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# Examining The Factor Structure, Concurrent Validity, And Predictive Validity Of The Social Motivational Orientations In Sport Scale (Smoss) In An Early Adolescent Sample

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EXAMINING THE FACTOR STRUCTURE, CONCURRENT VALIDITY, AND  
PREDICTIVE VALIDITY OF THE SOCIAL MOTIVATIONAL ORIENTATIONS IN  
SPORT SCALE (SMOSS) IN AN EARLY ADOLESCENT SAMPLE

by

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## ABSTRACT

Research demonstrates that youth are motivated to initiate and continue participation in sport for social reasons. Allen (2003, 2005) developed the Social Motivational Orientations in Sport Scale (SMOSS) to help facilitate the measurement of social goals in sport. This instrument consists of three subscales—affiliation (i.e. have fun, make friends; seven items), recognition (i.e. receive recognition from others about sport involvement or ability; four items), and status (i.e. belong to the popular group; three items)—designed to measure these aspects of participants’ social motivations to sport involvement. However, the SMOSS has only been used among high school students and older adults in either the physical education (P.E.) or sport setting. The purpose of this study was twofold: (1) to explore social goals in sport using the SMOSS in a crucial yet understudied sample of underrepresented early adolescents; (2) and for physical activity more broadly (i.e. not P.E. class or organized sport). Participants ( $N = 180$ ;  $M$  age = 12.19 years; 43.3% male; 72.8% Black) participated in a 12-week socially-based physical activity intervention and provided responses to the SMOSS at pre- and post-intervention. Results demonstrated the SMOSS’s ability to measure social goals in this sample of youth, though an exploratory factor analysis failed to replicate Allen’s (2005) three-factor model and instead yielded a two-factor model consisting of one dual social affiliation/recognition factor and one social status factor. Multiple regression analyses demonstrated support for the predictive validity of the SMOSS and further differentiated between these two factors through their ability to predict distinctly different outcomes at

post-intervention. Findings suggest that, during this stage of development and in this subset of youth, affiliation/recognition goals to general physical activity function adaptively on early adolescents' physical and psychosocial health via fewer peer problems and emotional problems; and provide further evidence that participate in physical activity to heighten social status has adverse effects on youth psychosocial functioning by means of increased peer problems. Directions for future research and applied applications are discussed.

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# CHAPTER 1

## INTRODUCTION

Engagement in physical activity across the childhood and adolescent years is associated with multiple physical and psychological benefits (Salvy et al., 2009). Sports participation, and other forms of physical activity, have been linked to higher rates of academic achievement, increased educational support (Barber, Eccles, & Stone, 2001; Eccles, Barber, Stone, & Hunt, 2003), less drug use (Page, Hammermeister, Scanlan, & Gilbert, 1998), and lower rates of depression (Zarrett et al., 2008), among other benefits. Moreover, youth physical activity is a notable predictor of physical activity through adulthood (Sallis et al., 1992; Tucker et al., 1995), helping to protect against obesity and related diseases. These benefits provide a foundational rationale for increased emphasis on exercise promotion in children. However, despite the importance of physical activity on development, declines in physical activity engagement are observed through adolescence, often beginning in *early* adolescence (Sallis, 2000; Dumith, Gigante, Domingues, & Kohl, 2011), and this is especially true for youth of minority status (Basch, 2011). Increased understanding of youth motivation to physical activity is critical to help prevent these declines observed during early adolescence in minority youth. Although youth have been found to consistently report social reasons for initial and continued participation in sports and related physical activity (e.g., be with their friends, make new friends, etc.; Scanlan, Carpenter, Lobel, & Simons, 1993; Allen, 2003, 2005; Schilling & Hayashi, 2001), little research has examined youth social motivations to



physical activity participate. It is important to establish an adequate and reliable tool to advance our understanding of what social aspects of physical activity motivate youth to continue to participate in sport and other physical activities during this developmental period. Such a tool will aid intervention development and practice by identifying salient social aspects of physical activity that are critical to informing how best to get individual subsets of youth to initiate and continue their engagement in physical activity.

Sports is the primary context in which youth participate in physical activity (Fox, Barr-Anderson, Neumark-Sztainer, & Wall, 2010) and youth motivation for physical activity has been primarily studied through a measurement of perceived ability/competence and task/ego orientations (Hodge, Allen, & Smellie, 2008; Allen, 2003; Duda, 2001; Weiss & Chaumeton, 1992). Despite research identifying the presence of conspicuous social forces affecting youth participation in sport (for review, see Weiss, 2013), much of the sport motivation literature has focused on the two major goal orientations of Achievement Goal Theory (AGT; Duda & Nicholls, 1992): Task and Ego orientations. This singular vantage point has provided limited information on the various socially-based motivational orientations (i.e. social aspects of sport/physical activity motivating individuals to participate) youth may have for participating in sports and other physical activities. Allen (2003; 2005) argued that this lack of research was at least partially due to the absence of a sufficient and psychometrically sound measure specifically constructed to assess social motivational orientations to sport involvement. Consequently, the Social Motivational Orientations in Sport Scale (SMOSS; Allen, 2003; 2005) was developed to facilitate the measurement of social goals in sport participation independent of those implicated in other domains (i.e. physical ability, competency,

performance feedback, improving appearance). The SMOSS is a 14-item measure that introduced three socially-based motivational orientations towards sport: affiliation (i.e. participate to have fun, make friends), recognition (i.e. participate to receive recognition from others about sport involvement or ability), and status (i.e. participate as a means to heighten social status). It was, and continues to be, the only available tool used to measure social motivational orientations to sport. However, to date, the SMOSS has not been used to assess participants' social motivational orientations outside of organized sport (i.e. for physical activity more broadly); nor has it been tested in an early adolescent sample, or among a sample of predominately underserved youth (low income, minority status) where developmental, cultural, and resource-based variations may influence motivational orientations towards physical activity/sports (Vierling, Standage, & Treasure, 2007). As such, establishing and validating critical measurement tools (i.e. the SMOSS) to help identify various motivations driving different youth populations to initiate and sustain engagement in physical activity is essential to combatting the youth obesity epidemic in the western world (Wang & Beydoun, 2007).

The current study sought to contribute to our understanding of youth social motivational orientations towards physical activity by examining the factor structure, concurrent validity, and predictive validity of the SMOSS in a critical yet understudied sample of underrepresented early adolescents.

## **1.1 ACHIEVEMENT GOAL THEORY**

The large majority of research investigating motivation to engage in sport is rooted in Achievement Goal Theory (Nicholls, 1989), asserting that all individuals are

fundamentally motivated to demonstrate their competence or achievement when performing a task (Sit & Linder, 2005). These motivations translate to two major goal orientations: Task (i.e. competence) and Ego (i.e. achievement). The former “facilitates the autonomy of behavior” (Ntoumanis, 2001, p. 400) and is intrinsic in nature; participation is motivated by mastery and learning, and success is self-defined by the individual (Nicholls, 1989; Hodge, Allen, & Smellie, 2008). The latter is motivated more by extrinsic outcomes (e.g., receiving anticipated praise, outperforming peers, social approval); naturally, success is defined relative to the perceptions of others (Ntoumanis, 2001; Nicholls, 1989; Hodge et al., 2008).

