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# The Impact of Sports Dropout on Adolescent Functioning

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The Impact of Sports Dropout on Adolescent Functioning

by

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Bachelor of Arts  
University of South Carolina, 2008

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## ABSTRACT

Sports is the most commonly participated in extracurricular activity during adolescence. Aligned with the Positive Youth Development theoretical framework, previous research has shown that sports participation offers youth a context rich in resources found to promote positive adjustment into adulthood. However, around one third of the youth participating in sports drop out each year, and little research has examined the impact of sports dropout on indicators of youth adjustment. This study examines the relation between sports dropout and academic achievement, self-esteem, depression, perceived school climate, perceived support from adults in school, and alcohol use. The moderating effect of sports engagement (e.g., value, importance) was also tested.

A longitudinal sample (7<sup>th</sup> through 11<sup>th</sup> grades) of 340 youth (55.00% male, 66.80% African American) of the Maryland Adolescent Development in Context Study who met sports dropout criteria across three waves of data collection were included in our study. A two-group path analysis model found a good model fit (RMSEA=.00, 95% CI [.00, .06]; CFI=1.00; TLI=1.03;  $\chi^2$  (18,  $N=348$ ) =16.45,  $p=.56$ ). Separate analyses comparing youth with continuous sports participation and those who dropped out of sports was non-significant for all indicators of adolescent adjustment, and sports engagement did not moderate the relation between sports dropout and any of the indicators of adolescent

functioning. Despite non-significant findings, the current study reveals many challenges with examining sports dropout and emphasizes the need to prevent sports dropout in youth through targeted strategies such as increasing the value and participation in multiple types of extracurricular activities and increasing the value and access for alternative community sports contexts.

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## CHAPTER 1

### INTRODUCTION

#### The Impact of Sports Dropout on Adolescent Functioning

More adolescents participate in sports than any other extracurricular activity available to youth (National Center for Education Statistics, 2005). However, around one third of adolescents drop out of sports each year (Gould, 1987; Petlichkoff, 1996). Despite overwhelming evidence that sports participation promotes positive youth adjustment (e.g., psychological well-being, positive social development, academic and occupational achievement, and lower rates of illicit drug use; Barber, Eccles, & Stone, 2001; Gore, Farrell, & Gordon, 2001; Seefeldt & Ewing, 1996; Zarrett, Fay, Li, Carrano, Phelps, & Lerner, 2009), there is a paucity of research examining the impact of sports dropout on youth development and adjustment. Given the benefits of sports participation, it is likely that dropping out of the prosocial sports context (Kleiber & Kirshnit, 1991; Larson, Hansen, & Moneta, 2006) will have deleterious effects, particularly for youth with higher levels of sports engagement. Therefore, the purpose of the present study is to examine how sports dropout relates to multiple academic and psychosocial indicators of youth adjustment, and consider variations in the degree to which sports dropout affects adjustment depending on the level of the adolescent's engagement, sex, race, and SES. Identifying youth at greatest



developmental risk due to dropout will help inform practice and policy for sustaining youth supports through this transition.

### *Sports Participation and Adolescent Adjustment*

*Theoretical foundations.* The positive youth development (PYD) theoretical model emphasizes the importance of aligning individual strengths with contextual resources for healthy development and enhancements in positive functioning (i.e. well-being; Bornstein, Davidson, Keyes, Moore, & the Center for Child Well-Being, 2003; Lerner, 2005). Research has demonstrated that when youth are provided with adequate resources among the key settings in which they are embedded (e.g., school, family, community), they gain important developmental assets (e.g., social competencies, positive values, positive identity, commitment to learning) for promoting positive development (Benson et al., 2006; Benson, 2003; Lerner, 2005). In particular, extracurricular sports are shown to offer participating youth resources that foster a unique set of key assets including cohesion, self-control, persistence, responsibility, and initiative (Kleiber & Kirshnit, 1991; Larson, Hansen, & Moneta, 2006). Possible mechanisms through which sports participation may help to foster these important assets include placing adolescents in a context which promotes interaction with prosocial peers and adults (e.g., Eccles, Barber, Stone, & Hunt, 2003; Hedstrom & Gould, 2004; Seefeldt & Ewing, 1996), and where youth can capitalize on their strengths and interests, supporting the development of a positive self identity (Lerner, 2005). PYD theory suggests that these key assets fostered by sports

participation are the mechanisms linking sports with multiple indicators of positive functioning including academic and social achievement, greater school engagement, mental health, positive self-esteem, and lower rates of drug use (Barber, Eccles, & Stone, 2001; Gore, Farrell, & Gordon, 2001; Larson, 2000; Zarrett , et al., 2009).

*Academic achievement, school climate, perceived support from adults within the school setting.* Participation in school-based sports facilitates connections to teachers, coaches, and other important individuals tied to the school setting, promoting a sense of school belonging, engagement, and achievement (Brown, Mory, & Kinney, 1994; Eccles, Barber, Stone, & Hunt, 2003). Moreover, adolescents who are on the same team with one another are likely to spend much of their free time together, allowing them to share experiences, develop new friendships, and discuss goals, values, and aspirations. This shared culture around sports provides adolescents the opportunity to identify with a group of fellow peers who have a shared interest (Eccles, Barber, Stone, & Hunt, 2003), and who are more likely to be engaged in prosocial institutions and to support achievement and positive aspirations (National Research Council and Institute of Medicine, 2000; Nadel, 2000). Consequently, several studies have found a positive association between participation in sports and positive academic outcomes including grades, school engagement, and educational goals (Cooper, Valentine, Nye, & Lindsay, 1999; Eccles & Barber, 1999; Marsh, 1992; Marsh & Kleitman, 2002). Sports participants have been found to like school better than non-participants, to have

higher than expected GPAs, higher rates of college graduation, lower rates of school dropout, higher rates of college attendance, and to accrue more total years of tertiary education by age 25-26 (Eccles, Barber, Stone, & Hunt, 2003; Marsh & Kleitman, 2002; McNeal, 1995).

*Depression and global self-esteem.* Sports participation has also been associated with higher levels of self-esteem and lower rates of depressed mood (Seefeldt & Ewing, 1996). In addition to the physical/chemical changes of regular physical activity that enhance mood (e.g., endorphins) (Craft & Landers, 1998; North, McCullagh, & Tran, 1990), several socially-based mechanisms have also been proposed to promote these benefits. The social desirability placed on sports makes it a high status context with enormous impact on adolescents' social identity, peer group formation, and close friendships (Eccles, Barber, Stone, & Hunt, 2003; Smith, 2003). Affiliation with this high status crowd, and the related social acceptance from both peers and adults that it affords (e.g., feeling popular; Carnegie Council on Adolescent Development, 1990; Hedstrom & Gould, 2004; Seefeldt & Ewing, 1996), offer adolescents protective factors against depressive affect (La Greca & Harrison, 2005). Moreover, adolescents who participate in sports are more likely to have more positive body satisfaction, and higher levels of athletic competence, both of which have been related to higher levels of self-esteem and lower levels of depression (Bowker, 2006; Gore, Farrell, & Gordon, 2001; Harter, Marold, & Whitesell, 1992; National Research Council and Institute of Medicine, 2000; Sanders, Field, Diego, & Kaplan, 2000;

Seefeldt & Ewing, 1996; Siegel, 2002; van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010).

