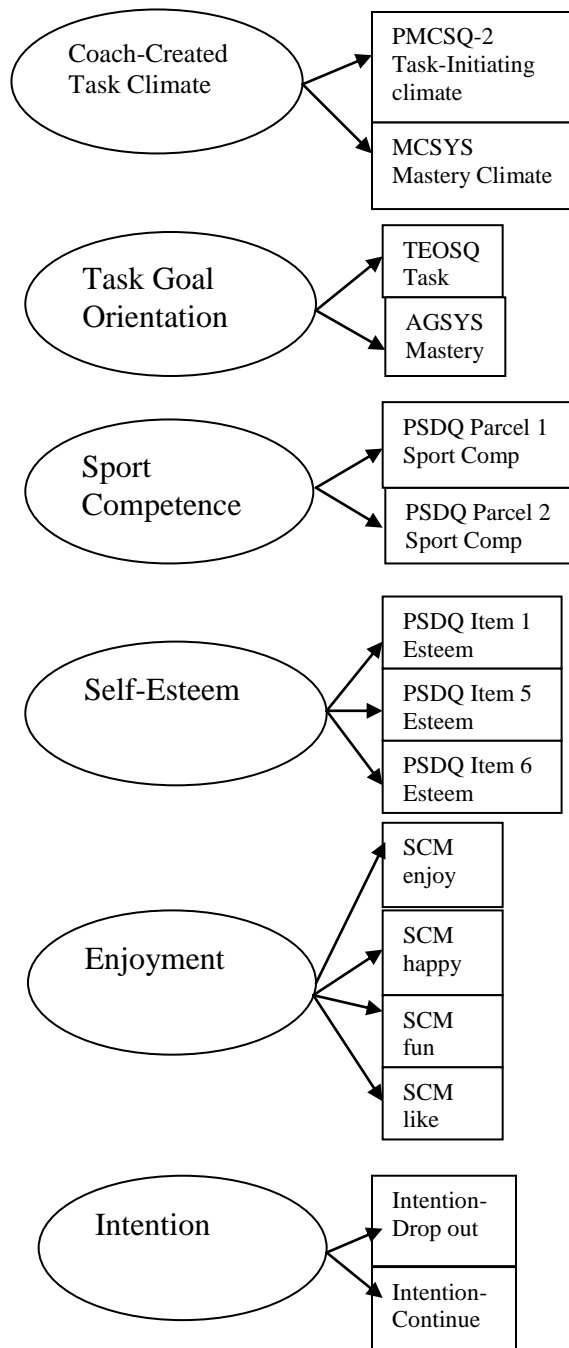


Figure 1. Diagram of the measurement model for all factors.

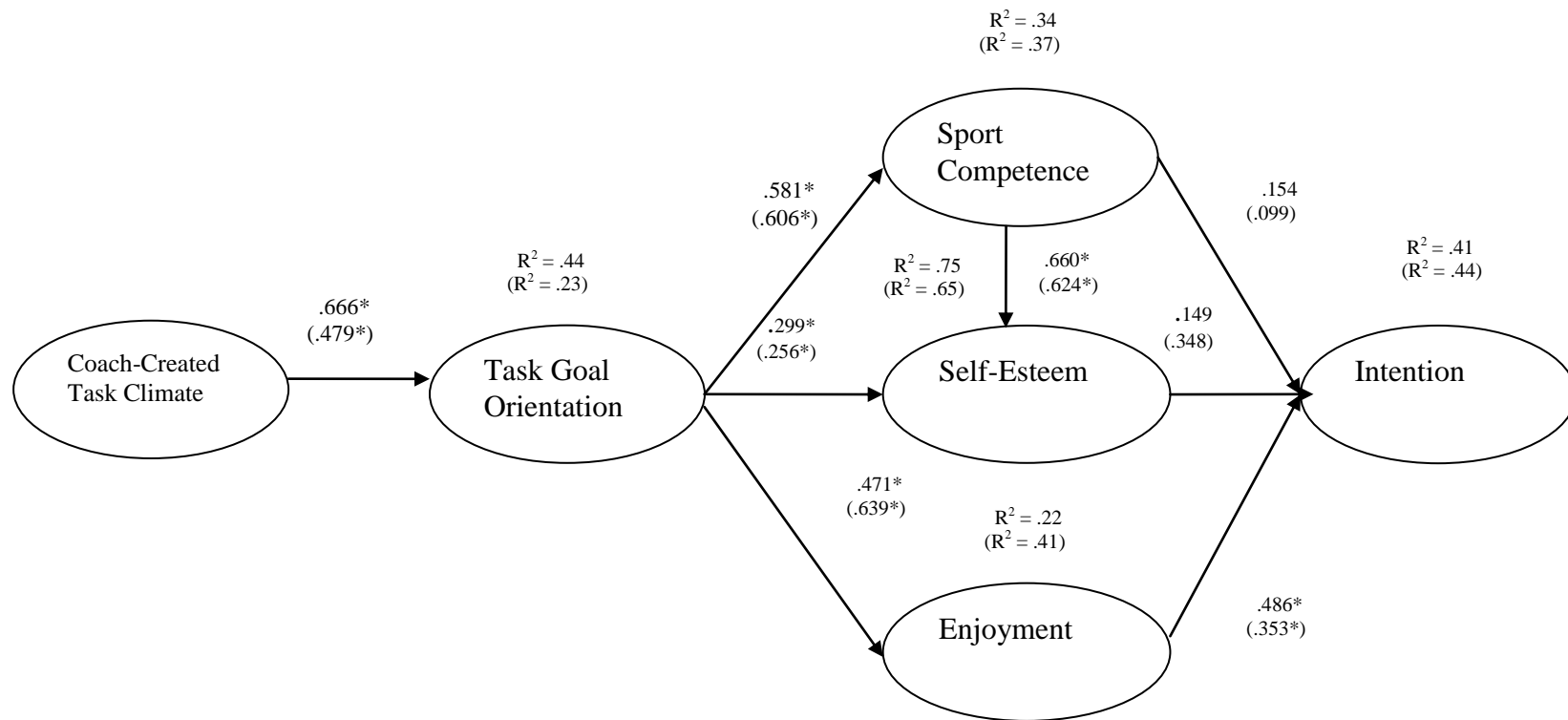


Figure 2. Diagram of structural model (with alternative pathway) with standardized parameter estimates and R^2 values for Sample A and Sample B. Sample B values are provided in parentheses. * $p < .05$.

Table 1

Correlation Matrix of Measured Variables in Sample A (n = 205) and Sample B (n = 200)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. PMCSQ-T	1	.77**	.37**	.31**	.19**	.17*	.19**	.20**	.36**	.31**	.34**	.33**	.29**	.19**	.11
2. MCSYS-M	.82**	1	.31**	.32**	.12	.07	.16*	.13	.26**	.28**	.31**	.31**	.27**	.15*	.09
3. TEOSQ-T	.49**	.41**	1	.60**	.38**	.33**	.35**	.30**	.32**	.44**	.44**	.38**	.36**	.34**	.33**
4. AGSYS-M	.48**	.38**	.65**	1	.45**	.44**	.39**	.34**	.46**	.50**	.45**	.45**	.41**	.46**	.47**
5. PSDQ-SC	.38**	.35**	.35**	.37**	1	.85**	.63**	.60**	.52**	.46**	.49**	.43**	.48**	.32**	.43**
6. PSDQ-SC	.38**	.32**	.36**	.42**	.82**	1	.53**	.54**	.45**	.43**	.43**	.38**	.43**	.33**	.43**
7. PSDQ-GE	.28**	.22**	.25**	.21**	.58**	.59**	1	.62**	.48**	.28**	.31**	.29**	.24**	.30**	.32**
8. PSDQ-GE	.31**	.26**	.37**	.27**	.48**	.41**	.39**	1	.62**	.23**	.26**	.22**	.22**	.30**	.31**
9. PSDQ-GE	.44**	.41**	.37**	.30**	.51**	.39**	.34**	.54**	1	.37**	.39**	.41**	.36**	.36**	.39**
10. SCM-E	.28**	.30**	.28**	.28**	.48**	.43**	.27**	.32**	.42**	1	.90**	.89**	.81**	.43**	.47**
11. SCM-H	.30**	.30**	.30**	.28**	.43**	.39**	.26**	.30**	.38*	.88**	1	.88**	.91**	.40**	.40**
12. SCM-F	.30**	.30**	.27**	.29**	.46**	.40**	.26**	.30**	.39**	.92**	.87**	1	.88**	.41**	.39**
13. SCM-L	.26**	.28**	.29**	.31**	.47**	.42**	.25**	.31**	.38**	.84**	.91**	.80**	1	.35**	.35**
14. INT-C	.28**	.24**	.25**	.26**	.42**	.33**	.20**	.29**	.35**	.47**	.45**	.51**	.47**	1	.60**
15. INT-D	.21**	.16*	.17*	.26**	.36**	.35**	.24**	.25**	.22**	.45**	.46**	.47**	.46**	.65**	1

Note. Sample A correlations are shown below the diagonal and Sample B above the diagonal. PMCSQ-T= Perceived Motivational Climate Scale Questionnaire-2-Task-Involving Climate; MCSYS-M = Motivational Climate Scale for Youth Sports - Mastery Climate; TEOSQ-T = Task and Ego Orientation in Sport Questionnaire –Task Orientation; AGSYS-M = Achievement Goal Scale for Youth Sports – Mastery Orientation; PSDQ-SC= Physical Self-Description Questionnaire – Sport Competence; PSDQ-GE= Physical Self-Description Questionnaire – Global Esteem; SCM-E= Sport Commitment Model – Enjoy; SCM-H= Sport Commitment Model – Happy; SCM-F= Sport Commitment Model – Fun; SCM-L= Sport Commitment Model – Like; INT-C= Intention to Continue – Continue Sport; INT-D= Intention to Continue – Drop Out of Sport

*. Correlation is significant at the .05 level (2-tailed). **. Correlation is significant at the .01 level (2-tailed).

Table 2

Descriptive Statistics for Measured Variables, N = 205 and N = 200

Variable	No. Items	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	Internal Consistency
1. PMCSQ-T	5	4.17 (4.37)	0.73 (0.64)	-1.11 (-1.47)	1.55 (3.55)	.95 (.95)
2. MCSYS-M	4	4.18 (4.43)	0.82 (0.69)	-1.20 (-1.29)	1.38 (1.54)	.90 (.90)
3. TEOSQ-T	7	4.32 (4.40)	0.67 (0.62)	-1.03 (-0.98)	0.77 (0.66)	.90 (.89)
4. AGSYS-M	6	4.49 (4.62)	0.62 (0.53)	-1.39 (-1.57)	1.49 (2.17)	.88 (.85)
5. PSDQ-SC 1	3	4.92 (5.11)	1.03 (1.04)	-0.76 (-1.12)	-0.02 (0.29)	.83 (.92)
6. PSDQ-SC 2	3	4.75 (4.86)	1.00 (1.04)	-0.68 (-1.01)	0.13 (0.67)	.78 (.79)
7. PSDQ-GE 1	1	4.81 (4.81)	1.26 (1.25)	-0.98 (-1.00)	0.42 (0.55)	* (*)
8. PSDQ-GE 2	1	4.73 (4.88)	1.28 (1.13)	-1.00 (-0.92)	0.69 (0.64)	* (*)
9. PSDQ-GE 3	1	5.10 (5.15)	1.22 (1.20)	-1.61 (-1.46)	2.41 (1.66)	* (*)
10. SCM-E	1	4.64 (4.72)	0.77 (0.67)	-2.38 (-2.77)	5.42 (8.39)	* (*)
11. SCM-H	1	4.62 (4.69)	0.77 (0.75)	-2.09 (2.99)	4.79 (9.79)	* (*)
12. SCM-F	1	4.63 (4.73)	0.76 (0.68)	-2.17 (-3.12)	4.03 (10.93)	* (*)
13. SCM-L	1	4.70 (4.73)	0.70 (0.72)	-2.43 (-3.12)	5.17 (10.28)	* (*)
14. INT-C	1	5.79 (5.74)	1.63 (1.80)	-1.34 (-1.22)	0.98 (0.25)	* (*)
15. INT-D	1	5.84 (6.07)	1.57 (1.40)	-1.20 (-1.55)	0.55 (1.92)	* (*)