Extending past literature (i.e. Lewthwaite & Piparo, 1993), later research identified social goals above and beyond social approval (e.g., social acceptance such as popularity, or quality time with friends, as well as positive social experiences such as enjoyment with friends and friendship development; Schilling & Hayashi, 2001; Allen, 2008) indicating that social motivations are multidimensional. Moreover, this later work linked individual’s social experiences and their AGT-based motivation orientations towards sports (Allen, 2003, 2005), and further validated past research that noted the influential role social components of sport participation play in determining the caliber of participants’ holistic experience (i.e. altering competency beliefs, positive feedback, reinforcement, modeling, etc.; Brustad, 1993; Duncan, 1993; Wylleman, 2000). In particular, these previous studies suggest that critical social constituents, such as the interpersonal interactions with peers, parents, and coaches involved in youth sport participation (Smith & Smoll, 1990; Wylleman, 2000, Smith, 2003) offer salient contributions to participants’ overall sport experience (i.e. successful or not) and provide

the underlying rationale for investing in a more in-depth examination of social goals in sport.

## **1.2 SOCIAL MOTIVATIONAL ORIENTATIONS IN SPORT**

Many researchers have stressed that identifying and examining social goals is a task integral to understanding both goal-driven behavior and the underlying motivational orientations that justify it (Allen, 2003; Hodge et al., 2008). Allen's (2003, 2005) social motivation theory asserts that sports/physical activities are particularly rife with opportunities to fulfill multiple social goals simultaneously, and that participants are motivated to participate in order to fulfill these achieve these goals (Hodge et al., 2008). As noted by Wallhead, Garn, and Vidoni (2013), social motivation theory hinges upon the notion that individuals are drawn to specific social contexts and interactions that supply the opportunity to "develop, pursue, and ultimately fulfill social goals" (p. 429). For certain participants, a successful sport/physical activity experience may be defined solely by the extent to which their social goals are fulfilled (Allen, 2005). Research involved with the construction of the SMOSS (Allen 2003; 2005) identifies three specific social goals and, subsequently, motivational orientations involved in sport participation, derived largely from past examinations of the social approval goal proposed by Maehr and Nicholls (1980), and Allen's (2003) previous work. These social constructs include: affiliation, recognition, and status.

An affiliation orientation is intrinsic in nature; although self-referenced, success within this domain reflects overall enjoyment during sport. This enjoyment results from the fulfillment of social relationships as a function of the opportunities sport participation

provides for establishing social connections and facilitating stronger relationship ties. The remaining two orientations—recognition and status—are involved with “gaining approval or validation of the self from social interactions in the sport context” (Allen, 2005, p. 156). These orientations are extrinsic in nature, function as distinctly different theoretical mechanisms, and parallel the more recent postulations that the performance-based ego orientation of Achievement Goal Theory is two different constructs: a goal to *obtain* positive judgments from others, and a goal to *avoid* negative judgments from others (Elliot & Church, 1997; Papaioannou, 2006). The recognition orientation reflects the degree to which individuals are goal oriented towards participation in sport because of the opportunities to receive social recognition from either their involvement in sport, their ability, or both (e.g., “when others tell me I performed well”; “my ability impresses others”). Status orientation represents individuals whose goals for participation emphasize opportunities for positive change in social status resulting from sport participation (e.g., “I am part of the ‘in’ crowd”; Allen, 2005). In contrast to the affiliation orientation, success within both the recognition and status orientations is largely contingent upon validation from others (Allen, 2005; Wallhead et al., 2013); it is then hypothesized that the direction of behavioral and motivational outcomes stemming from these two motivational orientations is heavily dependent upon subjective contextual factors (i.e. setting, social environment; Hodge et al., 2008).

Developmentally, the nature of the sports context, particularly in childhood, provides participants the opportunity to meet the needs of the three major areas outlined in social motivation theory. Noted by Wallhead and colleagues (2013), the value placed on teamwork within the sport setting make it fertile ground for the development of an

affiliation orientation toward sport; the role and duty of participants often overlap in team-oriented games, too, allotting even more opportunity for this fulfillment. In a similar vein, team-oriented activities naturally allow for the actualization of the recognition orientation, especially as duration and involvement increase. Lastly, and analogous to several other social contexts, sport participation provides diverse possibilities for augmentation of participant social status and, correspondingly, the heterogeneity of intra-class social cliques (Wallhead et al., 2013; O'Donovan, 2003). However, further validation of these claims is warranted due to the sheer lack of research examining these *specific* motivational orientations (i.e. affiliation, recognition, status) in the team sport context.

A less-studied avenue of social goal fulfillment involves those present in general physical activity and exercise (i.e. not sports; Weinberg et al., 2000). However, evidence indicates that youth are more active when with their peers and friends regardless of whether the activity is organized (i.e. sport) or not (i.e. spontaneous play; Pellegrini, Blatchford, Kato, & Baines, 2004; Pelligrini & Smith, 1998; Salvy et al., 2009), suggesting that social motivations (i.e. affiliation, etc.) are at work no matter the context. The sustained finding that youth with higher peer presence in their lives report more engagement in physical activity (Beets, Vogel, Forlaw, Pitetti, & Cardinal, 2006; Duncan, Duncan, & Strycker, 2005; Salvy et al., 2009) provides additional support for the salience of social goals irrespective of context and further underscores the importance of the current study.

Some recent examinations of social goals and orientations in both sport and P.E. class have used either individual subscales of SMOSS or the scale in its entirety (e.g.,

Garn, McCaughtry, Shen, Martin, & Felhman, 2011; Garn, Ware, & Solomon, 2011; Wallhead et al., 2013; Garn & Wallhead, 2015), and provide support for Allen's (2003) social motivation theory as an adequate vantage point for examining individuals' social experiences in sport. However, noticeable gaps exist in the utility of the SMOSS. In particular, the SMOSS has not been used to examine the nature of social motivations during early adolescence, or among underrepresented youth (i.e. minority status, low income), nor have researchers examined a broad array of physical activity opportunities in which youth engage beyond that of sport or physical education. Each of these characteristics at both the individual and contextual level, respectively, are likely to influence the structure and prevalence of social motivations for physical activity. The current study aims to address these gaps in research by examining social motivational orientations to sport among an underrepresented, early adolescent sample. An additional aim of the current study is to extend our understanding of youth motivations to include a broader array of physical activity opportunities (i.e. not just organized sport or P.E. class) via measurement of self-reported social goals.

### **1.3 PAST VALIDATION OF THE SMOSS**

Allen's (2003) initial introduction of the SMOSS included two motivational orientations—affiliation and social validation—that made up a 15-item questionnaire aiming to measure participants' motivational orientations toward sport. However, exploratory factor analyses based on responses from a sample of high school girls ( $N = 100$ ;  $M$  age = 14.67 years) failed to confirm the hypothesized 2-factor structure and instead yielded a 3-factor solution that included the initial affiliation orientation (7 items), but separated the social validation orientation into the current recognition (4 items) and

status (4 items) orientations, resulting in three distinctly separate subscales. This prompted Allen's (2003) initial reinforcement of individuals' social goals for sport participation in addition to providing evidence for the past-hypothesized notion that social goals in sport are multi-faceted and interwoven. While Allen (2003) contended that results of the study "shed some light on the contribution that a social motivation approach makes toward understanding the view of adolescents" (p. 563-4), obvious generalizability concerns existed given the homogeneity of the sample.