*Alcohol use.* Adolescents who do not participate in organized activities are at an increased risk for substance use (e. g. Barber & Eccles, 1999; Mahoney & Cairns, 1997; McNeal, 1995). Some literature indicates that sports participation in particular is also related to alcohol use, but findings have been mixed (Barber, Eccles, & Stone, 2001; Eccles, & Barber, 1999; Eccles, Barber, Stone, & Hunt, 2003; Fredricks, & Eccles, 2005; Harrison, & Narayan, 2003; Rainey & McKeown, 1996; Wetherill, & Fromme, 2007). Although several large-scale studies suggest deleterious effects of sports participation on adolescent alcohol use (Eccles, Barber Stone, & Hunt, 2003; Garry & Morrissey, 2000; Wichstrom & Wichstrom, 2009), other studies have found that sports participation is unrelated (Harrison & Narayan, 2003; Zarrett et al., 2009) or even potentially protective against alcohol consumption among participating adolescents (Mays, DePadilla, Thompson, Kushner, & Windle, 2010).

There are two competing and/or likely explanations provided for the potential effects of sports participation on alcohol use. First, studies of adolescent identity development have found that youth engaging in more risky behaviors including alcohol use are less likely to engage in prosocial activities, have low levels of school engagement and attachment, and associate with delinquent peers. However, when these at risk youth do opt into extracurricular activities, it is most often sports (Barber, Eccles, Stone, 2001). Therefore, there is a selection effect where youth at risk for alcohol use are more highly represented

within sports than other organized extracurricular activities. If these at-risk youth drop out of sports, they are unlikely to opt into another prosocial extracurricular activity, placing them at even higher risk for alcohol use than during the time they played sports (Elders, Lever-Dunn, Wang, Nagy, & Green, 2000).

Conversely, other researchers have proposed that the peer culture distinctly associated with sports may be responsible for a positive relation between sports participation and alcohol use (Eccles, Barber, Stone, & Hunt, 2003) because there may be an expectation within some high status adolescent peer groups that encourages alcohol consumption (e.g., Barber, Eccles, & Stone, 2001; Eccles, Barber, Stone, & Hunt, 2003; Fredricks, & Eccles, 2005; Harrison, & Narayan, 2003; Rainey & McKeown). Though this mechanism has not been explicitly examined, it is expected that alcohol use will decrease in youth who drop out of sports, especially if they choose to participate in a different type of organized activity, and thereby identify with a peer culture that does not value alcohol use.

### *Consequences of Dropout*

Although we know of the multiple benefits of sports participation, there is little-to-no research on the possible deleterious effects of dropout. Rather, the majority of sports dropout literature focuses on what causes adolescents to choose to drop out (e.g., Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002). This research has indicated that sports participation becomes more dependent upon one's ability to qualify for a team as adolescents transition from middle to

high school. Consequently, this competitive structure has been identified as one of the primary causes of reduced sports participation above age 13 (Seefeldt, & Ewing, 1996). Although less competitive sports opportunities are often available, the prestige associated with team membership in school based sports has been shown to dissuade adolescents who do not qualify for the school team to participate in sports at less socially prominent levels (e.g., recreational leagues; Duda, 1985; Seefeldt, & Ewing, 1996). Moreover, an adolescent's self-perceived competence plays a chief role in his or her decision to continue in sports participation, with those perceiving a lack of ability more likely to drop out (Weiss & Ferrer-Caja, 2002).

Only one study to date has examined the potential negative effects of sports dropout on adolescent adjustment (e.g., depression, school attachment). Among a longitudinal sample of youth across the middle- and high-school years, Eccles, Barber, Stone, and Hunt (2003), found that adolescents who engaged in sports in the 10<sup>th</sup> grade and dropped out of sports by the 12<sup>th</sup> grade reported greater depressed moods than adolescents who maintained participation. However, findings suggested that these effects are likely to vary for youth depending on their level of engagement in sports prior to dropout. For instance, Eccles et al. found that adolescents who placed high value on sports in 10<sup>th</sup> grade but who had dropped out by 12<sup>th</sup> grade reported more drastic declines in school attachment (Eccles, Barber, Stone, & Hunt, 2003).

While the Eccles et al. study provides some evidence that sports dropout in youth is linked with negative outcomes, there are a number of other indicators

of youth adjustment associated with sports participation which deserve further examination (e.g., academic achievement, support from prosocial adults, alcohol use). For example, if an adolescent drops out of sports, he or she may lose valuable interactions with and support from prosocial adults, and may no longer associate with peers who value academic engagement and achievement (Brown, Mory, & Kinney, 1994; Eccles, Barber, Stone, & Hunt, 2003), therefore, losing a context which promotes academic success. Moreover, dropout may cause adolescents to lose the feeling of being popular among peers because they no longer participate in a high status activity, as well as regular contact with their friends and supportive adults, and a previously held social identity. Thus, in the current study we examined the potential deleterious effects of sports dropout on academic achievement, school climate, and perceived support from adults within the school setting, as well as self-esteem, and depression. Further, adolescents who drop out of sports and yet continue to highly value sports and identify themselves as athletes may be at a heightened risk for these deleterious effects due to a discontinuity between sense of self and activity participation. However, if an adolescent drops out of sports but engages in other extracurricular activities, involvement in those prosocial contexts may have a buffering effect.

Beyond only exploring a few implications of sports drop out (e.g., depression), Eccles et al. examined the impact of dropout among a sample of older adolescents (in the 10<sup>th</sup> and 12<sup>th</sup> grades), when many youth have already dropped out due to the competitive nature of team qualification at the school level and the lower prestige of community recreational leagues (Duda, 1985; Seefeldt,

& Ewing, 1996). Therefore, the current study will address several gaps in research including 1) examining the relation of sports dropout on adolescent adjustment among a younger sample of adolescents (7<sup>th</sup>-11<sup>th</sup> grades); and 2) considering a wider range of indicators (e.g., self-esteem, alcohol use, school climate, academic achievement).