Note. Sample B values noted parenthetically. PMCSQ-M = Perceived Motivational Climate in Sport Questionnaire – Task-Involving Climate (perception of coach as fostering task-oriented climate: scores range from 1[low perceived task-climate] to 5[high perceived task climate]); MCSYS-M = Motivational Climate Scale for Youth Sports– Mastery Climate (perception of coach as fostering mastery climate: scores range from 1[low perceived mastery climate] to 5[high perceived mastery climate]); TEOSQ-T = Task and Ego Orientation in Sport Questionnaire –Task Orientation (developing competence, along with personal improvement related to skill mastery, and a self-referenced set of standards: scores range from 1[low task orientation] to 5[high task orientation]); AGSYS-M = Achievement Goal Scale for Youth Sports –Mastery Orientation (personal improvement related to skill mastery): scores range from 1[low mastery orientation] to 5[high mastery orientation]); PSDQ-SC= Physical Self-Description Questionnaire – Sport Competence (perceived ability in sport: scores range from 1[low perceived ability] to 6[high perceived ability]); PSDQ-GE= Physical Self-Description Questionnaire – Global Esteem (overall positive feelings about oneself and perceptions of self-worth: scores range from 1[low positive feelings] to 6[high positive feelings]); SCM-E= Sport Commitment Model – Enjoy (enjoying playing best sport: scores range from 1[low enjoyment] to 5[high enjoyment]); SCM-H= Sport Commitment Model – Happy (level of happiness playing best sport: scores range from 1[low happiness] to 5[high happiness]); SCM-F= Sport Commitment Model – Fun (amount of fun experienced playing best sport: scores range from 1[low levels of fun] to 5[high levels of fun]); SCM-L= Sport Commitment Model – Like (degree to which respondent likes playing best sport: scores range from 1[low degree of liking] to 6[high degree of liking]); INT-C= Intention to Continue – Continue Sport (intention to continue sport at high level: scores range from 1[low intention] to 7[high intention]); INT-D= Intention to Continue – Drop out (intention to drop out of sport in three years: scores range from 1[low intention] to 7[high intention]).

*Because represented by a single item, these variables cannot have an internal consistency value.

Table 3

Standardized Parameter Estimates for the Measurement Model

Latent Variables	Observed Variables	Factor Loadings: Sample A	Standard Error: Sample A	Factor Loadings: Sample B	Standard Error: Sample B
Coach-Created Task Climate	PMCSQ-T	.973	.037	.894	.045
	MCSYS-M	.844	.047	.865	.048
Task Goal Orientation	TEOSQ-T	.807	.046	.711	.042
	AGSYS-M	.801	.042	.841	.036
Sport Competence	PSDQ-SC 1	.956	.057	.893	.059
	PSDQ-SC 2	.857	.059	.911	.059
Self-Esteem	PSDQ-GE 1	.620	.088	.752	.081
	PSDQ-GE 2	.653	.088	.813	.071
	PSDQ-GE 3	.690	.083	.718	.079
Enjoyment	SCM-E	.942	.040	.926	.036
	SCM-H	.951	.040	.964	.039
	SCM-F	.928	.040	.933	.036
	SCM-L	.909	.038	.925	.039
Intention	INT-C	.775	.108	.802	.098
	INT-D	.835	.112	.745	.126

Note. PMCSQ-T = Perceived Motivational Climate in Sport Questionnaire – Task-Involving Climate; MCSYS-M= Motivational Climate Scale for Youth Sports –Mastery Climate; PSDQ-SC= Physical Self-Description Questionnaire – Sport Competence; PSDQ-GE= Physical Self-Description Questionnaire – Global Esteem; SCM-E= Sport Commitment Model – Enjoy; SCM-H= Sport Commitment Model – Happy; SCM-F= Sport Commitment Model – Fun; SCM-L= Sport Commitment Model – Like; INT-C= Intention to Continue – Continue Sport; INT-D= Intention to Continue – Drop Out of Sport

Table 4

Model Fit and Comparison (Sample A = 205; Sample B = 200)

Model	<i>Df</i>	χ^2	NNFI	CFI	AIC	RMSEA (90% CI)
Sample A						
Measurement Model	76	129.93**	.971	.979	-22.07	.059(.041 - .076)
Structural Model W/Out Alternate Path	84	174.40**	.958	.967	6.40	.073(.057 - .088)
Structural Model W/Alternate Path	83	149.45**	.967	.974	-16.55	.063 (.046 - .078)
Sample B						
Measurement Model	76	123.50**	.944	.960	-28.50	.056 (.037 - .073)
Structural Model W/Alternate Path	83	146.47**	.936	.950	-19.53	.062 (.045- .078)

Note. *Df* = Degrees of Freedom; χ^2 = chi square (significant values suggest that the model does not fit the data); NNFI = Non-Normed Fit Index (> .95 indicates good fit); CFI = Comparative Fit Index (> .90 indicates good fit); AIC = Akaike Information Criterion (lower values indicate good fit); RMSEA = Root Mean Square Error of Approximation (<.06 indicates good fit); 90% CI = 90% Confidence Interval.

**= $p < .001$.

Table 5

Take-Away Messages for Coaches

Coaches, these are things that you would want to emphasize to create a supportive environment for your young athletes that will keep them playing sports.

1. Make the experience fun!
 2. Involve all of the kids on the team in practices and competitions.
 3. Encourage the kids to work together and cooperate with each other to get better.
 4. Promote that the kids put forth effort to personally improve.
 5. Reward kids for trying hard.
 6. Make each athlete feel like an important team member.
 7. Offer the kids positive and encouraging messages.
 8. Give the kids clear instructions on how to complete a skill or correct a mistake.
 9. Place each child in situations that reinforce his/her own strengths and abilities.
 10. Remember that the experience belongs to the children and should serve their purposes.
-

APPENDIX A
REVIEW OF THE LITERATURE

Youth sport environments can positively influence the psychological development of children and adolescents, including increased sport/athletic competence, self-esteem, and enjoyment (e.g., Kavussanu & Roberts, 1996; Malete, 2006; Treasure & Roberts, 1998). Given the large growth of youth sport programs in the United States (see Berryman, 1996 for a review), such psychological benefits have certainly been recognized for their contribution to the overall development of youth. Despite these benefits, the reality is that many youth sport participants discontinue participation during adolescence, a major identity development period. For instance, many children drop out of sport at age 13 (Ewing & Seefeldt, 2002), and 67% of athletes between the ages of 7 and 18 years old drop out of sports (Petlichkoff, 1996). The subsequent lack of physical activity is the main contributor to obesity in 11- to 15-year-olds (Patrick, et al., 2004).

Significant figures in a child's life, such as parents, coaches, and teammates/friends, have the chance to influence positively how children learn and grow through achievement situations. Studies have demonstrated that children are likely to adopt the orientation toward achievement situations that significant figures in their lives adopt (e.g., Duda & Horn, 1993; Waldron & Krane, 2005). For example, if a significant figure in a child's life believes that the child can meet a challenge by putting forth effort, the child would likely adopt the same belief. Unfortunately, the impact significant figures have on children is not always positive. Sometimes children will receive negative messages about themselves, competition, and their abilities that may decrease their enjoyment in sport and increase the chances they will drop out (Smoll & Smith, 2002).

Parents, coaches, and peers/teammates all influence children's perceptions of the youth sport environment (e.g., Smith, Smoll, & Cumming, 2007; Vazou, Ntoumanis, & Duda, 2006; White, 1998). Parental influences on children's psychological development has been found to be

strongest during early and middle childhood (i.e., until around eight years of age), and following this period, children begin to place more emphasis on peer informational sources (Brustad & Partridge, 2002). Brustad and Partridge explained that in early childhood, children spend a large amount of time within the familial environment, lack the social network to extend their social interactions outside the family, and that their cognitive ability to assess personal competency is mainly parent-referenced. As Brustad and Partridge noted, as children develop the capacity to integrate competency information obtained from sources outside of the primary family unit, they are likely to place more emphasis on peer informational sources. This learning culminates during late childhood-early adolescence (i.e., age 10-15) when children begin to develop the need to connect with peers while become increasingly independent from their parents (Damon, 1983; Ruble & Goodrow, 1998). This developmental conflict coincides with the nature of sport, in that as children become older, they are exposed to a greater number of opportunities to cooperate and compete against other youth.

Along with parental and peer influences within the youth sport environment, it is important to consider the coach as well, given that coaches are consistent figures in a child's life when they play sports and have considerable power over children's opportunities to play. The coach plays a central role in the setting and evaluation of performance standards in sport (Krane, Greenleaf, & Snow, 1997). Coaches teach children skills that allow them to continue to participate and improve in their sport. Smith and Smoll (2002) suggested that coaches communicate with children in three ways: (1) through their interpersonal behaviors (e.g., listening, mode of communication), (2) through the values and attitudes they transmit verbally and through example (e.g., coach works hard and verbalizes the merit of this), and (3) in the goal priorities they establish (e.g., emphasis on winning or improvement). Given the potential effects

of their communications, examining how coaches' messages and the environments they establish may influence children is a worthwhile endeavor. Thus, the purpose of this study is to explore how coach-created motivational environments are related to various psychosocial outcomes and ultimately children's intention to remain involved in sport. In the sections that follow, achievement-related messages from coaches will be defined and discussed using achievement motivation theory, psychological outcomes associated with achievement motivation will be examined, and the effect psychological outcomes have on the intention to continue sport participation will be explored. In addition, developmental and gender considerations will be addressed.

Coaching Messages and Achievement Motivation

It was previously mentioned that children likely adopt a similar orientation to achievement situations as significant others in their lives; this idea forms the basis of achievement motivation theory. Achievement motivation theory posits that intentional behavior in competitive situations is directed at developing or demonstrating high rather than low ability (Nicholls, 1984). There are two referents to which individuals can judge their ability. First, ability can be gauged with reference to individuals' past performance or knowledge. In this case, gains in self-referenced mastery indicate higher competence. An example of ability being judged in this context occurs when sport performers determine that they have developed a more efficient and technically sound execution of a skill compared to previous attempts they have made in practice or competition. Second, ability can be evaluated based on performance relative to others. Being able to achieve more than another with equal effort or achieve as much as another with less effort indicates higher competence. An example of ability being judged in this way occurs when sport performers win competitions or score more points than an opponent. In both cases,

the perception of competence (or ability) leads to an intentional behavior that represents performers' motivation in achievement situations.

Achievement motivation can be considered both a situational (environmental; Ames, 1992) and a dispositional (personal; Nicholls, 1989) influence. That is, the referent to which ability is evaluated can originate from situationally-based messages or can be rooted in messages about achievement that have been internalized and valued by the individual. Nicholls (1989) described achievement motivation as being dependent upon three elements: situation (later defined as the motivational climate), disposition (later defined as goal orientation), and developmental differences in the capacity to differentiate between effort and ability. As such, this review will focus on the situational messages received by athletes, the internalization of such messages into a personalized achievement orientation, and age and gender-related considerations related to the development of achievement motivation, presented in this order.

Motivational Climate

Motivational climate refers to perceptions of situational cues and expectations of significant others that encourage the development of particular goal orientations, and at any time, induce a certain goal involvement state (Ames, 1992). Ames (1992) identified two types of motivational climates: task-involving (encourages effort and rewards task mastery and individual improvement) and ego-involving (fosters social comparison and emphasizes normative ability). In a task-involving climate, individuals derive satisfaction from personal progress and perceive that significant others emphasize personal skill improvement and regard errors as part of learning. In an ego-involving climate, the emphasis is on interpersonal comparison, the demonstration of normative superiority, and competition with teammates. The motivational climate fosters a form of achievement behavior in the young person. It is expected that messages

youth receive from the motivational climate would influence what aspects of sport and performance they emphasize. For example, a coach who sends messages pertaining to personal improvement in sport would likely foster a belief in the importance of personal improvement for her athletes; as a result, her athletes engage in behaviors that lead to personal growth within their sport.