A subsequent study conducted by Allen (2005) examined the factor structure and construct validity of the SMOSS in a sample of middle class high school students ( $N = 244$ ;  $M$  age = 13.88 years) located in the United Kingdom. Confirmatory factor analysis assessed three separate models employed to validate the results of Allen's (2003) early study. A poor fit was observed for the first two models she assessed. Model 1 tested whether the SMOSS captured a single social motivational orientation, indicative of early social motivation literature. Model 2 tested whether two motivational orientations existed, as was originally hypothesized by Allen (2003). Results concerning model 3, the tri-orientation model, yielded better results, yet did not demonstrate statistically appropriate fit. Identification and removal of a single item (item 14: "I am one of the more popular players") produced acceptable fit. To assess construct validity, Duda and Nicholls' (1992) intrinsic interest scale was used to examine the extent that intrinsic interest (5 items) and boredom (i.e. the opposite of interest; 3 items) in sport were correlated to items on the SMOSS. Results revealed overall acceptable convergent validity, where intrinsic interest in sport was significantly positively correlated to all three motivational orientations on the SMOSS. Though only one SMOSS subscale is self-



referenced (i.e. intrinsic) in nature (affiliation), Allen (2005) rationalizes this finding by stating that adolescents' intrinsic interest is maintained in part *because* of the opportunities sport participation provides for the “development, reinforcement, and demonstration of social relationships” (p. 157), no matter what type. However, noticeable theoretical gaps exist in this reasoning. Boredom in sport was significantly negatively correlated to the affiliation and recognition orientations, but non-significantly negatively correlated to the status orientation (Allen, 2005). Though Allen's (2005) explanation includes emphasis on the importance of external recognition for interest in sport (i.e. this “suggests that participants who do not feel their abilities are being recognized by significant others may be less enamored with their sport experience” (p. 157)), a similar result would be expected for the recognition subscale, as both orientations are externally-referenced. Also, if the intrinsic interest and boredom scales, respectively, were specifically chosen to examine convergent validity because they are opposite constructs, on some level it is expected that they should yield reciprocal results. An additional concern pertains to Allen's (2005) weak, albeit significant correlations between boredom and the affiliation and recognition subscales, which casts doubt over whether this analysis truly demonstrates the SMOSS's discriminant qualities. Lastly, while Allen (2005) observed generally moderate correlations between subscales ( $\alpha = .54-.72$ ), worth noting is that the highest intersubscale correlation was between the affiliation and status subscales, suggesting that making friends and improvements in social status are perhaps to some degree enmeshed with one another or function analogously in this population.

Additional studies using the SMOSS have demonstrated, albeit incipiently, theoretical consistency and psychometric validation (i.e. convergent and predictive

validity) among different sample demographics (i.e. predominantly White high school students, African American high school students; older (Masters) athletes; Hodge et al., 2008; Sage & Kavussanu, 2010; Garn, Ware, & Solomon, 2011a; Garn, McCaughtry Shen, Martin, & Fahlman, 2011b; Wallhead, Garn, & Vidoni, 2013; Garn & Wallhead, 2015) in both physical education and sports settings.

**1.3.1 PHYSICAL EDUCATION SETTING** Garn and colleagues (2011a, 2011b, 2013, 2015) used the SMOSS to measure social motivational orientations in high school students enrolled in P.E. class in a series of four studies. Participants in all four studies were approximately the same age (*M* age ranged from 14.60-15.91 years) and ethnicity (predominately White), with the exception of Garn et al., (2011) whose sample was predominantly (~80%) African American, but still of high school age. To our knowledge, this is the only study to have investigated social motivational orientations in underrepresented youth, though no objective information was presented regarding participant socioeconomic status. As expected, each SMOSS subscale was significantly related to one another in all four studies, though there is otherwise minimal overlap between other constructs examined.

Based on Allen's (2005) findings and the nature of each social motivational orientation, it is expected that an affiliation orientation would be generally related to internally-referenced variables (i.e. competency, mastery, effort, enjoyment, relatedness) and more adaptive subsequent behaviors, and unrelated to externally-referenced variables (i.e. performance). As expected, an affiliation orientation was significantly related to, and positively predicted feelings of relatedness in the two studies that measured this construct (Garn & Wallhead, 2015; Wallhead et al., 2013). Other anticipated findings in regard to

an affiliation orientation include a significant relationship with competency in P.E. class (Garn & Wallhead, 2015), a mastery approach in P.E. (Garn et al., 2011a), and social responsibility (i.e. following directions of the teacher; Garn et al., 2011b); a significant predictor of enjoyment in P.E. (Wallhead et al., 2013); and no relationship with disruptive behavior in P.E. (Garn et al., 2011b). Of note, none of the four studies provided conflicting evidence for any the above findings. However, either unrelated or contrary to expectations, one study found a significant positive relationship between an affiliation orientation and a performance approach and performance avoidance (i.e. wanting to avoid doing poorly; Garn et al., 2011a). This may suggest that, to some degree, performing well (or not poorly) may aid the development of friendships, possibly through some vehicle of social desirability. Two of the four studies measured effort in P.E. (Garn et al., 2011a; Garn et al., 2011b) and observed a significant positive relationship between an affiliation orientation and self-reported effort in P.E. class, although, unexpectedly, it did not significantly predict effort levels in either study. Lastly, and again unanticipated, the only study measuring levels of physical activity found a significant relationship between an affiliation orientation and self-reported leisure time physical activity, though it was not a significant predictor of this measure of physical activity (Wallhead et al., 2013).

Recognition is externally-referenced and thus expected to be related to constructs that facilitate recognition from others (i.e. performance). However, findings regarding this orientation across all four studies are complex, likely because various actions can illicit recognition from peers depending on the specific context; for this reason, Garn and

colleagues (2011b) refer to a recognition orientation as having the “most complex” relationship with participants’ behavior in P.E. (p. 419).

Similar to an affiliation orientation, findings yielded a significant positive relationship between the recognition orientation and feelings of relatedness (Garn & Wallhead, 2015; Wallhead et al., 2013) and competency in P.E (Garn & Wallhead, 2015), respectively. Recognition was also a significant predictor of competency in one study (Garn & Wallhead, 2015) and significantly predicted relatedness in another study (Wallhead et al., 2013). This may suggest that recognition from peers elicits feelings of connection with those individuals while also, as expected, contributing to individuals’ perception of their ability. Other notable findings include a positive significant relationship with both a mastery *and* performance approach (Garn et al., 2011a), respectively, and self-report effort levels in P.E. (Garn et al., 2011a, 2011b); and a positive relationship with, and predictive qualities for, both enjoyment in P.E. and self-reported physical activity (Wallhead et al., 2013). While recognition and effort in P.E. were related in both studies measuring this construct, recognition predicted effort levels in P.E. in one study (Garn et al., 2011b) but did not predict effort levels in the other (Garn et al., 2011a). One other interesting finding included a positive relationship between a recognition orientation and both social responsibility and disruptive behavior in P.E., respectively (Garn et al., 2011b). Though recognition did not significantly predict disruptive behavior, these are largely opposite constructs and may indicate that participants’ recognition goals have multiple pathways of fulfillment (i.e. by exhibiting either adaptive or maladaptive behavior), depending on the context.

Similar to a recognition orientation, status is externally-referenced and expected to be related to constructs that allow for opportunities to climb the social hierarchy (i.e. performance) and unrelated to internally-referenced constructs (i.e. mastery). Similar to both the affiliation and recognition orientations, respectively, status had a positive significant relationship with effort in P.E. class in the two studies measuring this construct (Garn et al., 2011a, 2011b), and significantly predicted effort levels in one of those studies (Garn et al., 2011a) but not the other (Garn et al., 2011b). As expected, status was unrelated to a mastery approach but significantly related to a performance approach in the study measuring those constructs (Garn et al., 2011a). Like the recognition subscale, status was significantly related to and predicted self-reported physical activity in one study (Wallhead et al., 2013); the same study also found significant positive relationships between a status orientation and feelings of relatedness and enjoyment in P.E., respectively, though it was not a significant predictor of either construct.