### *Variations in Adjustment by Sports Engagement*

Although sports dropout is expected to affect adjustment across youth, the degree to which it has an effect is likely to vary depending on variations in individuals' sports engagement. Sports engagement can be measured through both youth attitudes (i.e., perceived value of and ability in sports; Eccles, Barber, Stone, Hunt, 2003), and behaviors (i.e., frequency of participation; whether youth choose to participate solely in sports or whether participation in sports is one of multiple organized activities in which youth participate; Fredricks & Eccles, 2006; Zarrett et al., 2009). Multiple theories of motivation and activity-based identity development have proposed that the value and importance individuals place on sports, combined with how much they participate in and perceive themselves to be good at sports, are positively related to their degree of motivation and engagement in sports (Eccles, Barber, Stone & Hunt, 2003; Harter, Waters, & Whitesell, 1998; Marsh & Kleitman, 2002). Moreover, high value and perceived ability for sports have been shown to mediate the relation between sports participation and high self-esteem, suggesting these attitude components of sports engagement might be necessary for reaping the benefits of participation (Dishman, et al., 2006). Consequently, youth who demonstrate higher positive



attitudes towards sports (high value and perceived ability) are likely to be more affected by dropout than youth who place less importance on sports because their behavior (e.g., dropping out) is not in line with their high value of sports (Dennisen, Zarrett, & Eccles, 2007; Harter, 1988).

While measures of value and perceived ability demonstrate attitude components of sports engagement, adolescents' actual behaviors and choices involving their allocation of leisure time to other organized activities along with sports participation will also likely make a difference in the degree to which dropout influences adjustment. For instance, youth can choose to participate only in sports or to participate in a variety of organized extracurricular activities, each with their own peer cultures and social norms. Echoing the PYD theoretical perspective, if an adolescent participates in just one activity (i.e., sports), it is likely that much of that individual's values, sense of competence, identity, and social resources (e.g., friends, peer culture, social identity) are associated with that particular activity context, especially when that activity is participated in with high frequency and for a long duration (Eccles, Barber, Stone, & Hunt, 2003; Zarrett et al., 2009). Dropout for these youth (who put all their so-called "eggs in one basket") can be devastating, depleting the individual of these key resources tied to their participation. In contrast, dropout may not have as great an effect for youth who participate in multiple extracurricular activities because they have other activity contexts which still support their peer relationships, social and personal identities, ties to school, and interactions with prosocial adults. Thus other activity contexts and identities developed across activities should act as a

buffer for those youth who drop out of sports and lose their sports specific context and identity. Some previous research supports this hypothesis. For example, Zarrett et al. (2009) found that youth who were highly engaged in multiple extracurricular activities performed better on multiple indicators of PYD than most other adolescents. Moreover, Eccles et al. (2003) found that youth with positive attitudes towards sports who had dropped out, showed no increase in depressed mood if they had become involved in other extracurricular activities. These findings support our assertion that both attitude and behavioral indicators of sports engagement play important roles in the relation between sports dropout and positive youth adjustment.

In the current study, sports engagement, as measured by youth attitudes (sport value and perceived ability) and behaviors (participation in solely sports vs. multiple extracurriculars), will be examined as key moderators of the association between sports dropout and youth adjustment. Although sports is a resource-rich context, and loss of those resources could lead to negative outcomes, we hypothesize that participation in a variety of extracurricular activities will likely protect against deleterious effects of sports dropout, preventing drops in academic achievement, perceived school climate, perceived school support, and self-esteem, and increased rates of depression and alcohol use.

### *Study Aims*

The first aim of the present study is to examine the relations between sports dropout and indicators of positive youth development. It is expected that youth who drop out of sports will have lower academic achievement, perceived

school climate, perceived social support from adults at school, and global self-esteem and will display more depressed symptomology and greater alcohol use compared to adolescents who do not drop out (i.e. maintain participation), with longer duration of participation prior to dropout predicted to be associated with greater detriments of dropout. The second aim of this study is to examine how sports engagement (e.g., attitudes and behaviors) moderates the relation between dropout and indicators of adolescent adjustment. It is hypothesized that youth who have higher sports engagement (e.g., participate solely in sports, higher sports value and perceived ability) prior to dropout will experience poorer adjustment across the multiple indicators of functioning assessed (e.g., depression) but that participation in other organized activities will have a buffer effect. No study to date has explored these relations. Findings contribute to our understanding of the consequences of sports dropout and can inform policy and practice for identifying and treating youth at greatest risk due to drop out.

## CHAPTER 2

### METHOD

**Participants** This study uses data from the Maryland Adolescent Development in Context Study (MADICS), available from the Henry A. Murray Research Archive at Harvard University (<http://www.murray.harvard.edu/>). MADICS is a community-based longitudinal study of adolescents and their families in multiple contexts that began in 1991. Participants were originally part of the Study of Adolescents in Multiple Contexts (SAMC; see Cook, Herman, Phillips, & Setterson, 2002). Of the approximately 5000 students in the 1991 SAMC cohort, 1700 families agreed to be contacted about MADICS. Of these 1700 families, 1500 were randomly selected to be recruited into the study. These families were drawn from all 24 middle schools in the county in proportion to school size. The county includes low-income communities, high-risk urban neighborhoods, middle-class suburban neighborhoods, and rural communities.

Of the 1500 families selected for recruitment, 1482 adolescents and their families completed the Wave 1 (7<sup>th</sup> grade) interviews and self-administered questionnaires. The longitudinal sample of 849 youth (51% female) and their families is 66% African American and 30% European American (plus a mix of other ethnic groups). The MADICS sample is particularly unique because the “middle class” SES distribution is similar for African Americans and European Americans (e.g., the median pretax family income in 1990 was \$40,000-\$45,500

for both Blacks and Whites) and the overrepresentation of African American adolescents. The average age of the target youth was 12.75 years at Wave 1.

**Procedure** Data on adolescents and their families were collected at the beginning of 7<sup>th</sup> grade (Wave 1, 1991), in the summer following the 7<sup>th</sup> grade (Wave 2, 1992), in the summer and early fall following the 8<sup>th</sup> grade (Wave 3, 1993), at the end of the 11<sup>th</sup> grade school year (Wave 4, 1995), and then 1 and 3 years post high school (Wave 5, 1998, and Wave 6, 2000). Waves 1, 3, and 4 were collected in the home using both face-to-face interviews with the youth and the primary caregiver (PCG; usually the mother) and self-administered questionnaires for PCG, youth, secondary caregiver (usually the father), and older sibling if these last two existed and agreed to participate. Same race interviewers were used in approximately 85% of the families. For both Wave 5 and Wave 6, the youth were mailed questionnaires that collected extensive quantitative and qualitative information about their educational and occupational attainment and goals; problematic behaviors; family, friend, and romantic relationships; and mental and physical health. For the current study, waves 1, 3, and 4 self-report questionnaire data was used. Wave 2 was excluded because data was collected only via phone interview and not all variables of interest were included.