Despite the large amount of research dedicated to achievement motivation and its influence on youth sport participation, there is a need to define the motivational climate more specifically through deconstruction (Keegan, Harwood, Spray, & Lavallee, 2009); that is, what coaching behaviors define or determine the motivational climate and how do children internalize them? A major area of study in this regard began with the work of Ron Smith and Frank Smoll and their classification of spontaneous and reactive coaching behaviors (Smith, Smoll, & Hunt, 1977; Smith, et al., 1978; Curtis, Smith, and Smoll, 1979). The behavioral categories were obtained through content analysis of audiotaped reports of coaches' actions in practices and games. Once types of behaviors were identified, researchers were able to examine the impact of these behaviors on various outcomes (notably, psychological outcomes, such as self-esteem and anxiety) using an observation system. Eventually, questionnaires were developed and refined, such as the Motivational Climate Scale for Youth Sports (MCSYS; Smith, Cumming, & Smoll, 2008), Perceived Motivational Climate in Sport Questionnaire (Newton, Duda, & Chi, 2000; Seifriz, Duda, & Chi, 1992), Coaching Behavior Questionnaire (CBQ; Williams, 2003; Kenow & Williams, 1992) Coaching Feedback Questionnaire (CFQ; Amorose & Horn, 2000), which allowed researchers to explore athletes' perceptions of coaching behaviors and the impact of these perceptions on outcomes (e.g., self-esteem or competence). These developments in the measurement of motivational climate and coaching behaviors were combined to explore how

athletes' perceptions of particular coaching behaviors were related to their perceptions of the motivational climate (Smith, Worthington, Fry, & Li, 2005).

The messages sent by coaches to their athletes can be examined best through coaching behaviors. As part of their Coach Effectiveness Training (CET), Smith, Smoll, and Hunt (1977) developed the Coaching Behavior Assessment System (CBAS) as the first step in defining the types of coach behaviors that impact young athletes as well as explaining the mediational model of leadership. Smith, Smoll, and Cumming (2007) noted that although the CBAS was developed prior to the emergence of achievement goal theory and subsequent studies of goal orientation and motivational climate, several CET guidelines are consistent with the features of a mastery motivational climate. They reported that CET guidelines promote a focus on furthering the skill and personal development of athletes over an emphasis on winning, as well as the reinforcement of effort (as well as outcome) and a cooperative learning environment. In addition, CET promotes positive behavioral interactions among coaches and athletes, while encouraging personal control and improvement. The CET also places an emphasis on having fun, which can help explain what leads young athletes to persist in sport. All of these outcomes on which the CET is based are addressed on questionnaires that assess for perceptions of a task-oriented motivational climate (e.g., PMCSQ-2, MCSYS).

Research involving the use of CET and the CBAS has implications as to how coaches can influence children's perceptions of self-esteem, athletic competence, enjoyment, and attrition in sports. Athletes whose coaches were trained using the CBAS system (i.e., trained to offer positive reinforcement, mistake-contingent encouragement, positive and encouraging corrective instruction, and technical instruction behaviors) reported less performance anxiety (Smith, Smoll, & Barnett, 1995) and higher self-esteem (Smoll, et al., 1993). The CBAS also was used

by Wong and Bridges (1995) to test their model of coaching behaviors, which suggested that coaching behaviors influenced perceived control, and consequently, perceived competence. The success of the CBAS in helping them explain their model suggests that CBAS-delineated behaviors are effective predictors of perceived competence outcomes. Additionally, those athletes playing for CBAS-trained coaches reported greater enjoyment during the season and motivation to play the sport in general (Smith, Smoll, & Barnett, 1995; Smith, Smoll, & Curtis, 1979). Finally, those athletes were more likely to continue their participation in that sport. Taken together, these findings suggest that the CBAS behavioral system is useful in predicting psychological well-being (e.g., self-esteem, freedom from anxiety), athletic/sport competence outcomes, enjoyment, internal motivation, and intention to continue for youth sport participants.

Smith, Smoll, and Cumming (2007) developed a mastery-approach to coaching (MAC) intervention as an effort to better describe and provide behavioral guidelines for coaches to create a task-involving motivational climate for their athletes. The MAC consisted of a didactic workshop that emphasized two major themes. First, consistent with Smoll and Smith's (2002) findings, positive, as opposed to aversive, control of behavior was emphasized. Coaches were advised to engage in positive reinforcement, mistake-contingent encouragement, corrective instruction given positively and with encouragement, and technical instruction. Coaches were advised not to use non-reinforcement of positive behaviors and effort, and mistake-contingent punishment. Second, coaches were asked to define success as giving maximum effort rather than winning or outperforming others. The authors used procedures designed by Ames (1992) and Epstein (1988) as the basis for the intervention. These procedures included use of role-play to model desirable and undesirable responses to specific situations, including player mistakes and periods in which effort and use of mastery goals needed to be reinforced. Accompanying the

workshop was a booklet that included information on the development of task and ego-involving environments, including the differences between them, as well as self-monitoring forms that allowed coaches to evaluate their use of the behavioral guidelines. Smith, Smoll, and Cumming's (2007) first test of the MAC was successful; athletes aged 10-14 years on teams with trained coaches reported reductions in anxiety preseason to postseason. The development of the MAC and its positive results provide an interesting avenue for further exploration, as research continues to further define how specific coaching behaviors, particularly those that would be found in task-involving environments, influence the motivational climate.

In addition to Smith, Smoll, and colleagues' work (Smith, Smoll, & Barnett, 1995; Smith, Smoll, & Cumming 2007; Smith, Smoll, & Curtis, 1979), Duda and Pensgaard (2002) identified an "adaptive achievement pattern" that, if emphasized by coaches, was hypothesized to lead to positive psychological outcomes. The pattern promotes task oriented goals, although similar outcomes would be expected if the athletes were ego oriented and perceived their sport competence as being high (Duda & Pensgaard, 2002). Adaptive outcomes for athletes include: (1) feeling engaged in training (to which they would attend even non-mandatory practices), (2) giving best effort in training and competitions, (3) exhibiting persistence even when things are not going well, (4) selecting optimally challenging sport activities and opponents (coaches obviously do the bulk of this for youth sport participants), (5) performing to potential on a consistent basis, and (6) continually working on improving different facets of performance. Coaches can model these points of emphasis through their behaviors. All of these outcomes relate to a task-oriented environment, particularly as defined by the three subscales of the Task scale on the Perceived Motivational Climate in Sports Questionnaire (PMCSQ-2; Newton, Duda, & Yin, 2000): Cooperative Learning (coach emphasizes working together as leading to success),

Task Effort and Improvement (coach reinforces personal improvement and effort), and Important Role (coach's belief that each member has an important role on the team).

Conversely, the outcomes that occur in ego environments are inconsistent with Duda and Pensgaard's (2002) adaptive achievement pattern: (1) holding back effort in competition or training, (2) experiencing performance impairment due to believing a lack of competence, (3) choosing sport-related challenges that are much too difficult (so that the performer does not feel bad losing) or too easy (in an attempt to "guarantee" success), and (4) dropping out of sport due to diminished commitment and perceived competence. Duda and Balaguer (2007) noted that these outcomes apply only for those individuals that believe they lack competence in the sport in which they are participating, and that ego oriented athletes with high perceived sport competence are likely to experience similar positive outcomes that emerge from task-involving environments. As such, several coach behaviors may foster the belief of diminished sport competence, particularly as defined by the three subscales of the Ego scale on the Perceived Motivational Climate in Sports Questionnaire (PMCSQ-2; Newton, Duda, & Yin, 2000): Punishment for Mistakes (coach punishes mistakes and believes they are an impediment to success), Unequal Recognition (coach's belief that only certain members of the team have an important role), and Intra-Team Member Rivalry (coach emphasizes competition within the team as leading to success). These three behavioral domains are likely to lead to youth questioning their abilities, in that emphasis is placed on an unfavorable outcome (e.g., mistakes, being outperformed by a teammate, being considered an unimportant contributor to the team). As such, youth are more likely to avoid achievement situations that could potentially benefit them in terms of gaining skills, feeling good about themselves, and having a pleasurable experience. Ultimately, ego-involving environments are expected to have detrimental effects on children's perceptions of

ability, as opposed to task-involving environments that are expected to enhance perceptions of ability (Newton & Duda, 1999). Thus, if coaches initiate the formation of task-involving environments, it is likely to lead to a variety of positive outcomes, which will be reviewed later.

Goal Orientation

Thus far, the literature review has focused on situational elements (coaching messages in particular) and their influence on the youth sport environment. Another important area of research has focused on dispositional factors (i.e., personal factors regarding achievement situations) that have formed from the influences the youth sport environment through the internalization of achievement-related messages. This internalization of messages forms the basis of an individual's achievement goal orientation, a dispositional construct that represents the link between an individual's intentional behavior and achievement motivation (Duda & Nicholls, 1992; Nicholls, 1984; 1989). A person's goal orientation is a cognitive framework that defines how they will respond in achievement situations and, like motivational climate, can be defined as task (internal standards) or ego (external standards). According to Nicholls (1984), individuals develop a goal orientation based on preferences of task choice, past performance, and their subjective experiences. In other words, children interpret achievement events based on whether they choose to evaluate their performances based upon internal (self-defined standards) or external standards (defined by others, particularly opponents), past successes/failures, and how they have interpreted their own achievement-related experiences. The result is an intentional behavior that is a rational attempt to attain goals or incentives. Goal-directed actions focus on the demonstration of competence and the avoidance of showing incompetence (Nicholls, 1989). These actions explain how individuals approach and engage in tasks (i.e., behave) based upon their interpretations of achievement events. The conceptual similarity between goal orientation

and motivational climate explains why early motivational climate studies, which used measures of goal orientation, could be considered a proxy for goal orientation studies that followed as that construct became better defined in the literature.

Task goal orientation refers to thoughts and behaviors that are focused on improving skill competence (Nicholls, 1984, 1989). Task oriented individuals usually will take on challenges because they perceive the challenge as a positive experience that will help them learn and ultimately master the task. The standards that these individuals set are personal, self-based, long-term, and flexible (Ames, 1992; Dweck & Elliot, 1983; Grant & Dweck, 2003). Their behaviors are constructive (serve a beneficial purpose) and they are likely to exhibit adaptive learning patterns (Ames & Archer, 1988; Dweck, 1986; Dweck & Leggett, 1988). For example, if children believe that challenges will serve the beneficial purpose of helping them improve mastery of a skill, then they will view the experience as positive and would approach the opportunity to learn constructively. Ultimately, exerting maximum effort is the key to demonstrating maximum ability. This belief often leads to increases in self-efficacy in completing a given task, a decrease in performance worry, and an increase in team satisfaction (Walling, Duda, & Chi, 1993), among other positive outcomes. These outcomes are expected to occur because exerting effort is in the athlete's control, which can lead to increased confidence and interest.

Ego goal orientation refers to thoughts and behaviors that protect self-image and fosters the appearance of competence (Nicholls, 1989). Ego oriented individuals usually will not take on difficult challenges that they might fail and that would be a negative experience that could potentially lower their esteem. The standards that these individuals set are focused on others, normative, short-term, and rigid (Ames, 1992; Dweck & Elliot, 1983; Grant & Dweck, 2003).

These individuals are less likely to exhibit more adaptive learning patterns than task-oriented individuals (Ames & Archer, 1988; Dweck, 1986; Dweck & Leggett, 1988). For example, if children perceive the challenge as one in which they might fail, they may avoid the task, as well as other difficult challenges they may face. Additionally, in rigidly avoiding these tasks, ego protection becomes the focus over learning new skills. Ultimately, exceeding the performances of comparative others is the key to demonstrating maximum ability. This belief that they must be better than others often leads to decreases in self-efficacy, increases in performance worry, and decreases in team satisfaction (Walling, Duda, & Chi, 1993). Outcomes such as these would be expected because success (i.e., performing better than others) is outside of athletes' control, which can lead to worry and disinterest.

Goal orientations are intertwined with people's beliefs about the causes of success (Nicholls, 1989; Duda & Nicholls, 1992). The idea of task and ego orientations is analogous to beliefs individuals hold about intelligence and ability as a fixed (ego orientation) or an incremental (task) construct. The latter view also leads to beliefs that intelligence/ability can be increased through effort, learning, etc. Modeling behaviors of coaches can influence an athlete's values and beliefs regarding the exertion of effort (task) or the level of ability (ego) as being an indicator of success. Athletes' subjective bases of success comprise their personal theories of sport achievement (Nicholls, 1989). An interesting contributor to the patterns associated with task and ego goals of motivation appears to lie in the source of control (Biddle, 1999). For those children who endorse task goals, their belief may be that success lies within them, and that they can point to any aspect of the performance (including, but not limited to, the outcome), which allows them greater opportunity to evaluate their performance based on an outcome within their control. In contrast, when evaluating personal achievement, children who endorse ego goals are

expected to rely on facets of performance that lie outside of their control, thereby limiting their judgments of competence to their performance relative to others.