The status orientation is ultimately distinguished by its relationship with, and ability to predict disruptive behavior in P.E., prompting researchers to define it as the orientation with the “least adaptive relationship” with involvement in P.E. class (Garn et al., 2011b, p. 419). However, the same study also observed a significant relationship with social responsibility, possibly highlighting the notion that, like the recognition orientation, status goals can be fulfilled via multiple pathways.

**1.3.2 SPORT SETTING** Two studies (Hodge et al. 2008; Sage & Kavussanu, 2010) used the SMOSS to examine social motivational orientations to sport in widely different samples. Hodge and colleagues (2008) used a sample of New Zealand Masters

athletes (*M* age = 48 years), while Sage and Kavussanu (2010) used a sample of mostly White male adolescent football players in the U.K. (*M* age = 13.37 years). Similar to the P.E. context, little continuity exists across constructs examined by each study.

Hodge and colleagues (2008) observed a positive relationship between the affiliation orientation and perceived belonging in, enjoyment in, and commitment to sport; this was the most endorsed social motivational orientation among this sample of older athletes, confirming Allen's (2003) original argument that social goals are integral in explaining the overall motivations to engaging in sport in older adults. As expected, additional findings from Hodge et al. (2008) included a significant positive relationship with task (i.e. mastery) and a significant negative relationship with ego; similarly, in this population of older athletes, affiliation had no relationship with perceived ability in sport. Among the high school football players, Sage and Kavussanu (2010) yielded a strong positive relationship between an affiliation orientation and multiple other related constructs, including moral identity and "eudaimonia" (i.e. enjoyment, happiness), and found that an affiliation orientation was a positive significant predictor of the latter construct.

Though affiliation was the strongest endorsed (i.e. highest mean score) social motivational orientation among older athletes, these athletes also evidenced a "substantial element of social recognition" (Hodge et al., 2008, p. 180). Recognition was significantly related to task, ego, perceived ability in sport, perceived belonging in sport, and commitment to sport, but unrelated to enjoyment in sport (Hodge et al., 2008). These mixed results are similar to those observed in the P.E. context indicating that the recognition orientation may be "middle" ground between the affiliation and status

orientations, as it is related to both internally- (i.e. task/mastery) and externally-referenced (i.e. ego) constructs. Among adolescent football players, a recognition orientation was highly similar to the affiliation orientation; significantly positively related to both moral identity and eudaimonia, and a significant predictor of the latter construct (Sage & Kavussanu, 2010).

Findings from Sage and Kavussanu (2010) suggest there are little distinctions between the affiliation and recognition orientations among high school athletes. However, among an older active adult sample, Hodge and colleagues' (2008) findings indicate that a major distinction in the sport context between the two orientations appears to be recognition's dual relationship with both an ego and task orientation, respectively; and its non-relationship with participants' enjoyment in sport. Though this contradicts findings from Wallhead et al. (2013) in the P.E. setting where recognition was significantly related to, and a significant predictor of enjoyment in P.E., these findings may suggest that older athletes' enjoyment is derived largely from the fulfillment of affiliation-oriented goals as opposed to those involving recognition from others; or there is an important distinction between the individual and contextual physical activity experiences provided in P.E. as compared to sports.

While the status orientation was the least prevalent orientation in their sample of older athletes, Hodge et al. (2008) found a significant positive relationship between status-oriented athletes and perceived ability in, belonging in, and commitment to sport, but no relationship with enjoyment in sport. As expected, status was unrelated to a task-oriented (i.e. mastery) approach and significantly positively related to an ego approach (Hodge et al., 2008). Lastly, Sage and Kavussanu (2010) found status significantly

positively related to eudaimonia but, unlike the other two SMOSS subscales, was not a significant predictor of eudaimonia nor was it related to moral identity.

Results from these two studies help demonstrate the distinction between the status orientation and the recognition orientation, despite both being externally-reference oriented in nature. Most notably, status is not related to enjoyment in sport, is it not a predictor of eudaimonia (whereas both affiliation and recognition are), and is significantly related to an ego approach to sport but unrelated to a mastery approach (whereas affiliation is significantly related to a mastery approach and significantly negatively related to an ego approach; and recognition is significantly related to both a mastery and ego approach).

#### **1.4 SYNTHESIS OF PREVIOUS RESEARCH**

In summary, results from these six studies engender several loose-fitting trends among the three motivational orientations measured by the SMOSS, due largely to the lack of empirical research examining these specific social motivations. Foremost, all three motivational orientations appear to have, to various degrees, a positive relationship with effort, feelings of relatedness, enjoyment (excluding older athletes with a status orientation in Hodge et al., 2008), and leisure time physical activity. However, salient differences exist among motivational orientations in participants' approaches to sport, perhaps best represented on a task/ego-based continuum.

First, affiliation-oriented individuals appear largely, though not exclusively, mastery-based (i.e. task-based) in their approach to sport, which likely facilitates, albeit partially, several other adaptive constructs (i.e. enjoyment, commitment, perceived



belonging, etc.). Second, recognition-oriented participants present with a mix of mastery- and performance-based goals; its positive relationship with both disruptive behavior and social responsibility further illustrate why researchers described it as “complex.”

However, when aggregated, these findings may ultimately indicate that recognition goals are fulfilled as a result of multiple types of behavior that are context-specific. Third, status-oriented participants present dominantly with an ego-based approach to sport and physical activity. This orientation is strictly externally-referenced; its frequent non-relation to enjoyment in sport is unsurprising and ultimately maladaptive, as the extent to which participants’ status goals are fulfilled is often ill-defined and determined solely by and in relation to others.

Worth noting is the innate confound present in several studies examining social motivational orientations using the SMOSS: the nature of the P.E. context. Allen (2003) details the convenience of sport participation in its ability to help individuals meet multiple social goals simultaneously; however, participation in P.E. class is most often either forced/required or coercive (i.e. class grade contingent upon participation) and its focus, by design, is on the development and mastery of motor skills most often assessed through performance-based criteria. Because these aspects of the P.E. context inherently lend themselves to a decreased emphasis on the social aspects of sport participation, this context may not be the most appropriate for the examination of social goals present in sport performance. Similarly, the sport context in later adolescence (opposed to early adolescence) is typified by competition (i.e. emphasis on performance) and may inherently lend itself to more externally-referenced orientations to sport (i.e. status or recognition). While these details certainly do not invalidate the results of these studies,

they may signal a lack of generalizability of their findings to other sport/physical activity participatory contexts. Overall, these considerations supply rationale for examining social motivational orientations in a setting where participation is not forced, active play is encouraged but not required, and social goals are emphasized.

### **1.5 EXAMINING SOCIAL GOALS IN EARLY ADOLESCENCE**

Early adolescence, perhaps more so than any other developmental stage, is defined by increasing complexity in multiple developmental areas (Franco & Levitt, 1998). In addition to obvious physical and cognitive changes outlined in previous literature, this period is best characterized by an attempt (or struggle) to gain independence and personal choice over several aspects of one's life (Eccles et al., 1993; Small, Eastman, & Cornelius, 1988). Most notably, early adolescents undergo considerable social change marked by broader peer networks and more intense relationships with peers that ultimately contribute to their self-concept and overall identity development via social feedback (i.e. input, cues, peer-referencing, etc.; Wenz-Gross, Siperstein, & Parker, 1997; Elias, Gara, & Ubriaco, 1985; Brinthaupt & Lipka, 2002); research suggests that peer social support during this time can function protectively against the distress caused by this social turbulence (Hirsch & Dubois, 1992; Wenz-Gross, Siperstein, Untch, & Widaman, 1997; Malecki & Demaray, 2006). More generally, the buffering effects of social support on stress during this time suggest that the quality of social support in early adolescence plays a role in adolescents' overall psychosocial development (Rubin et al., 2004), and that early adolescence may be an "ideal time to intervene in a preventative way" (Rueger, Malecki, & Demaray, 2008, p.