**Measures** All measures of mental health, academic motivation and achievement, and involvement in problematic behaviors in MADICS have been used before in many studies and have demonstrated internal reliability and predictive, face, and construct validity (Conger, Ge, Elder, et al., 1994; Eccles,

Midgley, Wigfield, et al., 1993; Kovacs, 1992; Steinberg, 1981; Furstenberg, 1992;). The measures of constructive activity involvement were developed by Bandura, Cook, and Eccles for the MacArthur Network on Successful Adolescent Development and have also been shown to have face and predictive validity (e.g., Barber, Eccles, & Stone, 2001).

*Sports Participation and Dropout.* Sport participation was measured in terms of frequency/time estimates (e.g., “During the last year how often did you spend time participating on school athletic teams?” [1= less than once a month, 2= at least once a month, 3= once a week, 4= more than once a week, 5= everyday while the program lasted, 6= usually every day]. For the present study, participation in a sport is defined as attending practice and/or games one or more times a week.

Continuous (cross-year) participation is measured as frequent involvement in the activity (one or more times a week) beginning in the 7<sup>th</sup> or 8<sup>th</sup> grade and continuing through the 11<sup>th</sup> grade. Drop out is defined as dropping below the defined participation level of practicing one or more times a week in the next examined wave of data collection and staying at the drop out level throughout the rest of the included waves. This study focuses on two levels of participation for the sports dropout variable: 1) continuous participation, and 2) dropout (see Table 2.1).

*Sports Engagement.* Beyond frequency of participation, the degree to which youth participate in multiple extracurricular activities or opt to participate solely in sport (all eggs in one basket) is often perceived as another indicator of

sport engagement (Eccles & Barber, 1999; Zarrett et al., 2009). Therefore, the additional behavioral indicator of sports engagement is measured using non-sport activity participation items including school-sponsored clubs and community clubs. These activities were chosen because they have similar social components to sports participation (e.g., involving a group of peers and adults engaging around a shared interest or mission). Activities were measured in terms of frequency/time estimates (e.g., “During the last year how often did you spend time participating on school athletic teams?” [1= less than once a month, 2 = at least once a month, 3 = once a week, 4 = more than once a week, 5 = everyday while the program lasted, 6 = usually every day]). Similar to our operationalization of sports, youth must have reported participation in the activity at least once a week across the year to be considered involved in the activity.

Attitude indicators of sports engagement (e.g., value, perceived ability) is categorized using a mean score for items on a seven-point ordinal scale indicating importance of and performance in sports (e.g., “How good are you in Sports?” [1=Not at all good to 7=Very good]; “How well do you expect to do in sports?” [1=Much worse than other kids to 7=Much better than other kids]; “Compared to other kids your age, how important are each of the following activities to you? How important are sports?” [1=Much less important to me 7=Much more important to me]). Two items indicate perceived ability, and one item measures value. In order to provide equal weight to both value and perceived ability, a mean was first created with the two ability items. The final

attitude sports engagement score was created by adding the ability mean and value score, and taking the mean.

*Adolescent Adjustment* Indicators of adolescent adjustment include: 1) Academic Achievement, Perceived School Climate, and Perceived Support from Adults at School, 2) Self-esteem, 3) Depression, and 4) Alcohol Use. Table 2.2 reports data descriptives for all indicators.

*Academic Achievement* was measured using adolescent self-reported GPA on a 5-point ordinal scale [1=Mostly F's, 2=Mostly D's, 3=Mostly C's, 4=Mostly B's 5=Mostly A's].

*Perceived School Climate* was measured using a composite of three items with a 5-item ordinal scales [1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, 5=strongly disagree] which asked participants to report their level of agreement with statements about school (e.g., "In general, you like school a lot").

*Perceived School Support from Adults* was measured using a composite of 4 items with a 5-item ordinal scale [1=almost never 2=not too often 3=about half of the time 4=fairly often, 5=almost always] which asked participants to report the frequency they seek out or receive support from adults within the school setting (e.g., "How often can you depend on other adults in the school to help you out?").

*Self-Esteem* was measured using a composite of six items with 5-item ordinal scales. Three items on the scale [1=almost never, 2=once in a while, 3=sometimes, 4=often, 5=almost always] asked participants "How often...(e.g. do



you wish you were different than you are; are you pretty sure about yourself)?”

Three other items asked participants to rate how happy they are [1=not at all happy; 5=extremely happy] with things about themselves (e.g. “How happy are you with the kind of person that you are?). Items on self-concept of ability, values and importance placed on academic domains, came from The Michigan Study of Adolescent Life Transitions (Eccles, Midgley, Buchanan, Wigfield, Reuman, & Maclver, 1993).

*Depression* was measured using a composite of six items with a 5-item ordinal scale [1=almost never, 2=once in a while, 3=sometimes, 4=often, 5=almost always] which asked participants “During the last month, including today, how often have you...(felt hopeless; felt lonely; felt like you didn’t care anymore; felt very sad; felt depressed; had thoughts of ending your life)?” Items on mental health came from Conger et al.’s Iowa Youth and Family Study (Conger, Ge, Elder, Lorenz, & Simons, 1994; Conger, Lorenz, Elder, Melby, Simons, & Conger, 1991), as well as the National Study of Children (Allen, Moore, Kuperminc, Bell, 1998). The Children’s Depression Inventory (Kovacs, 1992), was then added at Wave 3 to adjust for additional complexities of middle adolescence.

*Alcohol Use* was measured on a 5-point ordinal scale of frequency of use. The item asked: “How many alcoholic drinks have you had in the last 30 days?” (1=no alcohol; 3=1 whole drink; 5=5+ drinks). Items on delinquency came from the National, and the Denver, Youth Studies (Elliott, Menard, Rankin, Elliott, Wilson and Huizinga, 2006).

*Socio-demographic Factors* In order to control for variations by socio-demographic factors, race, sex, and Socioeconomic Status (SES) were entered as covariates all analyses/models. Race and sex were coded as dichotomous variables, (race=white and African American; sex=male, female) and SES (z-score) scores were created by taking the mean of the following three standardized indices: the highest household education, the highest household occupation, and the combined household income. Primary and secondary caregivers reported educational attainment in years (ranging from 5 to 26) and occupational status with open-ended descriptions that were coded according to the 1990 U.S. Census Bureau's Occupational Classification System (inter-rater reliability of 90%). The occupational codes were then transformed to match the "Occupational Status Scores of 589 Occupations" presented by Nam and Powers (1983) which rank orders occupations by prestige scores (ranging from 0 to 99). Family income was measured by asking the child's primary caregiver, "from all sources of income you mentioned [e.g., employment, family, public], tell me your total family income before taxes in 1990" (16 categories ranging from < \$5000 to > \$75,000).