In summary, achievement motivation can be viewed as both situational (motivational climate) and dispositional constructs. Both ideas are conceptually similar in that there is either a self- (task) or other-referent (ego) to ability. That is, the task-involving environment and orientation emphasizes personal improvement, cooperative learning, involvement of all members of a team, and display of effort, whereas the ego-involving environment and orientation stresses proving talent, intra- and inter-team competition, involvement on the most skilled (regardless of effort displayed), and display of ability. Goal orientation is the internalization of messages received via the motivational climate, which is created by coaches through their messages and behaviors regarding achievement. Youth participants make idiosyncratic meaning from these messages, which has implications for how they conceptualize success (e.g., as fixed/incremental, as defined by self/others, as within/outside of their control) and behave in achievement situations. Due to the conceptual similarity between motivational climate and goal orientation, it is worthwhile to explore a possible relationship between the two constructs.

Achievement Motivation: Developmental Considerations

According to Nicholls (1978), task involvement is considered an undifferentiated conception of ability, meaning that the individual construes ability to be contingent upon (therefore, undifferentiated from) the amount of effort exerted. Simply put, an undifferentiated view of achievement is based on the idea that those who levy the most effort have the greatest ability. In the academic realm, Nicholls (1978) determined that younger children are naturally task oriented because they are incapable of developing a more mature (i.e., differentiated) concept of ability. That is, he determined that a more mature conception of ability occurs when

effort is distinguished from ability, chance is differentiated from skill, and that tasks differ in difficulty based on how many people can successfully complete the task. As children reach the adolescent years, their thinking would become less tautological (i.e., the very different concepts of effort and ability were described singularly) and more differentiated. This developmental process was based on the Piagetian structural method, meaning that it was closed and hierarchical in nature (progression would occur based on passage through four levels of increasing differentiation). Nicholls (1992) believed that this developmental process would extend outside of the academic realm and would be found in other domains, including sport/physical activity. Fry and Duda (1997) replicated Nicholls's (1978) early work using a sport-related intervention and found support for Nicholls's findings in the physical domain. They found a strong relationship between age and children's understanding of effort and ability in the physical context. However, their findings also revealed considerable variability across age groups, suggesting that cognitive level, as opposed to chronological age, may represent this association more accurately. When introducing a similar task in the academic domain and comparing results to that of the physical context, Fry and Duda (1997) found that children of younger ages (even as young as seven-years-old) tended to reflect greater differentiation in the physical domain compared to the academic domain.

Differentiation of effort and ability allows for the development of goal orientation. As children begin to develop a mature conception of ability, their achievement motivation may shift from the task-oriented "default" to an ego oriented conception or remain task-oriented. Often, the messages that are levied from significant others in children's lives influence whether a shift occurs. Additionally, children could be equally task and ego-oriented, reflecting the orthogonal nature of the construct. Based on results from his experiential study in 1978 and subsequent

replications, Nicholls (1989) postulated that children below the age of 11 do not make the effort/ability distinction. However, it was not until Fry and Duda's (1997) study that the investigation was conducted using a physical activity as the experiential task, and as aforementioned, the results suggested that differentiation may occur earlier when tasks lie in the physical domain. Using Fisher's exact test on Fry and Duda's data, Smith, Cumming, and Smoll (2008) determined that 9 and 11-year-old children do not differ significantly in their capacity to understand the effort/ability distinction. These findings suggest that goal orientation may begin to truly form during late childhood (into the pre-teen years) and early adolescence (teenage years), but because of the cognitive implications involved in the formation of goal orientation, this process is highly individualized and varies greatly among these age groups.

Achievement Motivation: Gender Considerations

The aforementioned study by Fry and Duda (1997) reported no significant gender differences [consistent with Nicholls's (1978) original study], suggesting that both boys and girls are similar in their progression through the development of their goal orientations. Still, research has demonstrated that boys tend to report on measures of goal orientation (e.g., Task and Ego Orientation in Sport Questionnaire) that they are more ego oriented than girls, especially as they get older (Duda & Whitehead, 1998). Using the normative group of the TEOSQ, White and Duda (1994) found that males were higher in ego orientation compared to female sport performers across four groups: youth, high school, intercollegiate, and recreational sport participants. Additionally, there was a gender by competitive level interaction based on task orientation scores that revealed female sport participants that played in more competitive environments tended to report being more ego oriented. This finding supported previous research that found that those who score higher in competitiveness or are privy to a more competitive

sport environment tend to report being more ego oriented (Gill & Deeter, 1988); males tend to be involved in sport environments with higher emphasis on competitiveness compared to females. Similar findings were reported by Cumming, Smith, Smoll, Standage, and Grossbard (2008) in the development of the Achievement Goal Scale for Youth Sports (AGSYS) in which boys scored significantly higher than girls on the ego orientation scale at three different age levels (i.e., 9-10-years-old, 11-12-years-old, and 13-14-years-old). Additionally, girls scored significantly higher than boys on the task orientation scale at the 11-12-year age group and the 13-14-year age group. Although not to a significant degree, girls aged 9-10 reported being more task-oriented than boys in the same age group.

The findings of White and Duda (1994) and Cumming, et al. (2008) are interesting given the results of Fry and Duda's (1997) research. Although significant gender differences in the cognitive process of effort/ability differentiation (the precursor to goal orientation development) have not been found, significant gender differences in goal orientation have been clearly determined at various age groups within childhood and adolescence. This conclusion would seem to fit with the *expectancy-value model* (Eccles & Harold, 1991). The model underscores the importance of investigating sport involvement during childhood, finding that gender differences in sport involvement are evident as early as first grade and they persist over time on ratings of perceived sport ability, importance of performing well, enjoyment of the activity, and usefulness of what has been learned. Eccles and Harold (1991) concluded that girls see themselves as less able in sport than boys and recognize sport as less important than their academic pursuits (i.e., grades in school). Boys, conversely, see themselves as more able in sport than girls and place greater importance on it than school subjects. The Eccles and Harold (1991) study also revealed the social influence that parents have on their children's sport involvement in that boys perceived

their parents to place higher emphasis on sport participation compared to girls. Further, both boys' and girls' perceptions of parental importance placed upon sport were significantly related to their ratings of ability in sport. Thus, parents are more likely to transmit the value of being able (compared to simply putting forth effort) in sport to boys compared to girls. As such, when ability is emphasized over effort, boys are more likely to develop an ego orientation. However, given the positive outcomes associated with task-involving environments and task goal orientation, an investigation is needed to see if these findings are supported with a sample of adolescent boys.

In addition to gender differences in goal orientation, boys and girls differ on several psychological outcomes that result from holding a particular goal orientation. Regarding sport competence, Klomsten, Skaalvik, and Espnes (2004) found that elementary and secondary school boys scored higher compared to girls, and Klomsten, Marsh, and Skaalvik (2005) reported that secondary school boys valued (using rating scales) being competent in sport more highly than girls. Klomsten et al. (2004) also found that boys scored higher than girls on several indicators of physical self-concept, which includes sport competence and has a direct impact on self-esteem (Marsh, 1998). Marsh (1998) found that participation in sport was related to greater self-esteem more so for adolescent girls than boys; that is, girls may be more likely than boys to derive a greater global concept of self from sport compared to boys. Additionally, boys are more likely to participate in sports to compete, particularly if they perceive they are competent in sport (Gill & Deeter, 1988) and are less likely than girls to participate purely out of enjoyment of participation. As these findings suggest, the psychological outcomes of sport competence, self-esteem, and enjoyment in sport may be intertwined in that perceived sport competence is related to a greater concept of self, as well as the derivation of competitive value from sport over enjoyment of it for

its own value. Thus, it is important to investigate the impact coach messages (and internalization of these messages) has on male youth sport participants considering the confluence of psychological outcomes that occur and affect the intention to continue sport participation. Despite findings that boys are more ego oriented than girls, studies have clearly demonstrated (see review under the section in this volume) that positive psychological outcomes are derived from task-involving environments and goal orientations. Thus, this investigation will place particular focus on task-involving coach messages and the internalization of these messages into task achievement goal orientation.

Achievement Motivation: Psychological Outcomes and Intention to Continue Sport Participation

Many studies have examined the influence of the motivational climate and goal orientation on various outcomes. A task-involving climate consistently has been associated with more positive outcomes for kids, including greater perceptions of physical competence (Newton & Duda, 1999; Treasure, 1997), feeling happier (Ntoumanis & Biddle, 1999), greater psychological well-being as defined by higher self-esteem and satisfaction with life (Walker, Roberts, & Harnisch, 1998), lower anxiety (Walling, Duda, & Chi, 1993), and higher levels of sportpersonship and a lower propensity to cheat (Ommundsen, Roberts, Lemyre, & Treasure, 2003) than has been found within ego-involving environments. Additionally, using a sample of female handball players aged 13-15, Sarrazin et al. (2002) found that those players who perceived the environment as task-involving were more likely to report the desire to discontinue participation compared to those who did not. When looking at task-involving coaching behaviors specifically, certain coaching behaviors, such as positive reinforcement, mistake-contingent encouragement, positive and encouraging corrective instruction, and technical instruction behaviors, were found to be consistent with task-involved motivational climates, and have been

found to lead to a reduction in performance anxiety and an increase in self-esteem among adolescent baseball players (Smith, Smoll, & Barnett, 1995). Smith, Smoll, and Cumming (2007) found that 10-14 year old athletes who were coached by coaches trained in a mastery-approach (i.e., task) that was based on these particular behaviors reported reductions in trait and state anxiety pre- to post-season.

A task goal orientation has been associated with positive physical, emotional, psychological, and sportpersonship outcomes among youth sport athletes compared to that of an ego orientation (Cury, DeFonséca, Rufo, & Sarrazin, 2002; Duda & Hall, 2001; Fox et al., 1994; Kavussanu & Harnisch, 2000; Lemyre, Roberts, & Ommundsen, 2002; Ryska, 2003; Seifriz, Duda, & Chi, 1992; Theeboom, DeKnop, & Weiss, 1995; Treasure, 1997; Treasure & Roberts, 1998). For example, Cury et al. (2002) found that task goal orientations were related positively to perceived sport competence, intrinsic motivation, and self-efficacy in physical education classes. Ego goal orientations were inversely related to these outcomes. These results were consistent with findings by Treasure (1997) and Seifriz, Duda, and Chi (1992), both of which stressed the importance of self-referent goals and cooperation to reduce perceptions of pressure in the achievement environment. Further, children and adolescents who reported high task orientation expressed higher levels of enjoyment in sport (Fox et al., 1994) and less boredom (Duda & Hall, 2001) than those who reported a low task orientation. Similarly, Theeboom, DeKnop, & Weiss (1995) reported that ego oriented children were more likely to experience pressure in the achievement context due to increased social comparison, thereby reporting fewer experiences of fun and enjoyment in sport compared to their task-oriented counterparts. Healthy psychological outcomes, such as increases in self-esteem and freedom from worry, were found among task oriented children (Kavussanu & Harnisch, 2000; Walling, Duda, & Chi, 1993) compared to ego

oriented children. Additionally, Ryska (2003) reported that task-oriented children in sport were more likely to exhibit a higher degree of sportpersonship with fewer deceptive behaviors compared to ego-oriented children. Thus, research has clearly demonstrated that both task-involving motivational climates and task goal orientations have been associated with multiple positive outcomes among youth sport participants.

Sport Competence, Self-Esteem, and Enjoyment: The Link to Continued Sport Participation

As discussed previously, determining the psychological and social variables that influence youth participants' intention to continue playing sport is important for fostering a life-long involvement in sport and physical activity. The largest study on this issue to date was conducted by Seefeldt, Ewing, and Walk (1992) who surveyed 8,000 youth asking them the reasons why they participated in sport. The top two reasons were "to have fun" and "to do something I am good at." These reasons would suggest that enjoyment and learning skills to enhance competence would be ideal for children. These findings add support to Gould's (1987) seminal literature review on attrition in youth sport when he found in descriptive studies a theme that youth discontinued participation when other non-sport opportunities developed that they thought were fun and matched their skill level. As such, a climate in which children would learn skills in an enjoyable manner would likely lead to the intention to continue sport.