496) as a means of encouraging healthy psychological outcomes throughout adolescence (Colarossi & Eccles, 2003).

Examining the social factors entangled in a period defined by social transition is an endeavor vital to the comprehensive understanding of early adolescents' social experiences. The sport and physical activity contexts (e.g., school-affiliated sports, extracurricular activities, after-school programs, P.E. class) provide a unique opportunity for the simultaneous intersection and fulfillment of multiple social goals during early adolescence, including the building of peer relationships, personal reflections on ability, value development through peer recognition, and the potential for heightened social status. Despite these opportunities and their potential salience in early adolescents' psychosocial development, there is a dearth of research examining the social motivational orientations to sport and physical activity in early adolescence, and this void should be viewed as missing an opportunity to identify and positively exploit both physical (i.e. increased exercise via sport or physical activity involvement) and psychosocial (i.e. forming of relationships and increase peer support) elements that could contribute to healthy youth development. Accordingly, the rationale for examining these latent social constructs during this developmental period is rooted in three major premises: (1) early adolescence is a salient period for psychosocial development (Mulhall, Reis, & Begum, 2011); (2) the sport and physical activity contexts afford unique and cross-cutting opportunities for early adolescents to demonstrate their social goals and motivations, and these may reflect their broader social values that can inform our more general understanding of youth motivations during this developmental stage; and (3) identifying what social motivations are present in early adolescents can yield information essential to

the promotion of physical activity and associated positive behaviors in these youth through adolescence and into adulthood.

## **1.6 HYPOTHESES**

The few studies published after Allen's (2005) original assertion that "further evidence of the psychometric properties of the scale is needed to determine the validity and reliability of this scale" (p. 149) have helped validate the SMOSS's psychometric reliability in the sport and P.E. settings (Hodge et al., 2008; Sage & Kavussanu, 2010; Garn, Ware, & Solomon, 2011; Garn, McCaughy Shen, Martin, & Fahlman, 2011; Wallhead, Garn, & Vidoni, 2013; Garn & Wallhead, 2015). However, despite the evidence of convergent and predictive validity of the SMOSS provided by the aforementioned studies, empirical attestation for the SMOSS as a satisfactory and psychometrically sound measurement tool for underrepresented early adolescents is absent from the social motivational literature. Moreover, the SMOSS has been used specifically for sport and P.E. settings, but has not yet been applied to youth motivation to engage in broader physical activity. Given the increase in development and implementation of physical activity interventions to combat adolescent obesity, access to a psychometrically reliable instrument to better understand early adolescents' social motivation orientations towards physical activity is critical to developing efficacious interventions for high-risk groups. Thus, the purpose of the current study was to examine the unique factor structure, concurrent validity, and predictive validity of the SMOSS in our sample of underrepresented early adolescents.

The current study had three primary hypotheses. First, it was predicted that exploratory factor analyses (EFA) would yield three distinct latent factors representing three social motivational orientations (i.e. affiliation, recognition, status), as was found in Allen's (2005) most recent conceptualization of the SMOSS. Second, we hypothesized that all latent factors derived from the EFA would yield significant positive correlations to scores on a measure gauging purely social reasons for engaging in physical activity, thus demonstrating adequate concurrent validity. Third, we hypothesized that the latent SMOSS factors derived from our EFA would predict, in a coherent fashion, future outcomes in four different domains based on the correspondence between the internally- or externally-referenced nature of each motivational orientation and outcome, respectively (i.e. high motivation to make friends while participating in physical activity (i.e. affiliation orientation would predict fewer peer problems).

## **CHAPTER 2**

### **METHOD**

#### **2.1 PARTICIPANTS**

The current study used pre- and post-intervention data from three cohorts of the Connect through PLAY project (PI: Nicole Zarrett), a 12-week socially-based physical activity intervention for underserved (i.e. minority status) middle school youth attending afterschool programs. Connect through PLAY's primary aim was to increase levels of physical activity in youth by strengthening the overall social-motivational climate of the afterschool program. Data were collected from six middle school afterschool programs (three intervention, three control) located in a 40-mile radius of Columbia, South Carolina. The study utilized a random assignment waitlist-control design such that the control school was expected to receive the intervention the following academic semester (i.e. Fall to Spring). Data for the current study used pre-intervention data only to examine the factor structure and concurrent validity of the SMOSS, respectively; both pre- and post-intervention data are used to examine the predictive validity of the SMOSS. IRB approval was granted for the study.

The study consisted of 201 participants in the 6<sup>th</sup> to 8<sup>th</sup> grade between the ages of 11 and 14. However, due to variable amounts of missing data on measures used in the study, actual participant numbers vary by analysis. All participants received parental consent to participate and assented to the study. No participants dropped out of the study.

Our final sample used to examine the unique factor structure of the SMOSS was 180 participants (*M* age = 12.19 years; 43.3% (78) male; 72.8% (131) Black). The schools' free or reduced lunch eligibility rates ranged from 57% to 98%.

## **2.2 PROCEDURE**

Researchers administered questionnaires to participants after obtaining parental consent and youth assent. No data were collected from youth who did not provide these two components. Participants completed a battery of self-report measures prior to the intervention; they also provided demographic information (i.e. gender, race/ethnicity, age, grade, lunch status). Participants were administered the same measures twelve weeks later following the intervention. Certified research assistants assisted any participants who had questions regarding item content of the measures or requested help reading questionnaire items.

## **2.3 MEASURES**

**Social Motivational Orientations.** Participants' social motivational orientations were measured using the Social Motivational Orientation in Sport Scale (SMOSS; Allen 2003, 2005). As is customary with the SMOSS (Sage & Kavussanu, 2010), items were slightly altered to fit the context of the afterschool physical activity intervention and the phrase "I feel things have gone well in my activity when..." preceded each item. Participants indicated whether they agreed or disagreed with the 14 items on a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree). Allen's (2005) scale consists of three subscales and, subsequently, three distinct social motivational orientations: affiliation (7 items; i.e. "...I make some good friends in the program),

recognition (4 items; i.e. "...others are impressed by my ability"), and status (3 items; "...I am the center of attention"). Only pre-intervention SMOSS scores are used in our analyses. Multiple studies have demonstrated adequate reliability and validity of the SMOSS in high school and Master's level athletes, though no studies to date have examined its psychometric properties in a sample of underrepresented early adolescents. These studies have also observed acceptable ( $\alpha = .75$ ) to excellent ( $\alpha = .95$ ) levels of internal consistency.

**Motivation to Engage in Physical Activity.** We used baseline scores on the 5-item Social subscale of the Motivations for Physical Activity Measure-Revised (MPAM-R; Ryan, Frederick, Lepas, Rubio, & Sheldon, 1997) to examine the concurrent validity of the SMOSS. Additionally, the six-item Appearance subscale of the MPAM-R was used to assess the predictive validity of the SMOSS. The Social subscale is associated with intrinsic motivation to engage in physical activity (Frederick & Ryan, 1993) and measures the extent to which participants engage in physical activity to satisfy their need for affiliation or social connectedness. In contrast, the Appearance subscale is extrinsic in nature. It is best conceptualized as an outcome of being physically active and gauges the extent to which participants are physically active as a means of improving their physique. The MPAM-R employs a 5-point scale from 1 ("Not at all true for me") to 5 ("Very true for me"). The internal consistency of the Social ( $\alpha = .79$ ) and Appearance ( $\alpha = .89$ ) subscales, respectively, in the current study are comparable to those found in Ryan et al. (1997).