**Data Analysis** The structural equation modeling (SEM) software Mplus (Muthén & Muthén, 1998-2011) was used to conduct a two factor path analysis to determine the relation of sports dropout and each of the indicators of adolescent adjustment (academic achievement, perceived school climate, perceived support from school adults, global self-esteem, depression, and alcohol use). Path analysis estimates the magnitude and strength of the hypothesized system and

allows for comparison of model fit for continuous sports participants and sports dropouts. All outcomes of adolescent adjustment were measured from Wave 4.

Race, sex, and SES are included as covariates in all analyses since socio-demographic variations in sports participation and sports engagement may impact adolescents' experiences with dropout differently (Kort-Butler, 2012). For example, athleticism, competitiveness, and physical ability are emphasized in male gender roles (Eccles, 1987; Eccles & Harold, 1991), placing more cultural expectations for adolescent boys to participate in sports only (Eccles, et al., 2003) and to have higher value for sports (Gadbois & Bowker, 2007). Differences in sports by race relations have also been found in previous research, though findings have been mixed. For example, Tracy and Erkut (2002) found that white adolescent males reported higher levels of self-esteem associated with sports than black males, but no racial differences for females. Other studies indicate no significant differences in self-esteem and race for sports (Marsh & Kleitman, 2002). Lastly, research has shown that youth of lower SES are especially likely to benefit from the rich social context of sports participation including lower rates of school dropout and higher educational attainment (Feldman & Matjasko, 2005; Mahoney & Cairns, 1997; Peck, Roeser, Zarret, & Eccles, 2008).

Once the overall model was tested for appropriate fit, two-group path models were run independently for each indicator of adolescent adjustment and sports dropout. Next, the models were run independently with behavioral sport engagement and attitude sport engagement as moderators. Lastly, the models were run independently with the attitude sports engagement moderator

separated by value and ability in order to examine if there were differences by attitude sports engagement component. Model fit was determined using multiple indices including chi-square, CFI, TLI, and RMSEA, and the Wald test was used to determine if groups (i.e., sports participants vs. dropouts) differed significantly.

*Attrition and missing data* Of the 856 youth that participated in the study at all three waves of data collection, 498 youth met the inclusion criteria of participation in sports in at least 7<sup>th</sup> or 8<sup>th</sup> grade. Missing data are treated with full information maximum likelihood (FIML), and measures from Waves 1 and 3 were included as auxiliary variables for, self-esteem, depression, perceived school climate, and perceived support from adults in school in order to allow for imputation based on data available for the other waves. However, FIML could not be used for missing moderators, resulting in missing data for 150 youth on one or both moderator variables. After accounting for missing data, a total of 348 observations were included in the model. The sample was 55% male, and 66.8% African American youth (see Table 2.3 and Table 2.4 for additional descriptives).

Table 2.1

*Sport Participation Categories*

Wave 1	Wave 3	Wave 4	Definition	N
1	1	1	Continuous	150
0	1	1	Continuous	99
1	0	1	Continuous	52
1	0	0	Dropout	69
1	1	0	Dropout	61
0	1	0	Dropout	67

Table 2.2

*Description of Adolescent Adjustment Variables*

Youth Asset	# of Items	Scale	Example Item	Descriptives
Academic Achievement	1	1=mostly F's, 5=mostly A's	"Which of the following best describes the grades you get in school on your   semester report card?"	M=3.11, $\alpha$ =.73
Perceived School Climate	3	1=strongly agree, 5=strongly disagree	"How often can you depend on other adults in the school to help you out?"	M=3.41, $\alpha$ =.64
Perceived School Support from Adults	4	1=almost never, 5=almost always	"How often can you depend on other adults in the school to help you out?"	M=2.68, $\alpha$ =.64
Self-Esteem	6	1=almost never, 5=almost always; 1=not at all happy, 5=extremely happy	"How happy are you with the kind of person that you are?"	M= 3.67, $\alpha$ =.80
Depression	6	1= almost never, 5= almost always	"During the last month, including today, how often have you felt lonely?"	M=1.86, $\alpha$ =.82
Alcohol Use	1	1=no alcohol, 5=5+ drinks	"How many alcoholic drinks have you had in the last 30 days?"	No alcohol (n=835); One drink (n=55); 5+ drinks (n=20)

Table 2.3

*Dropout and Sports Engagement Race and Sex Descriptives*

	Sex		Race	
	Male	Female	African American	White
<i>Dropout</i>				
Continuous Participation	174 (63.00%)	127 (57.20%)	202 (60.70%)	99 (60.00%)
Dropout	102 (37.00%)	95 (48.20%)	131 (39.30%)	66 (40.00%)
<i>Behavioral Engagement</i>				
No Activities	103(55.40%)*	68 (42.50%)*	115 (48.50%)	56 (51.40%)
1 Activity	70 (37.60%)	66 (41.30%)	94 (39.70%)	42 (38.50%)
2 Activities	13 (7.00%)*	26 (16.30%)*	28 (11.80%)	11 (10.10%)

Note. %=within category, \*Adjusted standardized residual (asr)  $\geq 2.0$

Table 2.4

*Dropout and Behavioral Engagement by SES*

Variable	df	F	<i>p</i>
Dropout	1, 497	0.14	0.710
Behavioral Engagement	2, 496	21.76	0.000*
		<i>Mean Difference</i>	<i>p</i>
No Activity	1 Activity	-0.31	0.000*
	2 Activities	-0.39	0.000*
1 Activity	No Activity	0.31	0.000*
	2 Activities	-0.79	1.000
2 Activities	No Activity	0.39	0.000*
	1 Activity	0.79	1.000

Note. \*  $p < .05$ , *df*=degree of freedom



## CHAPTER 3

### RESULTS

In order to test overall model fit, a two-group path analysis model was run in Mplus which included sports dropout as the grouping variable, self-esteem, depression, perceived school climate, perceived support from school adults, academic achievement, and alcohol use, as the dependent factors, and race sex, and SES as covariates. Fit indices indicated a good model fit (RMSEA=.00, 95% CI [.00, .06]; CFI=1.00; TLI=1.03;  $\chi^2$  (18, N=348) =16.45,  $p$ =.56; MacCallum, Browne & Sugawara, 1996; Bentler, 1990; Hu & Bentler, 1999). Table 3.9 shows descriptive for all variables.

Given the good model fit, individual two-group path analysis tests were then run to determine if youth with continuous sports participation and youth who dropped out of sports differed significantly on indicators of adolescent adjustment. The Wald test of parameter constraints indicated no significant differences between the groups on any of the adjustment indicators (see Table 3.2).