Sport competence can be defined as the child's belief concerning how competent or capable she or he is at a particular sport or physical activity (Horn & Harris, 1996). Various terms have been used to describe this phenomenon, such as perceived ability (Nicholls, 1989) and self-efficacy (Bandura, 1986). A task-involving environment and task achievement goal orientation would be expected to lead to increases in sport competence. In other words, when young athletes view achievement opportunities as a means for improving skills and personal

performance, they also report the experience of feeling more competent in their sport. This relationship is consistent with the idea that competence is gained through learning skills, which fits Nicholls's (1984, 1989) definition of task orientation. Task oriented athletes hold the belief that ability (i.e., competence) can be increased through effort and learning (Duda & Nicholls, 1992). According to Biddle (1999), when athletes view sport as an opportunity for self-improvement and developing new skills, they understand that they are the source of their success, and thus have control over whether or not they become better players. Thus, it makes sense that task oriented athletes, who are self-referent in their evaluations of ability and development, also would see themselves as being competent in their sports. Inversely, an ego oriented environment and ego achievement goal orientation would be expected to lead to reduced sport competence among those individuals who question their ability in sport. When young athletes view achievement opportunities as a means for proving their skills and comparative performance, they also report increased pressure to perform and a less stable experience of feeling competent in their sport. Consistent with Biddle (1999), when athletes view sport as an opportunity for winning and competing against others, it is more difficult for them to understand that they are the source of their success, and thus have less perceived control over whether or not they become better players. Thus, it makes sense that ego oriented athletes, who are other-referent in their evaluations of ability and development, also would see themselves as being less competent in many situations within their sports.

The evaluative process (i.e., whether the athlete is "good at doing something") that young athletes undergo as they face achievement situations has implications for their self-esteem. Self-esteem is defined by how much value people place on themselves, and high self-esteem refers specifically to a highly favorable global evaluation of the self (Baumeister, Campbell, Krueger,

& Vohs, 2003). Task oriented athletes believe that they are the source of their successes and it is such a self-referenced evaluative process that leads to them feeling more positively. As such, youth with self-referenced standards and personal goals will have a greater sense of accomplishment because they believe that it was their efforts that led to success. When such an attribution is made for ones successes, it is likely to lead to favorable self-evaluation and high self-esteem (Baumeister, Campbell, Krueger, & Vohs, 2003). On the other hand, ego oriented athletes would not be expected to believe that success would be attributed to personal effort, given that ability is other-referenced. Athletes who perceive the coach-created climate as more task-involving report higher levels of self-esteem and physical self-worth and competence than those who report it being ego-involving--regardless of whether perceived ability was high or low (Reinboth & Duda, 2004; Walker, Roberts, & Harnish, 1998). These findings are similar to Smith, Smoll, and Cumming's (2007) suggestion that the development of a mastery-involving climate using positive reinforcement, encouragement, and technical instruction behaviors would lead to positive outcomes, including increased perceptions of sport competence and self-esteem.

Research also has shown that sport competence can influence self-esteem directly, so accounting for this relationship will be important as well (Harter, 1982; 1983). Harter (1982) provided evidence for this in developing *The Perceived Competence Scale for Children*. She noted that children as young as eight-years-old construct a view of general self-worth based on specific competence judgments, including those related to physical competence (which she defined "with a focus on sports and outdoor games" [pp. 88]). This finding speaks to the hierarchical nature of self-esteem (Baumeister, Campbell, Krueger, & Vohs, 2003; Harter, 1983), whereby self-esteem is viewed as a superordinate construct defined by lower-order competence judgments. In evaluating the effect of goal orientation on the three psychological outcomes under

review in this investigation, the direct relationship between competence beliefs and general esteem must be explained.

The main reason that children participate in sports according to the survey conducted by Seefeldt, Ewing, and Walk (1992), as well as highlighted in Gould's (1987) review of youth sport attrition is to have fun. Thus, it is important to consider enjoyment of a given sport activity as a psychological outcome that leads to the intention to continue. Deci and Ryan (1985, 2000) found that a task-involving environment is more likely to promote more personally controllable criteria for subjective success. This finding is important because according to their Self-Determination Theory (SDT), perceptions of self-control often lead to fun and intention to continue in sport (Deci & Ryan, 2000). In other words, when youth athletes believe that they have greater control over successes, they are more likely to find the sport experience as enjoyable. Based on Deci and Ryan's (1985, 2000) research, task environments and orientations are more likely to produce these outcomes compared to ego environments and orientations. Additionally, when children exhibit improvement during a challenging task, they are more likely to derive satisfaction out of the activity compared to the ego oriented experience of avoiding such activities due to the pressures of social comparison (Theeboom, DeKnop, & Weiss, 1995). As children internalize messages that achievement on increasingly challenging tasks is possible through personal improvement on factors that are within their control, they perceive the achievement context as more enjoyable.

Taken together, the experience of perceived competence in one's sport, self-esteem and enjoyment, will affect positively children's persistence in sport. For example, Treasure (1997) found among physical education students aged 10-12 years that those who perceived a climate oriented toward high mastery/moderate performance had a positive attitude toward the class,

high perceived ability, the belief that effort and ability cause success, and feelings of satisfaction. In contrast, those who perceived a climate oriented toward high performance/low mastery focused on ability as a cause of success, reported a negative attitude toward the class, and had feelings of boredom. In a related study of 10-18 year old female athletes in a week-long residential basketball camp, Treasure and Roberts (1998) determined that those athletes who perceived a task-involving climate had a stronger belief that success follows from one's own efforts and derived satisfaction from mastery experiences as opposed to those perceiving a performance oriented climate. They found that greater enjoyment is evident when the peer and the coach climate are task-involving. This finding is consistent with Ames (1992), who postulated that environments that emphasize individual criteria for success and involve all athletes can increase the latter's intrinsic interest. Similarly, Seifriz, Duda, and Chi (1992) found among male high school basketball players that perceptions of a task-involving climate related positively to reported enjoyment and the belief that effort leads to achievement, as opposed to an ego-involving climate. This relation held regardless of the team's win-loss record. Newton and Duda (1999) found that perceptions of a task-involving environment that emphasized cooperative learning and effort and improvement were related positively to enjoyment among female teenaged volleyball players. This finding is consistent with Treasure and Roberts (1998), who reported a positive association between the perception of a task-involving climate and the belief that effort equates to success among young athletes. Those athletes in the study by Treasure and Roberts (1998) who reported perceptions of an ego-involving climate were found to be more likely to believe that ability and deceptive tactics breed success. The literature on the impact of the motivational climate on fun/satisfaction outcomes has oriented itself to the perceived effort versus perceived ability dichotomy to describe whether the climate is task or

ego-involving. The point to this is that if coaches promote effort development in their athletes, it would likely lead to the athlete perceiving the environment as task-involving. The task-involving environment, then, would be expected to bring about positive outcomes, which would be expected to lead to the experience of fun and the intention to continue. If coaches promote that athletes prove their abilities through intra-team competition and pay greater attention to those athletes who can help the team win, it would likely lead to the athlete perceiving the climate as ego-involving. The ego-involving environment would be expected to bring about negative outcomes, particularly among those athletes that do not have high ability or place an emphasis on winning and beating others in competition. Within these conditions, the experience of fun is more likely to be absent, leading to attrition.

This section reviewed the link between achievement motivation and psychological outcomes that has been established through direct empirical testing of the constructs [e.g., Newton and Duda (1999); Seifriz, Duda, and Chi (1992); Treasure and Roberts (1998)] and theoretical explanation of the association [e.g., Nicholls's (1984; 1989) definition of the two types of achievement motivation; Biddle's (1999) work regarding the relationship between belief in the sources of success and achievement motivation]. These studies have clearly demonstrated that positive outcomes are more strongly associated with task-involving environments and goal orientations compared to ego-involving environments and orientation. Ego-involving environments and orientations may be most beneficial for youth sport participants that are either high in perceived sport competence and/or task goal orientation. Thus, the scenario in which children are most likely to persist in sport occurs when a task-involving environment influences participants' to foster a task-oriented approach to achievement situations, or at the very least, an

ego-oriented approach that is also influenced by perceptions of high competence and a task-orientation. As such, this investigation will focus on task environments and orientations.

Goal Orientation as a Potential Mediator

Considering studies that children internalize the messages and likely form similar approaches to achievement situations as significant others in their lives (e.g., Duda & Horn, 1993; Waldron & Krane, 2005), and the conceptual similarity between the motivational climate and goal orientation constructs, it is worthwhile to explore if goal orientation has potential mediating role between the presence of situational achievement messages and subsequent psychological outcomes. Dweck and Leggett (1988) suggested that dispositional goal orientation may be viewed as an individual difference variable that determines the probability of adopting a certain goal of action (intentional behavior) and of displaying a particular behavioral pattern, whereas situational factors were seen as potentially altering these probabilities. They ultimately concluded that the stronger the disposition, the weaker the expected impact of the motivational climate. Thus, the more deeply achievement-related messages are internalized and the more strongly the goal orientation is held, the more perceptions of achievement situations would be based on dispositional rather than situational factors. Of course, the disposition only strengthens through repeated exposure to the situational elements. Theoretically, this conceptualization suggests that goal orientation may mediate the relationship between the motivational climate created by coaches and the positive psychological and behavioral outcomes that result, and that these mediational effects may vary based on the age of the performer (and thus how stable the goal orientation may be).

Research on this question, however, has been minimal, with most studies examining direct effects of goal orientation and motivational climates on relevant outcomes (e.g.,

Kavussanu & Roberts, 1996; Ommundsen, Roberts, & Kavussanu, 1998; Treasure & Roberts; 1998). In one study that did test the conception that goal orientation may be a mediator between the motivational climate and outcomes, Cury, Biddle, Famose, and Goudas (1996) examined adolescent girls' perceptions of the motivational climate and their interest in school physical education (PE) classes. Using structural equation modeling, they found that mastery goals mediated the effects of mastery climate perceptions. Students' perceptions of a task-involving environment were related to having a task orientation, which in turn, was associated with feeling intrinsically motivated in PE class.

Despite the importance of the Cury et al. (1996) study, additional research is needed to more fully test the linkages between motivational climates, goal orientations, and psychological and behavioral outcomes among youth sport participants (see Figure 1). First, research has demonstrated the importance of coaches' influences on youth sport participants (e.g., Smith, Smoll, & Cumming, 2007; Smith, Worthington, Fry, & Li, 2005), but studies in this area generally have not examined the influence in relation to goal orientation. Thus, research that directly examines the relationship of influence on the motivational climate to goal orientation, and subsequent outcomes, is needed. Second, structural equation modeling allows for the simultaneous testing of multiple relationships and is the preferred approach for examining mediational effects (Baron & Kenny, 1986; Frazier, Tix, & Barron, 2004). By using this statistical approach, future studies can examine not only the mediational effects of goal orientation, but multiple outcomes and relationships, which would be more reflective of the experiences and realities of youth sport participants. Third, because so many children drop out of sport, research in this area ultimately needed to examine the relationships of climate, goal orientation, and psychological variables to children and adolescent athletes' intention to

continue, and actually stay involved, in sport. Initial studies can be cross-sectional in design, because first it is necessary to establish relationships among the variables under study and such designs are cost effective (Stice, 2002). Ultimately, though, such studies will need to incorporate longitudinal and experimental designs to determine if goal orientations at age 12 predict psychological well-being and enjoyment at age 13 and subsequently adolescents' involvement in sport at age 16 or later, for example. Also, because the study is cross-sectional in nature, there will need to be a confirmatory sample to validate the initial sample. Fourth, it was important to examine male and female adolescents separately, considering that coach-initiated messages between male and female sport participants may differ based on gender socialization in sport (e.g., Eccles & Harold, 1991). As such, coaches' behaviors, beliefs, and values are expected to differ depending upon the gender of the participants. For example, male athletes may value being competent in their sports more than female athletes because of the expectation that males should be "good at sports," and thus this construct might better explain the intention of male adolescents, but not female adolescents, to continue playing their sport. Finally, it must be noted, that because this is an initial cross-sectional study, there is no longitudinal component to it; therefore, it cannot be determined with certainty that the male adolescents would follow through on the intention to continue by actually continuing to participate in sport (i.e., behaviors). However, behavioral intent is typically a strong predictor of behavior (Ajzen, 1985) and has been used previously as a means of assessing continuation in sport (Le Bars, Gernigon, & Ninot, 2009). In the next section, a model will be proposed that will incorporate the aforementioned considerations.

