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GENDER AND RACE PATTERNS IN THE PATHWAYS FROM SPORTS PARTICIPATION TO SELF-ESTEEM

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Abstract

Athletics is the most prominent extracurricular activity in U.S. secondary schools in terms of student participation and school budgets. The latter is often justified on the grounds that healthy bodies produce healthy minds, that school sports boost school spirit, and that participation in school-based sports increases students' self-esteem. In this article we examine the interrelationships among participation in a school-based sport and the benefits assumed to be associated with it. Specifically, we test a model that postulates that school spirit, operationalized as attachment to school, and healthy bodies, operationalized as a sense of physical well-being, mediate the relationship between school sports and self-esteem. Data from the National Longitudinal Study of Adolescent Health on Caucasian and African American girls and boys were employed to test the model. School attachment and physical well-being absorbed the statistical effect of participating in a sport for all four gender-by-race groups. Among Caucasian girls a negative residual effect of sports participation was observed, which suggests that sports participation encapsulates multiple effects with contradictory influences. For African American girls school attachment by itself was not a significant mediator of the effect of sports participation on self-esteem. For all groups a sense of physical well-being was the more powerful mediator.

Physical activity has long been touted as having benefits both for the socioemotional and the physical well-being of youth (Berlin and Colditz 1990; Fletcher et al. 1996; Frisch et al. 1985; Marsh 1993; NIH Consensus Development Panel 1996; Powell et al. 1987; Wyshak and Frisch 2000). The average adolescent can be physically active in a number of ways. The 1997 Youth Risk Behavior Survey (Centers for Disease Control and Prevention 2002) showed in a national school-based survey of adolescents that 49.5 percent of the students reported participating in a school sponsored sport, 48.8 percent were enrolled in a physical education class, and 38 percent were on sports teams unaffiliated with the school. Indeed, school athletics programs are not only the most prominent source of physical activity for adolescents, they are also the most popular extracurricular activity and have the largest budgets of any other school-based activity in U.S. secondary schools. In this article we examine the interrelationships among participation in a school-based sport and the assumed associated benefits.

One justification for funding school-based athletic programs is that they boost self-esteem. This viewpoint gained greater prominence in 1961 when Coleman reported the centrality of athletics in the status system of American high schools for boys. Research has since provided evidence to support the claim that sports participation is associated with higher

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self-esteem among both boys and girls. Gruber's (1986) meta-analysis showed that higher self-esteem was associated with engaging in physical activity even among elementary school-aged children, especially children from economically disadvantaged families and those with mental or physical disabilities. McAuley (1994) also examined the outcomes of many studies to arrive at the conclusion that higher self-esteem was one of the several positive outcomes of engaging in physical activity.

Because Coleman's study focused on boys and more boys than girls participate in interscholastic athletics even after the passage of Title IX (President's Council on Physical Fitness and Sports 1997), a number of studies have focused specifically on the relationship between physical activity and self-esteem for girls. Jaffee and colleagues' studies (Jaffee and Manzer 1992; Jaffee and Ricker 1993; Jaffee and Wu 1996) demonstrated a strong positive relationship between physical activity and self-esteem among racially, economically, and geographically diverse girls. Erkut and colleagues (1996) found that in response to the open-ended probe, "Tell me about an activity that makes you feel good about yourself," girls from a range of racial, economic, and geographic backgrounds most frequently gave an athletic activity. Covey and Feltz (1991) showed that a physically active group of high school girls reported significantly more positive self-image and coping characteristics than their physically inactive counterparts.

While this body of research suggests that physical activity and self-esteem are positively related for *both* boys and girls, the psychosocial mechanisms underlying this relationship are less clear. Participating in a school-sponsored sport entails engaging in a physical activity, but because the school sponsors the activity, it has an additional school-based social interaction component. Therefore, it is highly likely that these two aspects of participating in a school-based sport separately influence self-esteem. We propose that physical well-being and school attachment are separate outcomes of participating in a school sport, corresponding respectively to its physical activity and school-based social interaction aspects. Their theoretical and empirical relevance to the observed relationship between sports and self-esteem require separate scrutiny.