Next, in order to determine if youth sport attitudes (sport ability and value perceptions) moderated the relation between sports dropout and adjustment attitude sports engagement was included in the two-group path model with sports dropout as the grouping variable, self-esteem, depression, perceived school climate, perceived support from school adults, academic achievement, and

alcohol use, as the dependent factors, and race sex, and SES as covariates. Fit indices indicated a good model fit (RMSEA=.02, 95% CI [.00, .08]; CFI=.99; TLI=.97;  $\chi^2$  (18, N=328) =19.49,  $p$ =.36). The Wald test of parameter constraints was not significant for each test, indicating that there were no differences between continuous sports participants and sports dropouts, and therefore no moderating relation (see Table 3.3).

Attitude sports engagement was then separated into perceived ability and value for sports. In order to determine if youth perception about their sports moderated the relation between sports dropout and adjustment, perceived ability was included in the two-group path model sports dropout as the grouping variable, self-esteem, depression, perceived school climate, perceived support from school adults, academic achievement, and alcohol use, as the dependent factors, and race sex, and SES as covariates. Fit indices indicated a good model fit (RMSEA=.029, 95% CI [.00, .08]; CFI=.99; TLI=.95;  $\chi^2$  (18, N=345) =20.55,  $p$ =.30). The Wald test of parameter constraints was not significant for each test, indicating that there were no differences between continuous sports participants and sports dropouts, and therefore no moderating relation (see Table 3.4).

Next, in order to determine if the importance youth placed on moderated the relation between sports dropout and adjustment, value for sports was included in the two-group path model, with sports dropout as the grouping variable, self-esteem, depression, perceived school climate, perceived support from school adults, academic achievement, and alcohol use, as the dependent factors, and race sex, and SES as covariates. Fit indices indicated a good model

fit Model fit indices (RMSEA=.03, 95% CI [.00, .08]; CFI=.99; TLI=.94;  $\chi^2$  (18,  $N=343$ ) =21.00,  $p=.28$ ). The Wald test of parameter constraints was not significant for each test, indicating that there were no differences between continuous sports participants and sports dropouts, and therefore no moderating relation (see Table 3.5).

Lastly, in order to explore a moderating relation between sports dropout and behavioral sports engagement, behavioral sports engagement was included in the two-group path model. Sports dropout was the grouping variable, self-esteem, depression, perceived school climate, perceived support from school adults, academic achievement, and alcohol use, as the dependent factors, and race sex, and SES as covariates. Fit indices indicated a good model fit (RMSEA=.00, 95% CI [.00, .05]; CFI=1.00; TLI=1.07;  $\chi^2$  (18,  $N=346$ ) =14.46,  $p=.70$ ). The Wald test of parameter constraints was not significant for each test, indicating that there was no significant difference between continuous sports participants and sports dropouts and no moderating relation (see Table 3.6).

Table 3.1

*Descriptives for All Variables*

Variable	Scale Range	Mean	SD
<u>Moderators</u>			
Behavioral Sports Engagement	0-2	0.62	0.68
Attitude Sports Engagement	0-21	9.15	5.62
<u>Dependent Variables</u>			
Depression		-0.02	0.69
Self-Esteem		0.03	0.79
School Climate		-0.01	0.52
School Adult Support		-0.06	0.69
Academic Achievement		-0.37	1.05
Alcohol Use		0.04	1.04

*Note. Behavioral sports engagement is a count of participation in other activities. Attitude sports engagement is a mean score. The dependent factors ranged from -1 to 1.*

Table 3.2

*Model Comparisons for Continuous Participants and Sport Dropouts*

	df	Wald	p-value
Self-esteem	1	2.11	0.15
Depression	1	2.42	0.12
School Climate	1	0.31	0.58
School Support	1	0.98	0.32
Academic Achievement	1	0.24	0.62
Alcohol Use	1	0.08	0.78

Note. \*  $p < .05$ , df=degree of freedom

Table 3.3

*Model Comparisons for Continuous Participants and Sport Dropouts with Attitude Sports Engagement*

	df	Wald	p-value
Self-esteem	1	0.35	0.550
Depression	1	0.15	0.700
School Climate	1	1.44	0.230
School Support	1	0.05	0.830
Academic Achievement	1	0.02	0.880
Alcohol Use	1	0.14	0.710

Note. \*  $p < .05$ ,  $df$ =degree of freedom

Table 3.4

*Model Comparisons for Continuous Participants and Sport Dropouts with Perceived Ability for Sports*

	df	Wald	p-value
Self-esteem	1	0.06	0.800
Depression	1	1.80	0.180
School Climate	1	1.96	0.160
School Support	1	0.35	0.550
Academic Achievement	1	0.43	0.510
Alcohol Use	1	0.30	0.590

Note. \*  $p < .05$ , df=degree of freedom

Table 3.5

*Model Comparisons for Continuous Participants and Sport Dropouts with Value for Sports*

	df	Wald	p-value
Self-esteem	1	0.00	0.980
Depression	1	0.96	0.330
School Climate	1	1.45	0.230
School Support	1	0.02	0.890
Academic Achievement	1	0.04	0.840
Alcohol Use	1	0.61	0.430

Note. \*  $p < .05$ ,  $df$ =degree of freedom



Table 3.6

*Model Comparisons for Continuous Participants and Sport Dropouts with Behavioral Sports Engagement*

	df	Wald	p-value
Self-esteem	1	1.11	0.290
Depression	1	1.73	0.190
School Climate	1	0.34	0.560
School Support	1	0.52	0.470
Academic Achievement	1	0.53	0.470
Alcohol Use	1	0.83	0.360

Note \*  $p < .05$ , df=degree of freedom

## CHAPTER 4

### DISCUSSION

The current study aimed to: 1) examine the relation between sports dropout and multiple indicators of adolescent adjustment, and 2) examine the potential moderating effects of attitude and behavioral engagement on the relation between sports dropout and indicators of adolescent adjustment. Although we found no significant relations between sports dropout and adolescent development, the current study reveals some of the challenges of examining sports dropout, which may explain why it is currently an under examined adolescent experience. Moreover, there are still implications to consider for promoting positive youth development through participation in sports and preventing potential deleterious effects from sports dropout.

#### *Challenges of measuring sports dropout: Limitations and future directions.*

There are several challenges of examining sports dropout, which were limitations to the current study and should be addressed in future research. Contrary to our expectations, all indicators of adjustment in the current study (self-esteem, alcohol use, academic achievement, perceived school climate, perceived social support from adults in school, and depression) were found to be unrelated to sports dropout. There are a number of possible explanations for why we may not have found these relations. One major limitation of the current study is that duration could not be assessed and can matter

(Fredricks, & Eccles, 2006). The current study was limited to sports participation beginning in 7<sup>th</sup> grade and ending in 11<sup>th</sup> grade, and in order to examine the effect of duration of participation, studies should start in childhood. Though this study focused on school sports because of the social status, peer identity formation, and particularly the academic social networks with both peers and adults that school sports provides, youth could be participating in sports at the community level, playing for many years before school sports (which typically start in the 7<sup>th</sup> grade) These community-based sports may be just as competitive as school sports during the elementary school years (Brown, & Branta, 1988; travel teams, allstar tournaments, AAU championships), and youth are likely participating with many of the same peers that are eventually on their school-based teams with them as school-sports are increasingly offered during middle-school. There is a structure of continuity that can be captured with looking at earlier development. However, participation in community sports was not measured in the current study, but can be important to study during the middle and high school years as well. Participation in community-based sports after dropping out of school sports may buffer deleterious effects of school sports dropout, and this is unmeasured in the current study. Thus, future work should explore differences between full dropout versus youth who drop from school sports to community sports. Understanding interpersonal characteristics and socializers that influence youth to stay in some form of sports activity despite no longer being a part of a school team may have implications for how to promote sports participation in general.