**Psychological Wellbeing.** Three subscales from the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001; Van Roy, Veestra, & Clench-Aas, 2008), a



measure of mental health problems and prosocial behavior in children aged 3 to 16, were used as outcome measures (i.e. post-intervention) in our predictive validity analyses: the Peer Problems, Emotional Problems, and Prosocial Behavior subscales, respectively. The Peer Problems subscale measures the extent to which participants have difficulty relating to, engaging with, and interacting among peers (i.e. “Other children or young people pick on me”). The Emotional Problems subscale is indicative of internalizing symptomology and associated features (i.e. depression, anxiety, somatization; “I have many fears, I am easily scared”). The Prosocial Behavior subscale measures a participant’s ability to interact socially and is scored independently of the other subscales (i.e. “I am kind to younger children”).

Each subscale consists of 5 items and is scored on a 3-point scale where 1 is “Not true,” 2 is “Somewhat true,” and 3 is “Certainly true.” Several items are indicative of positive psychological wellbeing and those items are reverse coded such that higher scores are indicative of poorer psychological wellbeing. Past research on the SDQ demonstrated high internal consistency, strong predictive validity, and adequate levels of convergent validity with other informant methods (i.e. parent- and teacher-report SDQ scores; Goodman, Meltzer, & Bailey, 1998). Overall mean levels of internal consistency in the current study ( $\alpha = .75$ ) are comparable to those found in Goodman et al. (1998).

## **2.4 DATA ANALYSES**

Analyses regarding factor structure (EFA) and concurrent validity were conducted utilizing the Mplus Version 7.3 statistical software package (Muthén & Muthén, 2012). Analyses pertaining to predictive validity were conducted utilizing SPSS v.20.0. The

EFA analyses used maximum-likelihood (MLR) parameter estimates with robust chi-squares; standard errors were used to estimate parameters within the model, as this method results in the same estimates as maximum-likelihood (ML) estimates, yet has been shown to be more accurate than other asymptotic tests when data are non-normally distributed (Hox, Maas, & Brinkhuis, 2010). This method is also able to accommodate missing data.

Analyses were conducted in two distinct phases. The first phase included an examination of the factor structure of the SMOSS in our sample of underrepresented early adolescents using an exploratory factor analysis (EFA). The EFA utilized the oblique Geomin rotation, permitting the factors to correlate. Adequacy of model fit was assessed using several criteria, including absolute (i.e. chi square [ $\chi^2$ ] goodness-of-fit test) fit indices, eigen values, and incremental fit indices (i.e. standardized root mean square residual [SRMR], comparative fit index [CFI], root mean square error of approximation [RMSEA]).

The second phase involved using the latent factors derived from the EFA to examine the concurrent and predictive validity of the SMOSS. The concurrent validity of the SMOSS was examined by computing bivariate correlation analyses involving the MPAM-R Social Subscale. Predictive validity was established using a set of several multiple regression analyses that assessed whether these latent factors adequately predicted the following variables following a 12-week intervention: appearance-related motivations to engage in physical activity (MPAM Appearance subscale), emotional problems (SDQ Emotional Problems subscale), peer problems (SDQ Peer Problems subscale), and prosocial behavior (SDQ Prosocial Behavior subscale), respectively.

Paired samples t-tests with Bonferroni correction were conducted between pre- and post-intervention scores for the four variables involved in our predictive validity analyses to rule out potential intervention effects.

## **CHAPTER 3**

### **RESULTS**

#### **3.1 PRELIMINARY ANALYSIS**

Inter-item correlations of the SMOSS are presented in Table 3.1, as well as means, standard deviations, and skewness of individual SMOSS items. Additionally, paired-samples t-tests between pre- and post-intervention scores on our four outcome measures in our predictive analyses were conducted using Bonferroni corrections to rule out any significant effects of the intervention that could influence the results of the current study. All four t-tests yielded no significant differences between pre- and post-intervention measures: MPAM-R Appearance subscale ( $t = -1.212$ ,  $df = 136$ ,  $p = .228$ ), SDQ Peer Problems subscale ( $t = -.459$ ,  $df = 127$ ,  $p = .647$ ), SDQ Emotional Problems subscale ( $t = .805$ ,  $df = 129$ ,  $p = .422$ ), and SDQ Prosocial Behavior subscale ( $t = -1.389$ ,  $df = 130$ ,  $p = .167$ ).

#### **3.2 EXPLORATORY FACTOR ANALYSIS OF THE SMOSS**

Initial eigen values indicated that the first three factors explained 68.5%, 14.0%, and 8.5% of the overall variance, respectively. However, only the first and second factors had eigen values above Kaiser's (1960) recommended criterion (i.e. value greater than or equal to 1.0). Reported below are the incremental and absolute fit indices for the one-factor, two-factor, and three-factor model solutions of the SMOSS. Individual item factor loadings are presented in Table 3.2.

EFA results for the one-factor model solution of the SMOSS indicated that the SRMR fit index fell below the recommended .08 cutoff (.066). However, neither the recommended .06 cutoff for the RMSEA index (.08) or the CFI cutoff of .95 (.89; Hu & Bentler, 1999) were met. The absolute fit index also indicated poor model fit ( $\chi^2(77) = 164.99, p < .001$ ).

The two-factor model solution of the SMOSS yielded acceptable incremental fit indices (SRMR = .036, RMSEA = .049, CFI = .967). Although absolute fit indices indicated poor model fit ( $\chi^2(64) = 91.606, p = .013$ ), a  $\chi^2$  difference test evidenced a significant difference between the one-factor and two-factor model solutions ( $p < .001$ ).

EFA results for the three-factor model solution of the SMOSS indicated acceptable incremental fit indices (SRMR = .028, RMSEA = .049, CFI = .973). Similar to the one- and two-factor model solutions, respectively, absolute fit indices again indicated poor model fit ( $\chi^2(52) = 74.175, p = .023$ ). However, different from the comparative analyses between the one- and two-factor model, a  $\chi^2$  difference test showed no significant difference between the two-factor and three-factor model solution ( $p = .139$ ).

The two-factor solution, which explained 82.5% of the overall variance, was preferred over the three-factor solution based on several criteria. First, the scree plot depicting eigen values plateaus after two factors; also, the eigen value of the third factor fell below Kaiser's (1960) recommended cutoff value of 1.0 (.853). Second the two-factor solution was more parsimonious, as the two-factor and three-factor model solutions yielded similar incremental fit indices; a  $\chi^2$  difference test indicated no significant

difference between the two solutions and thus a non-significant contribution in explaining the overall variance.

Third, the individual item loading pattern of the two-factor solution is aligned with and supportive of previous theory and the broader understanding of adolescent development. This two factor solution features all original SMOSS affiliation and recognition subscale items (11 items) as factor 1 and all original status subscale items (3 items) as factor 2. Table 2 displays the results of all three factor solutions in addition to what subscale each individual SMOSS item converged onto based on Allen's (2005) study.

Concurrent and predictive validity analyses were therefore conducted using the two factors of the SMOSS, referred to henceforward as latent factor 1 (11 items; all original affiliation and recognition subscale items) and latent factor 2 (3 items; all original status subscale items), respectively. Cronbach's coefficient alpha estimates of internal consistency for latent factor 1 of the SMOSS was excellent ( $\alpha = .91$ ). Internal consistency for latent factor 2 (i.e. original Status subscale in Allen (2005)) of the SMOSS was acceptable ( $\alpha = .74$ ) and comparable to prior studies (Allen, 2005; Garn et al., 2011a; Garn et al., 2011b).