PHYSICAL WELL-BEING

Advocates of school athletics often justify sports programs with the notion that healthy minds and healthy bodies go together. In this study we postulate that a sense of physical well-being—physical fitness and a healthy, coordinated, and energetic body—is a mediator between sports participation and self-esteem. We argue that participating in a sport generates a sense of physical well-being and that this positive view of one's body and health is associated with self-esteem.

The association of the fitness- and health-related focus of physical well-being as a mediator between physical activity and self-esteem can be explained through the self-systems theory of self-esteem, which addresses the development of children's and adolescents' self-understanding. As articulated by Damon and Hart (1988) and Connell and Wellborn (1991), self-systems theory refers to the internalization of children's perceptions of significant others' view of them, the "me-self," which, through the process of internalization, becomes the "I-self." The self-systems approach to self-esteem postulates that the "healthiest developmental course is one in which realistic standards and positive opinions of others are *internalized*, such that they become truly *self-evaluations* that the child comes to personally own" (Harter 1999:337; original emphasis). Through the process of internalization values that may have originated in others' opinions become relatively impervious to others' influence (Kelman 1958). Connell and Wellborn (1991) emphasize that the motivational bases of a self-system include three fundamental psychological needs: competence,

autonomy, and relatedness. Viewed from this perspective, a focus on physical well-being reflects an internalization of what is good for the person—a body that is energetic and healthy. Participating in sports because it is good for one's health, which is a belief that is relatively independent of others' evaluative opinions, satisfies the competence and autonomy motives. It also satisfies the relatedness motive because school sports are carried out in a social milieu. In contrast, a focus on body image and attractiveness inevitably subjects young people to the vagaries of the "me-self," whereby one's worth fluctuates with how others view and value him or her. Such a focus may meet the needs of relatedness but not necessarily competence and certainly not autonomy. Thus we propose that physical well-being, rather than body image or attractiveness, mediates the relationship between sports participation and self-esteem.

Empirical evidence for the view that fitness and health are associated with self-esteem comes from McDonald and Thompson's (1992) study of physically active college students. They found that exercising for health was associated with self-esteem, but exercising for weight and body tone and to become more attractive was not. Indeed, overall activity level was related to greater eating disturbance for women, who tended to be more likely than male college students to claim that they exercised for weight control. Harris's (1995) study of African American female college students also underscores the relationship between self-esteem and physical health. She found that there is a positive relationship between social self-esteem (as measured by the Helmreich and Stapp [1975] Texas Social Behavior Inventory) and rating physical health as important and also between social self-esteem and engagement in health-enhancing behaviors.

Rosenthal and Smith (1996) studied fifteen- and sixteen-year-old Australian high school students' ratings of their health. They found that adolescents who rated their health as better than their peers were more likely to report exercising frequently and engaging in the health-promoting behaviors of eating in accordance with the demands of their sports training. In contrast, adolescents who rated their health as poor also reported engaging in health-limiting behaviors such as illicit drug use and minimal exercise.

Another line of research that has received attention as a correlate of both physical activity and self-esteem focuses on satisfaction with one's body (Harter 1999; Usmani and Daniluk 1997; Williams and McGee 1991). Thinness for girls and well-developed muscles for boys remain the ideal body types among adolescents and young adults. The relatively few adolescents with these body types are more satisfied with their bodies and have higher self-esteem (Paxton et al. 1991), but the stability of being satisfied with one's body over time has not been examined in research. Moreover, aspiring to attain an ideal body type is problematic for self-esteem, especially for girls (Grant et al. 1999; McDonald and Thompson 1992). Feminist critiques of an overemphasis on the pursuit of beauty outcomes versus physical fitness have also made a clear distinction between what is good for the self in terms of health and fitness benefits and the pressure women and girls face to conform to unrealistic standards of beauty extolled by advertisers and the mass media (see Duncan 1994; Eskes and Duncan 1998). It is for these reasons that we have identified a fitness- and health-related focus on physical activity as a mediator for self-esteem rather than a body image or physical attractiveness focus.