Beyond examining sports participation and dropout across childhood and adolescence, future research will need to examine the potential long-term effects of sports dropout. In the current study, effects may not have been found for some well-being indicators (academic achievement, perceived school climate, perceived social support from adults in school, and depression) because some of the outcomes may not be immediately impacted by sports dropout. For example, though one of the benefits of our study was the examination of a younger sample, this may be why we found no relation between sports dropout and alcohol use and could not clarify the previous mixed findings (e.g., Eccles, Barber, Stone, & Hunt, 2003; Fredricks, & Eccles, 2005; Harrison, & Narayan, 2003). Alcohol use increases substantially across later adolescence (Center for Disease Control and Prevention, 2010), and the majority of our sample (74.7%) reported never using alcohol or using alcohol only once. While the use of a single item about alcohol use makes it more difficult to detect significance, the lack of variability in our sample is likely why we found no relation.

Future research should also look at change in adjustment outcomes over time. The current study examined mean level differences between groups on 11<sup>th</sup> grade outcomes, rather than using a longitudinal approach. Although the data available for the current study would have allowed for assessing dropout in 8<sup>th</sup> grade and 11<sup>th</sup> grade individually variability in sports participation duration would need to be taken into account. A future direction would be to measure baseline well-being when youth are in sports, which could begin in either 7<sup>th</sup> or 8<sup>th</sup>

grade in the current data, and then assess adjustment indicators at the time of drop out (8<sup>th</sup> or 11<sup>th</sup> grade).

Another challenge for the current study was that there was a limit to the other extracurricular context we could consider for moderating effects. Though many activities were included in the MADICS study, it was not possible to identify the prosocial settings in which youth engaged in these additional activities. For example, although youth were asked if they practiced a musical instrument, we could not determine which of these youth participated in school-based bands, orchestras or choruses, very similar contexts to school sports participation (e.g., group practice, competitions, skill improvement). Similarly, youth reported the frequency in which they attended religious gatherings, but explicit measurement of participation in religious youth groups, another youth context associated with several unique benefits (Hanson, Larson, & Dworkin, 2003), was unavailable.

Future studies should also consider the relation between dropout and different kinds of sports. Though adolescents who participate in school sports have higher social status than youth who participate in other kinds of activities, different sports within a school are likely to vary in popularity (e.g., track vs. football), potentially impacting the social identity of the youth who participate in them. Additionally, peer relationships may differ for youth who participate in team sports (e.g., basketball) where youth are required to work together to reach a common goal, compared with individual sports (e.g., gymnastics) that emphasize individual skill. Comparing sports within a school or by general

ratings of status may help to shed light on how important social status and peer relationships are for impacting adolescent adjustment in sport dropouts.

Finally, future studies should further examine variation in sports dropout by socio-demographic factors. Socio-demographic variations in sports participation and sports engagement may impact adolescents' experiences with dropout differently (Kort-Butler, 2012). For example, athleticism, competitiveness, and physical ability are emphasized in male gender roles (Eccles, 1987; Eccles & Harold, 1991), placing more cultural expectations for adolescent boys to participate in sports. Similarly, this gender-role stereotype is likely to cause adolescent males to place a high value on sports and drive their desire to participate. Conversely, this stereotype may cause adolescent girls, who wish to be viewed as more feminine and who may increasingly tune in to feminine attributes with physical and social changes related to pubertal development, to shy away from sports as they are perceived to be a more masculine activity choice. Thus, gender differences socializing males to access and participate in sports, and the masculine value placed on sports, may result in high rates of dropout for girls, and differences in value and ability may result in greater deleterious effects of dropout for boys (Gadbois & Bowker, 2007). Moreover, adolescent boys may be at greater risk simply because they typically participate in sports alone, compared with adolescent girls who are more likely to participate in a number of extracurricular activities (Eccles, et al., 2003).

Variations by race and sports have been found to be less clear. For example, Tracy and Erkut (2002) found that white adolescent males reported

higher levels of self-esteem associated with sports than black males, but no racial differences for females. Other studies indicate no significant differences in self-esteem and race for sports (Marsh & Kleitman, 2002). Lastly, research has shown that youth of lower SES are especially likely to benefit from the rich social context of sports participation including lower rates of school dropout and higher educational attainment (Feldman & Matjasko, 2005; Mahoney & Cairns, 1997; Peck, Roeser, Zarrett, & Eccles, 2008). School sports may be one of the few prosocial resources accessible to these youth and dropout may therefore be more detrimental to adolescents of low SES compared to youth from higher SES who commonly have greater access to other positive contexts.

*Addressing sports dropout.* In the current study, approximately 33% of youth dropped out of sports during the high school years. These statistics are reflective national statistics that around 1/3 of youth drop out of sports each year (Duda, 1985, Petlichkoff, 1996). Moreover, in this study all youth were equally likely to drop out of sports regardless of race, sex, or SES. Previous research indicates that sports participation is uniquely beneficial to adolescent development, but there is still the challenge of how to prevent potential deleterious effects of sports dropout (Barber, Eccles, & Stone, 2001; Gore, Farrell, & Gordon, 2001; Seefeldt & Ewing, 1996; Zarrett, Fay, Li, Carrano, helps, & Lerner, 2009; Zarrett & Bell, 2014). While studies on sports dropout have traditionally focused on why youth are dropping out (e.g., Butcher, Lindner, & Johns, 1999; Fraser-Thomas, Côté, & Deakin, 2008; Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002), explicit strategies for preventing dropout are less clear.

One of the most commonly reported reasons for dropping out of sports is that an adolescent no longer finds it fun or interesting (Seefeldt, Ewing, & Walk, 1992), and this may be in response to feelings a decreased competence and ability as school sports in particular become more competitive across high school (Weiss & Ferrer-Caja, 2002). Therefore, preventing school-sports dropout completely is unlikely due to the competitive nature of school sports in later adolescence.