### **3.3 CONCURRENT VALIDITY OF THE SMOSS**

Two bivariate correlations were computed to assess the concurrent validity of the SMOSS: (1) latent variable 1 and the MPAM-R Social subscale, and (2) latent variable 2 and the MPAM-R Social subscale. Both the first and second analyses yielded moderate

correlations ( $r = .372$  and  $.377$ , respectively), indicating sufficient concurrent validity between measures.

### **3.4 PREDICTIVE VALIDITY OF THE SMOSS**

Results from all predictive analyses are displayed in Table 3.3. Multiple regression analyses indicated the SMOSS significantly predicted later appearance-related motivations to engage in physical activity ( $F(2, 136) = 4.58, p = .012$ ) and explained 6.3% of the overall variance. Latent variable 2 was significantly related to higher levels of appearance-related motivations ( $\beta = .354, p = .003$ ). Latent variable 1 was associated with lower levels of appearance-related motivations but did not reach statistical significance ( $\beta = -.240, p = .120$ ).

The SMOSS significantly predicted later peer problems ( $F(2, 135) = 5.76, p = .004$ ) and explained 8.0% of the overall variance. Latent variable 1 was significantly related to lower amounts of peer problems ( $\beta = .199, p = .001$ ); in contrast, latent variable 2 was significantly related to higher amounts of peer problems ( $\beta = .110, p = .016$ ).

The SMOSS significantly predicted later emotional problems ( $F(2, 134) = 3.34, p = .038$ ) and explained 4.8% of the overall variance. Latent variable 1 was significantly related to lower amounts of emotional problems ( $\beta = -.194, p = .011$ ). Latent variable 2 was associated with higher amounts of emotional problems but did not reach statistical significance ( $\beta = .092, p = .111$ ). Lastly, the SMOSS did not significantly predict later prosocial behavior ( $F(2, 135) = 2.181, p = .117$ ).

## **CHAPTER 4**

### **DISCUSSION**

A principal aim of this investigation was to examine the unique factor structure of the SMOSS in a crucial yet understudied sample of underrepresented early adolescents as a means of better identifying and explaining the specific motivational orientations to general physical activity present in this sample of youth. Our findings failed to replicate the three-factor model found by Allen (2003; 2005) and instead produced a two-factor solution consisting of all original affiliation and recognition subscale items (11) on latent factor 1, and all original status subscale items (3) on latent factor 2. Though Allen's (2003) original unconfirmed hypothesis was also that of a two-factor solution (i.e. affiliation orientation and a social validation orientation that included recognition and status), our findings indicate distinct structural differences such that items associated with social recognition conspicuously aligned with affiliation-oriented items rather than those regarding improvements in social status.

An additional aim was to provide continued psychometric validation for the SMOSS via concurrent validity analyses. As hypothesized, both latent factors yielded significant and moderate positive correlations to a measure gauging purely social reasons for engaging in physical activity. These findings are consistent with both the broader social motivational theory underlying the construction of the SMOSS (Allen, 2003; 2005) and findings from various studies indicating significant relationships between each of the original three



SMOSS subscales and feelings of relatedness in P.E. (Wallhead et al., 2013, Garn & Wallhead, 2015). and sports (Hodge et al., 2008), and provide further psychometric evidence for this measure's ability to measure social motivations to engage in physical activity above and beyond those offered solely by the sport context.

The final aim of this investigation involved testing the SMOSS's ability to predict later (i.e. 12 weeks) appearance-related motivations to engage in physical activity, peer problems, emotional problems, and prosocial behavior. To our knowledge, this is the only study to have used the SMOSS to predict these distinct outcomes. Individual multiple regression analyses demonstrated the SMOSS's ability to significantly predict three of the four constructs (i.e. all but prosocial behavior). As expected, latent factor 1 (original affiliation and recognition items) significantly predicted fewer peer problems and fewer emotional problems. Latent factor 2 (original status items) significantly predicted higher levels of appearance-related motivations to engage in physical activity and more peer problems, and approached significance in its ability to predict higher amounts of emotional problems ( $p = .07$ ).

When aggregated, these findings suggest that social motivational orientations to general physical activity are distinctly different in our sample of underrepresented early adolescents. While a consistent finding from past examinations of the SMOSS indicates that a recognition orientation is a mix of both mastery- and ego-based approaches to sport, and perhaps the "middle ground" between the affiliation (mastery-dominated) and status (ego-dominated) orientations, the desire to affiliate with and be recognized by peers as motivation to engage in physical activity appears intertwined during this period of development. This may signal that receiving recognition from peers is analogous to or

a product of forming meaningful connections/relationships (or vice versa). Specific to our sample of underrepresented early adolescents, this finding ultimately parallels conclusions drawn from broader literature that friendships serve distinctly different functions at different developmental stages (Gifford-Smith & Brownell, 2003); specifically, our finding that motivations to affiliate with and receive recognition from peers are in some way interconnected may indicate the connection of the group identity development and acceptance evident in late childhood, and the individual identity development present in adolescence (Parker & Gottman, 1989). Additionally, given their distinct factorial and predictive differences in relation to status-related items, these findings also suggest that affiliating with or receiving recognition from peers does not directly translate into improvements in social status during early adolescence and/or in minority youth.

The novel factorial design observed in our sample suggests that salient contextual differences, with profound effects on youth motivational orientations, exist between the sport and P.E. setting, and a setting where competition is minimized, autonomy is encouraged, and intrinsic-oriented motivations (i.e. affiliation) are promoted. Given the innate confounds present in both the P.E. (i.e. participation is typically forced/required, coercive, and contributes to class grade; largely focused on development and mastery of motor skills likely assessed through performance-based criteria) and sport (i.e. competitive by design; focus is on outperforming others; lends itself to more externally-referenced orientations to sport (status or recognition)) contexts, it is unsurprising that our study yielded a distinctly different pattern of social motivational orientations. This finding also provides unique support for much of the broader motivational climate

literature asserting that differences in climate (i.e. historically, ego vs. mastery) account for, either directly or indirectly, distinctly different outcomes beyond those simply related to physical activity levels (see Ntoumanis & Biddle, 1999 for review). Though it has been suggested that a mastery-based climate may be conducive to adaptive social outcomes (i.e. friendship development; Smith, 2003), we ultimately support the notion that a setting where participation is not forced, active play is encouraged but not required, and social goals are emphasized is perhaps the purest context (i.e. adaptive and generalizable) for both promoting positive social outcomes and capturing the true nature of youth's motivations to engage in physical activity at this point in the lifespan.

Findings from our predictive validity analyses yielded largely consistent and anticipated results, with the exception of prosocial behavior. Aligned with past conceptualizations of latent variable 2 (i.e. status items; externally-referenced, goal fulfillment contingent upon others), status-related motivations to engage in physical activity significantly predicted higher amounts of another externally-referenced motivation (i.e. appearance), whereas latent variable 1 (a more intrinsically-referenced orientation) did not significantly predict appearance-related motivations. Past research demonstrates that these externally-referenced orientations and motivations are inherently maladaptive, as the extent to which individuals' behaviors are validated is heavily contingent upon fluctuating contextual factors; and a lack of validation from important peers can yield deleterious outcomes (Hodge et al., 2008; Wallhead et al., 2013). Results regarding later peer problems further discriminate between these two orientations, as latent factor 1 predicted significantly less peer problems and latent factor 2 predicted significantly more peer problems, suggesting that engaging in physical activity for status

reasons is, on a broader level, socially maladaptive. In predicting future emotional problems, findings indicate that affiliation- and recognition-oriented goals are emotionally adaptive for this sample of youth; though it did not reach statistical significance, the status orientation was associated with higher emotional problems. In sum, these findings lend further support to Garn and colleagues' (2011b) claim that status is the "least adaptive" (p. 419) orientation, not just in the P.E. setting but also in our setting promoting general physical activity, as it predicted and was associated with higher amounts of peer and emotional problems, respectively.