The Proposed Model

A multicomponent model linking the motivational climate as defined by coaches' task-involving behaviors (i.e., environment) to adolescent athletes' intention to continue in sport can be seen in Figure 1. As discussed previously, the athletes' task goal orientation was expected to mediate the effects of the task motivational climate. Subsequently, a task goal orientation was hypothesized to be positively related to the young athletes' self-perceptions of being competent in their sport, as well as being athletic in general, global esteem for themselves--with a pathway proposed linking competence beliefs and global esteem that is based on Harter's (1982, 1983) research--and the amount of enjoyment they derive from playing their sport. These outcomes, in turn, would be associated with their intention to playing their sport. An alternative model was also tested and included all of the direct relationships described in the structural model, with the exception of the sport competence to self-esteem pathway. Within a sample of female adolescents, the alternative model was previously tested by Johnson (2009) and using SEM, it revealed good fit (meaning the model fit the data well). This finding is expected to be replicated using a sample of male adolescents, the impetus for the current study. However, in Johnson's (2009) study, sport competence and self-esteem did not meaningfully contribute as expected to the female adolescents' intentions to continue sport participation, raising the question of a potential confluence of the competence and esteem factors on intention. As such, the structural model in this study includes a pathway between the two constructs to elucidate this question, and alternative model was developed in the vein of Johnson's (2009) original structural model.

APPENDIX B

CONSENT FORMS / DEMOGRAPHICS

UNIVERSITY OF NORTH TEXAS

INFORMED CONSENT FORM

Title of Study: The Role of Goal Orientation within a Model of Parent-, Coach-, and Peer-Created Motivational Climate, Psychological Outcomes, and Sport Participation for Youth Boys.

Principal Investigator: Trent Petrie, Ph.D.
Faculty Advisor, Professor
Department of Psychology

Co-investigators: Matthew Atkins, M.S., Erica Force, M.Ed., & Dustin Johnson, M.S.
Counseling Psychology Doctoral Students

Before agreeing to your child's participation in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

Start Date of Study
12/1/09

End Date of Study
11/30/10

Purpose of the study

You are being asked to allow your son to participate in a research study that involves the examination of the relationships between children's perceptions of the sport environment, influences from parents, coaches, and peers, self-esteem, enjoyment, belief in ability to play sports, and intent to continue playing sport.

Procedures to be used

Your child will be asked to complete a series of surveys that will take approximately 30 minutes.

Foreseeable risks

Participation involves no foreseeable physical, psychological, or social risks. Participants will be assured that they can discontinue the survey at any time.

Benefits to the subjects or others

We hope to learn more about how parents, coaches, and peers define the sport environment for kids and how their behaviors contribute to how they think about achievement-related situations, feeling good about themselves, believing in their sport abilities, having fun while playing and intending to stay involved in sport. We plan to use this information to educate parents, coaches, and other youth sport participants on how they can be more effective in working with young sport participants so children have the best sport experience possible.

Procedures for Maintaining Confidentiality

Privacy is protected because your child will not be identified by name (or other easily identifiable information) as a participant in this project; only group results will be reported. Confidentiality will be maintained by using only numbers on questionnaires. The questionnaires will be kept in a locked filing cabinet in the UNT Center for Sport Psychology and Performance

Excellence office. Also, the confidentiality of your child's individual information will be maintained in any publications or presentations regarding this study.

Review for the Protection of Participants

This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 regarding the rights of research subjects.

Research Subject's Rights

If you have any questions about the study you may contact:

Dr. Trent Petrie
Psychology Department
University of North Texas
(940) 565-2671
Trent.Petrie@unt.edu

Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- The study has been explained to you and all of your questions have been answered. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to allow your child to take part in this study, and your refusal to allow your child to participate or your decision to withdraw him/her from the study will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your child's participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as the parent/guardian of a research participant and you voluntarily consent to your child's participation in this study.
- You have been told you will receive a copy of this form.

Printed Name of Parent or Guardian

Date

Signature of Parent or Guardian

Date

Signature of Principal Investigator or Designee

Date

Young Athlete Form

I would like your help to answer some questions.

It will only take about 30 minutes of your time.

You do not have to help with this project.

You can change your mind and stop helping at any time and that would be fine.

You are being asked to be part of a research project being done by the University of North Texas Department of Psychology.

This study is trying to figure out relationships between how you view your parents, coaches, and teammates, how you feel about yourself and your sport ability, your desire to be the best you can, how much you enjoy your sport, and how much you want to keep playing sports.

You will be asked to answer some questions about things that your parents, coaches, and teammates do when you are playing sports. For example, you might notice that your parents go to all of your games, or that your coach wants all of your teammates to play, or that your teammates cheer for you while you play. You will also be asked about when you feel like you did a good job playing your sport. You might feel like you did a good job because you can do something in your sport well or that your team won a game. There will also be questions about how you feel about yourself. For example, you might feel proud of yourself or that you are a good person. There will also be questions about how fun sports are for you. For example, you might like playing your sport or feel very happy when you are playing your sport. There will also be questions about how long you want to keep playing sport. For example, you might want to play sports for the next year.

If you decide to help with this study, please remember you can stop participating any time you want.

I will not keep this page with the others and you will not put your name on your answer sheets. This way no one will know whose answers are whose and your privacy will be protected.

If you would like to help with this study, please print and sign your name below.

Print your name

Sign your name

Date

Signature of Principal Investigator or Designee

Date

Here are the questions. Please be sure to answer **every** question. Feel free to ask me to explain anything you don't understand.

In the blank below, I want you to write in your **MAIN** sport. Your main sport can be any sport that is important to you in some way.

What is your MAIN sport? <div style="border-bottom: 1px solid black; width: 80%; margin: 0 auto;"></div>

I am going to ask you to write in your main sport at the top of every page. For all of the questions I ask, I want you to have this sport in mind. For example, if your main sport is baseball, and I ask you if you want to keep playing your main sport, think about wanting to keep playing baseball.

Now please answer these questions:

1. Gender: <input type="checkbox"/> Male (1) <input type="checkbox"/> Female (2)	
2. Age: _____	
3. Date of Birth: _____	
4. Race / Ethnicity: <div style="display: flex; justify-content: space-between; font-size: small;"> <input type="checkbox"/> Caucasian/White (1) <input type="checkbox"/> Asian American (4) </div> <div style="display: flex; justify-content: space-between; font-size: small;"> <input type="checkbox"/> African American/Black (2) <input type="checkbox"/> Pacific Islander (5) </div> <div style="display: flex; justify-content: space-between; font-size: small;"> <input type="checkbox"/> Hispanic / Latino (3) <input type="checkbox"/> Other (6) </div>	
5. I am a(n): <input type="checkbox"/> "A" student <input type="checkbox"/> "B" student <input type="checkbox"/> "C" student	
6. Grade Level in school: _____8 th _____9 th	
7. Next to each person listed below, place a number to indicate how many are in your immediate family (who live with you). For example, if you have two sisters, then you would put a "2" on that line.	
Mother _____ Father _____ Step-Mother _____ Step-Father _____ Brother _____	Sister _____ Step-Brother _____ Step-Sister _____ Grandmother _____ Grandfather _____
My mom & dad live in different houses _____	
8. In what grade did you start playing your MAIN sport?	_____ grade
9. Compared to other boys my age who play my MAIN SPORT , I am:	<div style="display: flex; justify-content: space-around; font-size: small;"> 1 2 3 4 5 </div> <div style="display: flex; justify-content: space-around; font-size: small;"> Less skilled than most Average More skilled than most </div>

10. Right now in your MAIN SPORT , at what point of the season are you? <div style="display: flex; justify-content: space-between;"> <div>_____ 1st half of competitive season (1)</div> <div>_____ 2nd half of competitive season (2)</div> <div>_____ Off-season training (3)</div> </div>			
11. Describe your playing status in your MAIN SPORT : <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>_____ Starter</div> <div>_____ Primary substitute (play 50% or more of the game)</div> <div>_____ Secondary substitute (play less than 50% of game)</div> </div>			
12. For your MAIN SPORT , do you participate on a recreational team? (Teams you do not have to try out to be on; including organized teams sponsored by the city, YMCA, church leagues, or local club) <div style="text-align: right; margin-top: 10px;"> _____ Yes (1) _____ No (2) </div>			
13. For your MAIN SPORT , do you participate on a select team? (Teams you do have to try out for; including club, elite, select, and Olympic development) <div style="text-align: right; margin-top: 10px;"> _____ Yes (1) _____ No (2) </div>			
14. For your MAIN SPORT , do you participate on a school team? (teams sponsored by a middle school, junior high, or high school) <div style="text-align: right; margin-top: 10px;"> _____ Yes (1) _____ No (2) </div>			
15. If you participate on more than one team, what is your highest level of competition when playing your MAIN SPORT ? (<i>check only one answer</i>) <div style="display: flex; justify-content: flex-end; margin-top: 10px;"> <div>_____ Recreation (1)</div> <div>_____ Select (2)</div> <div>_____ School (3)</div> </div>			
16. For my most recent season in my MAIN SPORT ... <div style="margin-top: 10px;"> _____ We won more games than we lost (1) _____ We won about the same number of games as we lost (2) _____ We lost more games than we won (3) </div>			
17. In my most recent season in my MAIN SPORT , the coach I spent the most time with was: <div style="margin-top: 10px;"> a) _____ A Man _____ A Woman b) _____ Caucasian/White (1) _____ Asian American (4) _____ Hispanic / Latino (3) _____ African American/Black (2) _____ Pacific Islander (5) _____ Other (6) _____ _____ I don't know (7) c) _____ 20-30 years old _____ 51+ years old _____ 31-40 years _____ Don't Know _____ 41-50 years old d) For this coach, I played _____ Less than 6 months (1) _____ 6 months to 1 year (2) _____ 1 year to 2 years (3) _____ More than two years (4) </div>			
18. Circle all the sports that you currently play: <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div>Baseball (1)</div> <div>Football (6)</div> <div>Lacrosse (11)</div> <div>Tennis (17)</div> </div>			

Basketball (2)	Golf (7)	Rugby (12)	Track (18)
Cheerleading/Drill Team (3)	Gymnastics (8)	Soccer (13)	Volleyball (19)
Dancing (4)	Hockey (9)	Softball (14)	Other (20)_____
Diving (5)	Ice Skating (10)	Swimming (15)	

19. Circle all the sports that **your mom** or other **female adult figure** in your household used to play (or plays now):

Baseball (1)	Football (6)	Lacrosse (11)	Tennis (17)
Basketball (2)	Golf (7)	Rugby (12)	Track (18)
Cheerleading/Drill Team (3)	Gymnastics (8)	Soccer (13)	Volleyball (19)
Dancing (4)	Hockey (9)	Softball (14)	Other (20)_____
Diving (5)	Ice Skating (10)	Swimming (15)	

20. Circle all the sports that **your dad** or other **adult male figure** in your household used to play (or plays now):

Baseball (1)	Football (6)	Lacrosse (11)	Tennis (17)
Basketball (2)	Golf (7)	Rugby (12)	Track (18)
Cheerleading/Drill Team (3)	Gymnastics (8)	Soccer (13)	Volleyball (19)
Dancing (4)	Hockey (9)	Softball (14)	Other (20)_____
Diving (5)	Ice Skating (10)	Swimming (15)	

21. Circle all the sports that **your brothers and/or sisters** used to play (or play now):

Baseball (1)	Football (6)	Lacrosse (11)	Tennis (17)
Basketball (2)	Golf (7)	Rugby (12)	Track (18)
Cheerleading/Drill Team (3)	Gymnastics (8)	Soccer (13)	Volleyball (19)
Dancing (4)	Hockey (9)	Softball (14)	Other (20)_____
Diving (5)	Ice Skating (10)	Swimming (15)	

Think about the **MAIN** sport that you listed on the top of this page as you answer these questions.