SCHOOL ATTACHMENT

School-sponsored athletic programs are also believed to build school spirit. An increased sense of school spirit can be operationalized as attachment to school, that is, feeling connected to the school, one's teachers, and classmates and perceiving the school as a fair and trustworthy environment. School attachment has gained prominence as an important

predictor of educational and developmental outcomes in the analyses of the High School and Beyond data (Marsh 1993; Snyder and Spreitzer 1992) and the National Longitudinal Study of Adolescent Health data (Resnick et al. 1997). Marsh's (1993) analysis of the High School and Beyond data collected in 1980–84 suggests that school attachment may be a mechanism that mediates the relationship between sports participation and self-esteem. He found that sports participation in high school was positively related to a number of senior year and postsecondary outcomes including self-esteem and academic achievement. He reported that these results, which held across race, gender, social class, and school-related factors, were mediated by academic self-concept and educational aspirations, which led him to interpret the positive impact of sports participation in terms of school attachment. Snyder and Spreitzer's (1992) analysis of the High School and Beyond data also lends support to the hypothesis that school attachment mediates the association between sports participation and self-esteem.

Social control theory as articulated by Hirschi (1972) offers theoretical insights into why school attachment might mediate sports participation and self-esteem. Hirschi has argued that adolescents with strong bonds to society are more likely to engage in socially approved behavior and less likely to engage in socially disapproved behavior. These bonds are established with family and peers and also with social institutions such as schools. Secondary schools in the United States value and reward students who participate in sports and conform to socially approved behavior generally. Consequently, they become attached to the institution that rewards them and the rewards make them feel good about themselves. Coleman's (1961) finding about male athletes' popularity is an example of the high value that secondary schools place on sports participation. Subsequent research has shown that participating in school athletics is an avenue of popularity for girls also (Holland and Andre 1999; White, Duda, and Keller 1998), although at lower levels than for boys because fewer girls than boys participate in school sports. In a study of Asian, African American, Hispanic, and white middle school girls and boys, Kennedy (1995) found that athletic status was the most prominent source of popularity for all race-by-gender groups, except for African American girls, for whom athletics was the second strongest predictor of popularity, after being perceived as smart.

Figueira-McDonough (1983) has suggested a theoretical link between school attachment and self-esteem, derived from Merton's (1938) anomie theory of deviance. Merton postulated that acceptance of socially approved goals and the commitment to socially approved means of achieving these goals produce social conformity. On the other hand, belief in the same all-American goals but not having access to socially approved means for achieving them can lead some people to "innovate," that is, find ways to get ahead that are not socially approved. The latter option was one of Merton's explanations for deviance. Figueira-McDonough (1983) argues that in the high school context, when good grades are operationalized as the criterion of success—the Mertonian socially approved goal—school attachment can be viewed as commitment to socially approved means to achieving this goal. She suggests that self-esteem is the psychological link between the socially approved goal of academic success and the socially approved means of attachment to school.

Although Hirschi's social control theory and Merton's theory of anomie differ in their explanations of deviance, both theories agree on the social consequences of conformity: rewards follow socially approved behavior. The implication for high school student athletes is that attachment to an institution that supports and rewards them is associated with increased self-esteem.

GENDER AND RACE PATTERNS IN SELF-ESTEEM

While we propose that a sense of physical well-being and attachment to school mediate the relationship between participating in a school sport and higher self-esteem, questions remain regarding whether participating in a school-sponsored sport is associated with self-esteem in a similar way for both boys and girls and across race. It is well known that rates of participating in a school sport (Centers for Disease Control and Prevention 2002) and reports of self-esteem show marked race and gender differences among adolescents (AAUW 1991; Kling, Hyde, and Showers 1999; Polce-Lynch et al. 2001). Kling, Hyde, and Showers's (1999) meta-analysis of gender differences in self-esteem has conclusively documented a finding observed in many studies (e.g., AAUW 1991; Polce-Lynch et al. 2001): boys have slightly higher self-esteem than girls, and this small difference increases with age during adolescence. With respect to race, studies comparing the self-esteem of African American and Caucasian samples have found differences favoring African American children and adolescents (AAUW 1991; Simmons et al. 1978). Moreover, regarding the underlying bases of self-esteem, research has suggested that the strong reliance on physical attractiveness grounded in having a thin body is not as important a basis for African American girls' self-esteem as it is for Caucasian girls' (Erkut et al. 1999; Parker et al. 1995). Brown and colleagues (Brown et al. 1998) have observed that African American girls' higher and stabler self-esteem and their greater satisfaction with their physical appearance compared to Caucasian girls may be a result of racial differences in attitudes toward physical appearance and obesity. Given the gender and race differences in the levels as well as in the underlying bases of self-esteem that have been documented, we expect differences by gender and race in the processes through which school attachment and physical well-being mediate the relationship between sports participation and self-esteem.