#### **4.1 IMPLICATIONS**

Findings from this study have several empirical and applied implications. Given that our results do not support Allen's (2003, 2005) tri-factor model of social goals, this may warrant alterations to the broader social motivational theory underlying the construction of the SMOSS in regard to early adolescents and/or underrepresented youth. Specifically, the distinct factorial design and predictive qualities of a dual affiliation/recognition motivation on participants' emotional and peer problems, respectively, contribute to a clearer understanding of these orientations in our sample of youth. Similar, albeit opposite (i.e. negative) predictive qualities are noted for a status-orientation, and this provides further support for conclusions drawn from past studies (e.g., Garn et al., 2011b; Hodge et al., 2008; Wallhead et al., 2013) that a status-based orientation to physical activity has detrimental effects on participants' motivations and behavioral health; the current study provides further theoretical consistency for these conclusions by explicitly highlighting the increases in peer and emotional problems that result from a status-orientation. Findings of the study also have applied implications. In

pursuit of ultimately fostering positive socio-emotional outcomes via physical activity during this developmental period, these include the importance of emphasizing affiliation- and recognition-based motivations to engage in physical activity, and de-emphasizing status-based orientations in a setting characterized by non-competitiveness and social and behavioral autonomy. Disseminating this information to influential adults (i.e. educators, coaches, program staff, etc.) is essential to the universal promotion of these specific motivational orientations.

#### **4.2 LIMITATIONS AND FUTURE DIRECTIONS**

Allen (2008) notes that “modification of [the SMOSS] is likely to be necessary if it is to adequately capture social goals in sport” (p. 100), and this remains true. Because the overarching aim of our investigation was to provide psychometric validation for the SMOSS in a sample of underrepresented early adolescents, social goals in general physical activity are viewed through the lens of affiliation-, recognition-, and status-based orientations. However, it is likely that other social goals exist regardless of sample homogeneity and a primary direction of future research in this domain should involve identifying these specific motivations. More broadly, additional research is needed to provide validation of the SMOSS across unique samples and in novel physical activity contexts to properly identify what social goals are most adaptive for which subsets of youth. The current study demonstrates that identification of social goal orientations in youth yield useful information beyond that related to physical activity, and this helps address one area of research Allen (2005) identified as lacking. We further this claim by noting that an essential avenue of future social goal research should involve translating results into tangible aspects of intervention development to help prompt positive

outcomes in youth that may or may not be specifically related to physical activity promotion.

Two limitations of the current study with implications for future research involve sample size and data collection procedures. While our sample size meets several recommendations for conducting an EFA, we acknowledge the dominant scientific finding that a larger sample size is better and more likely to produce results that are both generalizable and replicable (Costello & Osborne, 2005). Additionally, obvious methodological concerns arise when relying singularly on self-report data, and the current study is not exempt from those concerns. Future research should aim to examine these constructs in a larger, perhaps representative sample of youth and employ a multi-informant approach to data collection (i.e. parent- and teacher-report) to help ensure response accuracy, particularly when measuring constructs in which early adolescents may be prone to misreporting.

### **4.3 CONCLUSION**

The results of this investigation provide evidence that the SMOSS adequately measures social goals among a unique sample, underrepresented early adolescents, and in a context independent of P.E. or sport where participation in physical activity is not forced, active play is encouraged, and social goals are emphasized. Additional findings of this study demonstrate that social goals have a different structure among underrepresented early adolescents for general physical activity; these different types of social goals have important implications for both physical and mental health, and are likely to impact continued engagement in physical activity through adolescence and

adulthood, as well as peer relations and psychosocial development across this critical stage in development.

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## APPENDIX A: MEASURES

### SMOSS

1 = Strongly disagree      2 = Disagree      3 = Sometimes agree, sometimes disagree  
disagree      4 = Agree      5 = Strongly agree

#### *I feel good about my participation in physical activity/sports...*

1. ...when others tell me I have performed well      1 2 3 4 5
2. ...when I make some good friends while participating in the activity.      1 2 3 4 5
3. ...when I belong to the popular group or team.      1 2 3 4 5
4. ...when my teammates/peers and I laugh together.      1 2 3 4 5
5. ...when I am the center of attention.      1 2 3 4 5
6. ...when I make new friends who I can hang out with outside of the activity.      1 2 3 4 5
7. ...when I have fun with the others.      1 2 3 4 5
8. ...when I am part of the “in” crowd.      1 2 3 4 5
9. ...when other kids think I’m really good at the sport or activity.      1 2 3 4 5
10. ...when I receive recognition from others for my accomplishments.      1 2 3 4 5
11. ...when spending time with the others is enjoyable.      1 2 3 4 5
12. ...when I become friends with some of the others in the program.      1 2 3 4 5
13. ...when others are impressed by my sport/physical ability.      1 2 3 4 5
14. ...when just hanging out with the others is fun.      1 2 3 4 5

## MPAM-R

1 = Very False            2 = False much of the time            3 = Somewhat true

4 = True much of the time            5 = Very true

### *When I am active...*

#### **Social Subscale**

1. ...it is because I want to be with my friends. 1 2 3 4 5
2. ...it is because I like to be with others who are also interested  
in the activity. 1 2 3 4 5
3. ...it is because I want to meet new people. 1 2 3 4 5
4. ...it is because my friends want me to participate. 1 2 3 4 5
5. ...it is because I enjoy spending time with others doing this activity. 1 2 3 4 5

#### **Appearance Subscale**

1. ...it is because I want to lose or maintain weight so that I look better. 1 2 3 4 5
2. ...it is because I want to define my muscles so I look better. 1 2 3 4 5
3. ...it is because I want to be attractive to others. 1 2 3 4 5
4. ...it is because I want to improve my body shape. 1 2 3 4 5
5. ...it be because I feel physically unattractive if I don't. 1 2 3 4 5

## SDQ

1 = Not true    2 = Somewhat true    3 = Certainly true    0=Not comfortable answering

*Please choose which is the most correct statement about you.*

### Emotional Problems Subscale

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I get a lot of headaches, stomachaches, or sickness.      | 1 | 2 | 3 | 0 |
| 2. I worry a lot.  | 1 | 2 | 3 | 0 |
| 3. I am often unhappy, depressed, or tearful.                | 1 | 2 | 3 | 0 |
| 4. I am nervous in new situations. I easily lose confidence. | 1 | 2 | 3 | 0 |
| 5. I have many fears, I am easily scared.                    | 1 | 2 | 3 | 0 |

### Peer Problems Subscale

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I would rather be alone than with people my age.            | 1 | 2 | 3 | 0 |
| 2. I have one good friend or more.                             | 1 | 2 | 3 | 0 |
| 3. Other people my age generally like me.                      | 1 | 2 | 3 | 0 |
| 4. Other children or young people pick on me or bully me.      | 1 | 2 | 3 | 0 |
| 5. I get along better with adults than with people my own age. | 1 | 2 | 3 | 0 |

### Prosocial Behavior Subscale

- |   |   |   |   |   |
|---|---|---|---|---|
| 1. I try to be nice to other people. I care about their feelings. | 1 | 2 | 3 | 0 |
| 2. I usually share with others.                                   | 1 | 2 | 3 | 0 |
| 3. I am helpful if someone is hurt, upset, or feeling ill.        | 1 | 2 | 3 | 0 |
| 4. I am kind to younger children.                                 | 1 | 2 | 3 | 0 |
| 5. I often offer to help others (parents, teachers, children).    | 1 | 2 | 3 | 0 |