	Not at All		Maybe			Absolutely	
22. Is it likely that you will drop out of your MAIN sport in the next three years?	1	2	3	4	5	6	7
23. Are you determined to continue your MAIN sport at a high level?	1	2	3	4	5	6	7
24. My MAIN sport is the sport I am most successful at doing.	1	2	3	4	5	6	7
25. My MAIN sport is the sport I most enjoy doing.	1	2	3	4	5	6	7
26. My MAIN sport is the sport that leads to me feeling the best about myself.	1	2	3	4	5	6	7

REFERENCES

- Ajzen, I., & Driver, B. L. (1992). Application of the theory of planned behavior to leisure choice. *Journal of Leisure Research*, 24, 207-224. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Ames, C. (1992). Achievement goals, motivational climate, and motivational processes. In G. C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 161-176). Champaign, IL: Human Kinetics.
- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, 80(3), 260-267. doi: 10.1037/0022-0663.80.3.260.
- Amorose, A. J., & Horn, T. S. (2000). Intrinsic motivation: relationships with collegiate athletes' gender, scholarship status, and perceptions of their coaches' behavior. *Journal of Sport and Exercise Psychology*, 22, 63-84. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Anderson, J. C., & Gerbing, D. W. (1984). The effects of sampling error on convergence, improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory factor analysis. *Psychometrika*, 49, 155-173. doi: 10.1007/BF02294170.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182. doi: 10.1037/0022-3514.51.6.1173.

- Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest*, 4(1), 1-44. doi: 10.1111/1529-1006.01431.
- Bentler, P. M. (1980). Multivariate analysis with latent variables: Causal modeling. *Annual Review of Psychology*, 31, 419-456. doi: 10.1146/annurev.ps.31.020180.002223.
- Bentler, P. M. (1995). *EQS structural equations program manual*. Encino, CA: Multivariate Software, Inc.
- Bentler, P. M., & Chou, C. P. (1993). Some new covariance structure model improvement statistics. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equation models*. Newbury Park, CA: Sage.
- Berryman, J. W. (1996). The rise of boys' sports in the United States, 1900-1970. In F. L. Smoll & R. E. Smith (Eds.), *Children and youth in sport: A biopsychosocial perspective* (pp. 4-14). Madison, WI: Brown & Benchmark.
- Biddle, S. J. H. (1999). Motivation and perceptions of control: Tracing its development and plotting its future in exercise and sport psychology. *Journal of Sport & Exercise Psychology*, 21(1), 1-23. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Black, J. S., & Weiss, M. R. (1992). The relationship among perceived coaching behaviors, perceptions of ability, and motivation in competitive age-group swimmers. *Journal of Sport & Exercise Psychology*, 14(3), 309-325. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Bollen, K. A., & Long, J. S. (Eds.). (1993). *Testing structural equation models*. Newbury Park, CA: Sage.

- Bowker, A. (2006). The relationship between sports participation and self-esteem during early adolescence. *Canadian Journal of Behavioural Science*, 38(3), 214-229. doi: 10.1037/cjbs2006009.
- Bowker, A., Gadbois, S., & Cornock, B. (2003). Sports participation and self-esteem: Variations as a function of gender and gender role orientation. *Sex Roles*, 49, 47-58. doi: 10.1023/A:1023909619409.
- Brustad, R. J., & Partridge, J. A. (2002). Parental and peer influence on children's psychological development through sport. In F. L. Smoll & R. E. Smith (Eds.), *Children and youth in sport: A biopsychosocial perspective* (2nd ed., pp. 187-210). Dubuque, IA: Kendall/Hunt.
- Butcher, J., Lindner, K. J., & Johns, D. P. (2002). Withdrawal from competitive youth sport: A retrospective ten-year study. *Journal of Sport Behavior*, 25(2), 145-163. Retrieved from <http://ebshost.com/public/SportDiscuss>.
- Cote, J. J., Baker, J. J., & Abernethy, B. B. (2003). From play to practice: a developmental framework for the acquisition of expertise in team sports. In J. L. Starkes, & K. A. Ericsson (Eds.), *Expert performance in sports: Advances in research on sport expertise*. Champaign, IL: Human Kinetics.
- Cumming, S. P., Smith, R. E., Smoll, F. L., Standage, M., & Grossbard, J. R. (2008). Development and validation of the Achievement Goal Scale for Youth Sports. *Psychology of Sport and Exercise*, 9(5), 686-703. doi: 10.1016/j.psychsport.2007.09.003.
- Curtis, B., Smith, R. E., & Smoll, F. L. (1979). Scrutinizing the skipper: A study of leadership behaviors in the dugout. *Journal of Applied Psychology*, 64(4), 391-400. doi: 10.1037/0021-9010.64.4.391.
- Cury, F., Biddle, S., Famose, J., & Goudas, M. (1996). Personal and situational factors

- influencing intrinsic interest of adolescent girls in school physical education: A structural equation modelling analysis. *Educational Psychology*, 16(3), 305-315. doi: 10.1080/0144341960160307.
- Cury, F., Da Fonséca, D., Rufo, M., & Sarrazin, P. (2002). Perceptions of competence, implicit theory of ability, perception of motivational climate, and achievement goals: A test of trichotomous conceptualization of endorsement of achievement motivation in the physical education setting. *Perceptual and Motor Skills*, 95(1), 233-244. doi: 10.2466/PMS.95.4.233-244
- Damon, W. (1983). *Social and personality development: Infancy through adolescence*. New York: W. W. Norton.
- Daniels, E., Sincharoen, S., & Leaper, C. (2005). The relation between sport orientations and athletic identity among adolescent girl and boy athletes. *Journal of Sport Behavior*, 28(4), 315-332. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Deci, E.L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, 19(2), 109-134. doi:10.1016/0092-6566(85)90023-6.
- Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268. doi: 10.1207/S15327965PLI1104_01.
- Duda, J. L. (1989). Relationship between task and ego orientation and the perceived purpose of sport among high school athletes. *Journal of Sport and Exercise Psychology*, 11, 318-335. Retrieved from <http://ebshost.com/public/SportDiscus>.

- Duda, J. L. (1992). Sport and exercise motivation: A goal perspective analysis. In G. Roberts (Ed.), *Motivation in sport and exercise* (pp. 57-91). Champaign, IL: Human Kinetics.
- Duda, J. L., & Balaguer, I. (2007). Coach-created motivational climate. In S. Jowett, & D. Lavallee (Eds.), *Social psychology in sport* (pp. 117-130). Champaign, IL US: Human Kinetics.
- Duda, J. L., & Hall, H. (2001). Achievement goal theory in sport: Recent extensions and future directions. In R. N. Singer, H. A. Hausenblas, & C. M. Janelle (Eds.), *Handbook of sport psychology* (2nd ed., pp. 417-443). New York: Wiley.
- Duda, J. L. & Horn, H. L. (1993). Interdependencies between the perceived and self-reported goal orientations of young athletes and their parents. *Pediatric Exercise Science*, 5, 234-241. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Duda, J. L., & Nicholls, J. G. (1992). Dimensions of achievement motivation in schoolwork and sport. *Journal of Educational Psychology*, 84(3), 290-299. doi: 10.1037/0022-0663.84.3.290.
- Duda, J. L., & Pensgaard, A. L. (2002). Enhancing the quantity and quality of motivation: the promotion of task involvement in a junior football team. In Cockerill, I. M. (ed.), *Solutions in Sport Psychology*. (pp. 49-57). London: Thomson Learning.
- Duda, J. L., & Whitehead, J. (1998). Measurement of goal perspectives in the physical domain. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 21-48). Morgantown, WV: Fitness Information Technology.
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, 41, 1040-1048. doi: 10.1037/0003-066X.41.10.1040.

- Dweck, C. S., & Elliott, E. S. (1983). Achievement motivation. In P. Mussen and E.M. Hetherington (Eds.), *Handbook of child psychology*. New York: Wiley.
- Dweck, C. S., & Leggett, E. S. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256-273. doi: 10.1037/0033-295X.95.2.256.
- Ebbeck, V., & Weiss, M. R. (1998). Determinants of children's self-esteem: An examination of perceived competence and affect in sport. *Pediatric Exercise Science*, 10(3), 285-298. Retrieved from <http://ebscohost.com/public/PsycINFO>.
- Eccles, J. S., & Harold, R. D. (1991). Gender differences in sport involvement: Applying the Eccles' expectancy-value model. *Journal of Applied Sport Psychology*, 3(1), 7-35. doi: 10.1080/10413209108406432.
- Epstein, J. (1988). Effective schools or effective students? Dealing with diversity. In R. Haskins & B. MacRae (Eds.), *Policies for America's public schools* (pp.89-126). Norwood, NJ: Ablex.
- Ewing, M. E., & Seefeldt, V. (2002). Patterns of participation and attrition in American agency-sponsored youth sports. In F. L. Smoll & R. E. Smith, *Children and youth in sport: A biopsychosocial perspective* (2nd ed., pp. 39-56). Dubuque, IA: Kendall/Hunt.
- Fox, K. R. (1990). *The Physical Self-Perception Profile manual*. DeKalb, IL: Northern Illinois University, Office for Health Promotion.
- Fox, K. R., Goudas, M., Biddle, S.J.H., Duda, J. L., & Armstrong, N. (1994). Children's task and ego goal profiles in sport. *British Journal of Educational Psychology*, 64, 253-261. Retrieved from <http://ebscohost.com/public/SportDiscus>.

- Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology, 51*, 115-134. doi: 10.1037/0022-0167.51.1.115.
- Fredricks, J. A., & Eccles, J. S. (2002). Children's competence and value beliefs from childhood through adolescence: Growth trajectories in two male-sex-typed domains. *Developmental Psychology, 38*, 519-533. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Fry, M. D., & Duda, J. L. (1997). A developmental examination of children's understanding of effort and ability in the physical and academic domains. *Research Quarterly for Exercise and Sport, 68*, 331-344. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Gill, D. L., & Deeter, T. E. (1988). Development of the Sport Orientation Questionnaire. *Research Quarterly for Exercise and Sport, 59*, 191-202. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Gould, D. (1987). Understanding attrition in children's sport. In D. Gould (ed.), *Advances in pediatric sport sciences. Volume 2: Behavioral issues* (pp.61-85). Champaign, IL: Human Kinetics.
- Grant, H., & Dweck, C. S. (2003). Clarifying achievement goals and their impact. *Journal of Personality and Social Psychology, 85*(3), 541-553. doi: 10.1037/0022-3514.85.3.541.
- Hagger, M. S., Chatzisarantis, N., Biddle, S. J. H., & Orbell, S. (2001). Antecedents of children's physical activity intentions and behavior: Predictive validity and longitudinal effects. *Psychology and Health, 16*, 391-407.
- Harter, S. (1982) The perceived competence scale for children. *Child Development, 53*, 87-97. doi: 10.2307/1129640.

- Harter, S. (1983). Developmental perspectives on the self system. In E.M. Hetherington (Ed.), *Handbook of child psychology* (Vol. 4): *Socialization, personality, and social development*. New York: Wiley.
- Horn, T. S., & Harris, A. (1996). Perceived competence in young athletes: Research findings and recommendations for coaches and parents. In F.L. Smoll & R.E. Smith (Eds.), *Children and youth in sport: A biopsychosocial perspective* (pp. 309-329). Madison, WI: Brown and Benchmark.
- Johnson, D. M. (2009). *The influence of coaching behaviors and goal orientation on psychological factors and sport participation for adolescent girls*. Unpublished manuscript, University of North Texas.
- Kavussanu, M., & Harnisch, D. L. (2000). Self-esteem in children: Do goal orientations matter? *British Journal of Educational Psychology*, 70(2), 229-242. doi: 10.1348/000709900158074.
- Kavussanu, M., & Roberts, G. C. (1996). Motivation in physical activity contexts: The relationship of perceived motivational climate to intrinsic motivation and self-efficacy. *Journal of Sport and Exercise Psychology*, 18, 264-280. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Keegan, R., Spray, C., Harwood, C., & Lavalley, D. (2009). A qualitative investigation exploring the motivational climate in early-career sports participants: Coach, parent, and peer influences on sport motivation. *Psychology of Sport and Exercise*, 31, 361-372. doi: 10.1016/j.psychsport.2008.12.003.