*Primary goal to keep youth engaged in sports.* Given the unique benefits of sports participation on adolescent development, it is essential to consider strategies for keeping youth engaged in sports. One possible solution for addressing the potential deleterious effects of dropout from school sports is to improve access, awareness, and presence for community-based sports. Duda (1985) found that the prestige associated with team membership in school based sports may actually dissuade adolescents who do not qualify for the team to participate in sports at a less socially prominent level such as in recreational leagues. Given the unique benefits of sports over other kinds of organized activities, especially towards physical health, lower depression, and higher self-esteem (Barber, Eccles, & Stone, 2001; Gore, Farrell, & Gordon, 2001; Seefeldt & Ewing, 1996; Zarrett, Fay, Li, Carrano, Phelps, & Lerner, 2009; Zarrett & Bell, 2014), participating in sports in a community context is likely to foster similar positive development to school sport participation. Strategies that emphasize the fun and enjoyment youth can get from sports regardless of context, rather than focusing on competition, may be especially helpful for preventing total sports dropout and promoting a healthy lifestyle. Moreover, improving access to



community sports may be especially important for low or under resourced communities where school sports may be the most available and safest option. Improving community access can provide youth who may drop out of school sports with a comparable context.

While participation in less competitive community sports leagues should buffer any deleterious effects of school sports dropout for all youth, there are variations in how different groups of youth may perceive that alternative. Despite non-significant moderating relations between sports dropout and sports engagement (attitude and behavioral), variations in behavioral and attitudinal engagement by youth characteristics can still prompt us to consider tailored strategies for specified groups of youth. In the current study, boys reported significantly higher attitude sports engagement than girls, and were more likely to opt into sports as their only extracurricular activity (55.4% of boys in our study). This difference in behavioral engagement between boys and girls is likely influenced by gender stereo-types around sports. Both cultural expectations and gender role values that promote athleticisms, physical ability, and competitiveness as highly masculine emphasize sports participation for males (Eccles, 1987; Eccles & Harold, 1991), leading to higher value among adolescent boys than girls. This value difference for sports was supported in our study, with boys reporting significantly higher levels of attitude sports engagement than girls regardless of sports dropout or participation status. Thus, males' higher value and socialization experiences increase the likelihood that boys opt solely in sports (Eccles, et al., 2003). Therefore, adolescent boys are likely to experience

dissonance between value and behaviors (e.g. dropout) no matter if they are participating in other extracurriculars because none of the other activities are as valuable as sports. Moreover, boys in our sample were significantly underrepresented in participating in multiple other activities and significantly overrepresented in participating in no other activities post sports dropout. This finding is supported by previous research that adolescent girls are more likely to participate in multiple activities than males (57.7% of girls in our study participated in one or more non-sport activity, compared with 44.6% males; Eccles, et al., 2003). Although we did not find immediate deleterious consequences for sports dropout among boys with no other activity participation, substantial evidence in the literature points to poor long-term developmental outcomes for out who do not participate in extracurricular activities (Fredricks & Eccles, 2006; Mahoney & Cairns, 1997; Zarrett et al, 2009). Getting boys involved in multiple kinds of activities such as music, art, or volunteering may help them to build value for those activities and promote participation in organized activities even if they drop out of sports. However, since adolescent boys are more likely to opt into sports only, it is important to consider strategies for changing their value towards potentially less competitive community-leagues. Emphasizing the fun and enjoyment sports can afford youth rather than focusing on the competitive elements may prompt boys who may otherwise drop out of sports completely to engage in community leagues and continue receiving the unique benefits of sports participation.

Conversely, our study is reflective of previous research that has found girls to report lower levels of attitude sports engagement than boys (Eccles, 1987; Eccles & Harold, 1991; Gadbois and Bowker, 2007), indicating that girls may currently be dropping out of sports because they don't perceive themselves to be good at sports, sports are not as highly valued as other kinds of activities, or at least because other kinds of activities are just as appealing. While participation in other activities may buffer potential deleterious effects of sports dropout, girls who no longer participate in sports are losing the unique benefits of the sports context. Adolescents who participate in sports are more likely to have healthier body weight and shape, impacting body satisfaction. This is an important relation since higher levels of body satisfaction have been strongly linked to positive adolescent self-esteem (van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010). Therefore, it is important to consider how to improve the attitudes that girls place on sports so that sports remains as or more appealing than other structured and unstructured activities available to them. Although adolescent girls may receive protective benefits from other activities after dropping out of sports because the other activities may provide similar social status and value for girls, they are losing the unique benefits of sports on achievement, socio-emotional factors, and physical health.

Although we did not identify a moderating effect of behavioral engagement, other research has indicated that participation in multiple activities may be promotive of PYD. Therefore, one strategy to address potential deleterious effects resulting from sports dropout is to encouraging youth to

participate in a breadth of extracurricular activities and to not put all of their eggs in one basket. While other activities may not hold as much social status as sports, these settings still afford adolescents opportunities to develop relationships with prosocial adults and peers and engage in positive social norms. Aligned with PYD theory, participating in multiple organized activities has been found to provide additive benefits across youth by offering multiple prosocial contexts with a wider community of prosocial adults and peers, which can each foster unique developmental assets (Fredricks & Eccles, 2006; Zarrett et al., 2009). Moreover, if an adolescent participates in just one activity (i.e., sports), it is likely that much of that individual's values, sense of competence, and social resources (e.g., friends, peer culture, social identity) are associated with that particular activity context (Eccles, Barber, Stone, & Hunt, 2003; Zarrett et al., 2009). Participating in a breadth of activities also means that the adolescent's identity, which is largely defined by activities during adolescence, is also less likely to be fully centered on sports. Participation in multiple extracurriculars can buffer negative effects of rejection or negative feedback from another activity context, or the loss of an activity context due to dropout (e.g. sports; Zarrett et al., 2009).

*Conclusions.* The current study explored the under examined relation between sports dropout and adolescent adjustment. Though we did not find relations between sports dropout and other indicators of adolescent adjustment, we propose that more refined examination of sports dropout is necessary. Sports is a context which offers youth unique psychosocial and academic

developmental benefits (Brown, Mory, & Kinney, 1994; Eccles, Barber, Stone, & Hunt, 2003; Seefeldt & Ewing, 1996). Although sports dropout may not affect the overall functioning of many youth, adolescents who drop out of sports are certainly not benefitting from the continued growth that the sports context offers. Exploring variability in adjustment by longer durations of sports participation, causes for youth to dropout, additional prosocial extracurricular contexts, the type of sports youth participate in, and socio-demographic factors may further clarify the impact of sports dropout on adolescent development. Further work is needed to understand the implications of sports dropout and to begin changing the value landscape of sports and other activities. Improving access to school-based sports for all youth, changing the value of other kinds of activities, and promoting the alternative of community-based sports are all strategies which should help more youth access the benefits of sports participation.

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