- Kenow, L., & Williams, J. (1992). Relationship between anxiety, self-confidence, and evaluation of coaching behaviors. *The Sport Psychologist*, 6(4), 344-357. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling (2nd ed.)*. New York: Guilford Press.
- Klomsten, A. T., Marsh, H. W., & Skaalvik, E. M. (2005). Adolescents' perceptions of masculine and feminine values in sport and physical education: A study of gender differences. *Sex Roles*, 52, 625-636. doi: 10.1007/s11199-005-3730-x.
- Klomsten, A. T., Skaalvik, E. M., & Espnes, G. A. (2004). Physical self-concept and sports: Do gender differences still exist? *Sex Roles*, 50(1), 119-127. doi: 10.1023/B:SERS.0000011077.10040.9a.
- Krane, V., Greenleaf, C. A., & Snow, J. (1997). Reaching for gold and the practice of glory: A motivational case study of an elite gymnast. *The Sport Psychologist*, 11, 53-71. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Le Bars, H., Gernigon, C., & Ninot, G. (2009). Personal and contextual determinants of elite young athletes' persistence or dropping out over time. *Scandinavian Journal of Medicine and Science in Sports*, 19, 274-285. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Lemyre, P., Roberts, G. C., & Ommundsen, Y. (2002). Achievement goal orientations, perceived ability, and sportpersonship in youth soccer. *Journal of Applied Sport Psychology*, 14, 120-136. doi: 10.1080/10413200252907789.

- Li, F., Harmer, P., Duncan, T. E., Duncan, S. C., Acock, A., & Boles, S. (1998). Approaches to testing interaction effects using structural equation modeling methodology. *Multivariate Behavioral Research*, 33(1), 1-39. doi:10.1207/s15327906mbr3301_1.
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, 9(2), 151-173. doi:10.1207/S15328007SEM0902.
- Malete, L. (2006). Goal orientations, sport ability, perceived parental influences and youths' enjoyment of sport and physical activity. *International Journal of Applied Sports Sciences*, 18(2), 89-107. Retrieved from <http://ebSCOhost.com/public/SportDiscus>.
- Marsh, H. W. (1996). Physical self-description questionnaire: Stability and discriminant validity. *Research Quarterly for Exercise and Sport*, 67, 249-264. Retrieved from <http://ebSCOhost.com/public/PsycINFO>.
- Marsh, H. W. (1998). Age and gender effects in physical self-concepts for adolescent elite athletes and non-athletes: A multicohort-multioccasion design. *Journal of Sport and Exercise Psychology*, 20, 237-259. Retrieved from <http://ebSCOhost.com/public/PsycINFO>.
- Marsh, H. W., Hey, J., Roche, L. A., & Perry, C. (1997). Structure of physical self-concept: Elite athletes and physical education students. *Journal of Educational Psychology*, 89, 369-380. doi: 10.1037/0022-0663.89.2.369.
- Marsh, H. W., Richards, G. E., Johnson, S., Roche, L., & Tremayne, P. (1994). Physical self-description questionnaire: Psychometric properties and multitrait-multimethod analysis of relations to existing instruments. *Journal of Sport and Exercise Psychology*, 16, 270-305. Retrieved from <http://ebSCOhost.com/public/PsycINFO>.

- Martens, M. (2005). The use of structural equation modeling in counseling psychology research. *The Counseling Psychologist, 33*, 269-298. doi: 10.1177/0011000004272260.
- Martens, M. P., & Haase, R. F. (2006). Advanced applications of structural equation modeling in counseling psychology research. *The Counseling Psychologist, 34*, 878-911. doi:10.1177/0011000005283395.
- McAuley, E. E., Duncan, T. T., & Tammen, V. V. (1989). Psychometric properties of the Intrinsic Motivation Inventory in a competitive sport setting: a confirmatory factor analysis. *Research Quarterly for Exercise & Sport, 60*(1), 48-58. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Newton, M., & Duda, J. L. (1999). The interaction of motivational climate, dispositional goal orientations, and perceived ability in predicting indices of motivation. *International Journal of Sport Psychology, 30*(1), 63-82. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Newton, M., Duda, J. L., & Yin, Z. (2000). Examination of the psychometric properties of the Perceived Motivational Climate in Sport Questionnaire-2 in a sample of female athletes. *Journal of Sports Sciences, 18*, 1-16. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Nicholls, J. G. (1978). The development of the concepts of effort and ability, perception of academic attainment, and the understanding that difficult tasks require more ability. *Child Development, 49*, 800-814. doi: 10.2307/1128250.
- Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review, 91*, 328-346. doi: 10.1037/0033-295X.91.3.328.

- Nicholls, J. G. (1989). *Competence and accomplishment: A psychology of achievement motivation*. Cambridge, MA: Harvard University Press.
- Ntoumanis, N., & Biddle, S. J. (1999). Affect and achievement goals in physical activity: A meta analysis. *Scandinavian Journal of Medicine and Science in Sports*, 9, 315-332.
Retrieved from <http://ebshost.com/public/SportDiscus>.
- Ommundsen, Y. Y., Roberts, G. C., & Kavussanu, M. M. (1998). Perceived motivational climate and cognitive and affective correlates among Norwegian athletes. *Journal of Sports Sciences*, 16(2), 153-164. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Ommundsen, Y., Roberts, G. C., Lemyre, P. N., & Treasure, D. (2003). Perceived motivational climate in male youth soccer: relations to social-moral functioning, sportpersonship and team norm perceptions. *Psychology of Sport and Exercise*, 4(4), 397-413. doi: 10.1016/S1469-0292(02)00038-9.
- Patrick, K., Norman, G. J., Collins, K. J., Sallis, J. F., Zabinski, M. F., Rupp, J., & Cella, J. (2004). Diet, physical activity, and sedentary behaviors as risk factors for overweight in adolescence. *Archives of Pediatrics and Adolescent Medicine*, 158, 385-390. Retrieved from <http://ebshost.com/public/medline>.
- Petlichkoff, L. M. (1996). The drop-out dilemma in youth sports. *The child and adolescent athlete* (pp. 418-430). Cambridge, MA, US: Blackwell Scientific Publications.
- Reinboth, M., & Duda, J. L. (2004). The motivational climate, perceived ability, and athletes' psychological well-being. *The Sport Psychologist*, 18, 237-251. Retrieved from <http://ebshost.com/public/PsycINFO>.

- Roberts, G. C., Treasure, D. C., & Balague, G. (1998). Achievement goals in sport, the development and validation of the Perception of Success Questionnaire. *Journal of Sports Sciences*, 16(4), 337-347. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Ruble, D. N., & Goodnow, J. J. (1998). Social development in childhood and adulthood. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology, Vols. 1 and 2* (4th ed.) (pp. 741-787). New York: McGraw-Hill.
- Ryska, T. A. (2003). Sportsmanship in young athletes: The role of competitiveness, motivational orientation, and perceived purposes of sport. *Journal of Psychology: Interdisciplinary and Applied*, 137(3), 273-293. doi: 10.1080/00223980309600614.
- Sabo, D., & Veliz, P. (2008) *Go out and play: Youth sport in America*. East Meadow, NY: Women's Sports Foundation.
- Sarrazin, P., Vallerand, R.J., Guillet, E., Pelletier, L., & Cury, F. (2002) Motivation and dropout in female handballers: a 21-month prospective study. *European Journal of Social Psychology* 32, 395-418. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Scanlan, T. K., Simons, J. P., Carpenter, P. J., Schmidt, G. W., & Keeler, B. (1993). The sport commitment model: Measurement development for the youth-sport domain. *Journal of Sport & Exercise Psychology*, 15, 16-38. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Schlomer, G. L., Bauman, S., & Card, N. A. (2010). Best practices for missing data management in counseling psychology. *Journal of Counseling Psychology*, 57(1), 1-10.
doi:10.1037/a0018082
- Seefeldt, V., Ewing, M., & Walk, S. (1992). An overview of youth sports programs in the United States. *Info AAU*, 63(1), 12-13. Retrieved from <http://ebshost.com/public/SportDiscus>.

- 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 & Exercise Psychology, 14*, 375-391. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Slutzky, C. B., & Simpkins, S. D. (2009). The link between children's sport participation and self-esteem: Exploring the mediating role of sport self-concept. *Psychology of Sport & Exercise, 10*(3), 381-389. Retrieved from <http://ebshost.com/public/SportDiscus>.
- 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: 10.1016/j.psychsport.2007.09.003.
- Smith, R. E., Smoll, F. L., & Barnett, N. P. (1995). Reduction of children's sport performance anxiety through social support and stress-reduction training for coaches. *Journal of Applied Developmental Psychology, 16*(1), 125-142.
- Smith, R. E., Smoll, F. L., & Cumming, S. P. (2007). Effects of a motivational climate intervention for coaches on young athletes' sport performance anxiety. *Journal of Sport & Exercise Psychology, 29*, 39-59. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Smith, R. E., Smoll, F. L., & Curtis, B. (1979). Coach effectiveness training: A cognitive-behavioral approach to enhancing relationship skills in youth sport coaches. *Journal of Sport Psychology, 1*, 59-75. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Smith, R. E., Smoll, F. L., & Hunt, E. (1977). A system for the behavioral assessment of coaches. *Research Quarterly, 48*, 401-407. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Smith, S. L., Fry, M. D., Ethington, C. A., & Li, Y. (2005). The effect of female athletes'

- perceptions of their coaches' behaviors on their perception of the motivational climate. *Journal of Applied Sport Psychology*, 17, 170-177. doi: 10.1080/10413200590932470.
- Smoll, F. L., & Smith, R. E. (2002). Coaching behavior research and intervention in youth sports. In F. L. Smoll & R. E. Smith (Eds.), *Children and youth in sport: A biopsychosocial perspective* (2nd ed., pp. 211-234). Dubuque, IA: Kendall/Hunt.
- Smoll, F. L., Smith, R. E., Barnett, N. P., & Everett, J. J. (1993). Enhancement of children's self-esteem through social support training for youth sport coaches. *Journal of Applied Psychology*, 78(4), 602-610. doi: 10.1037/0021-9010.78.4.602.
- Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin*, 128(5), 825-848. doi: 10.1037/0033-2909.128.5.825.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson Education.
- Theeboom, M., De Knop, P., & Weiss, M. (1995). Motivational climate, psychological responses, and motor skill development in children's sport: A field-based intervention study. *Journal of Sport & Exercise Psychology*, 17(3), 294-311. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Treasure, D. C. (1997). Perceptions of the motivational climate and elementary school children's cognitive and affective response. *Journal of Sport & Exercise Psychology*, 19(3), 278-290. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Treasure, D. C., & Roberts, G. C. (1998). Relationship between female adolescents' achievement goal orientations, perceptions of the motivational climate, belief about success

- and sources of satisfaction in basketball. *International Journal of Sport Psychology*, 29, 211-230. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Ullrich-French, S., & Smith, A. L. (2009). Social and motivational predictors of continued youth sport participation. *Psychology of Sport and Exercise*, 10, 87-95.
- Vazou, S., Ntoumanis, N., Duda, J. L. (2006). Predicting young athletes' motivational indices as a function of their perceptions of coach- and peer-created climate. *Psychology of Sport and Exercise*, 7, 215-233. doi: 10.1016/j.psychsport.2005.08.007.
- Waldron, J. J., & Krane, V. (2005). Motivational climate and goal orientation in adolescent female softball players. *Journal of Sport Behavior*, 28(4), 378-391. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Walker, B. W., Roberts, G. C., & Harnisch, D. (1998). Predicting self-esteem in a national sample of disadvantaged youths. *Journal of Sport and Exercise Psychology*, S20. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Walling, M., Duda, J. L., & Chi, L. (1993). The Perceived Motivational Climate in Sport Questionnaire: Construct and predictive validity. *Journal of Sport & Exercise Psychology*, 15(2), 172-183. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Weston, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, 34(5), 719-751. doi: 10.1177/0011000006286345.
- White, S. A. (1998). Adolescent goal profiles, perceptions of the parent-initiated motivational climate, and competitive trait anxiety. *The Sport Psychologist*, 12(1), 16-28. Retrieved from <http://ebshost.com/public/PsycINFO>.

- White, S. A., & Duda, J. L. (1994). The relationship of gender, level of sport involvement, and participation motivation to task and ego orientation. *International Journal of Sport Psychology*, 25(1), 4-18. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Williams, J., Jerome, G., Kenow, L., Rogers, T., Sartain, T., & Darland, G. (2003). Factor structure of the Coaching Behavior Questionnaire and its relationship to athlete variables. *The Sport Psychologist*, 17(1), 16-34. Retrieved from <http://ebshost.com/public/SportDiscus>.
- Wong, E. H., & Bridges, L. J. (1995). A model of motivational orientation for youth sport: Some preliminary work. *Adolescence*, 30, 437-452. Retrieved from <http://ebshost.com/public/PsycINFO>.
- Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, 34(6), 806-838. doi: 10.1177/0011000006288127.