Hypothesis 1: School attachment and a sense of physical well-being mediate the relationship between sports participation and self-esteem.

Hypothesis 2: There are gender and race differences in the processes through which school attachment and physical well-being mediate the relationship between sports participation and self-esteem.

METHOD

We used data from the National Longitudinal Study of Adolescent Health (Add Health) (Bearman, Jones, and Udry 1997) to test the hypotheses.¹ These data were collected to assess the health status of adolescents and to explore the causes and consequences of their health-related behaviors. We chose this data set because the data are from a nationally representative sample and because they are relatively recent (1994–96). Moreover, they include oversampling of minority populations. The Add Health data set was based on a clustered sampling design in which eighty high schools and eighty paired “feeder schools” (junior high schools that contributed students to the selected high schools) across the United States yielded a sample of ninety thousand adolescents in grades 7 through 12. These students were given the in-school portion of the survey. Although no special efforts were made to recruit populations at risk for absenteeism or dropping out, demographic and school data were available for students not captured by the in-school recruitment procedure. Given these demographic and student profiles of those excluded from the study, cases were weighted to reflect the overall population of students.

¹The Add Health project was designed by J. Richard Udry (PI) and Peter Bearman and funded by grant P01-HD31921 from the National Institute of Child Health and Human Development to the Carolina Population Center, University of North Carolina at Chapel Hill. Persons interested in obtaining data files from the National Longitudinal Study of Adolescent Health can contact Jo Jones, Carolina Population Center, 123 West Franklin St., Chapel Hill, NC 27516-3997; jo_jones@unc.edu.

Sample

Our analyses are based on data taken from the in-school surveys of the Caucasian and African American adolescents with complete data on our study variables. Respondents claiming membership in multiple racial-ethnic categories were not used in these analyses so that we could interpret the effects of race-ethnicity in our models more clearly. In the sample available to us there were 18,078 Caucasian girls, 17,566 Caucasian boys, 4,653 African American girls, and 3,535 African American boys. The subsamples were large enough to allow us to employ a split half approach to model testing wherein two randomly split subsamples were created, one on which the model was tested and one on which the model was cross-validated. The mean age of the adolescents in our samples was 15.01 years (SE = 0.12).

Constructs and Their Operational Definitions

Dependent Variable—A composite variable indicating self-esteem was constructed using the mean of six items, which were derived from Rosenberg's (1965) measure of general self-esteem. The items assessed how strongly the respondent agreed or disagreed with statements such as "I have a lot of good qualities" and "I have a lot to be proud of." Response options ranged from 5 (strongly agree) to 1 (strongly disagree). A slight negative skew in this variable was corrected by truncating values lower than 2.5. The final score was rounded to the nearest .5 in order to smooth the distribution. A higher score on the composite self-esteem scale indicated a stronger sense of self-esteem. The internal consistency coefficient for this scale was 0.86.

Independent Variable—School-based sports participation was measured by constructing a variable based on the number of sports (thirteen types of sports included in the Add Health questionnaire, such as basketball, baseball, tennis) in which a respondent reported being currently involved, or intending to be involved, during the current academic year. We included respondents' intent to participate in the sports participation variable because of the seasonal nature of high school athletic offerings.² A dichotomous variable was created, which indicated sports participation (current or intended) in at least one sport versus no sports participation.

Mediator Variables—Attachment to school was operationalized using the mean of five items, which had a response scale of 1 to 5. These items asked the respondent to rate the extent to which they agreed with such statements as "I feel close to people at this school" and "I feel like I am part of this school." A higher score on this scale indicated stronger feelings of attachment. The internal consistency coefficient for the attachment to school scale was .74.

The respondent's sense of physical well-being was operationalized by a composite of five items that indicated how strongly the adolescent agreed with statements such as "I have a lot of energy" and "I seldom get sick." Like the self-esteem variable, the indicator of physical well-being was slightly negatively skewed. Values lower than 2.5 were truncated and the final score was rounded to the nearest .5 to smooth the distribution. A higher score on this variable indicated a greater sense of physical well-being. The internal consistency coefficient for the physical well-being scale was .73.

Control Variables—A number of other variables were used as controls in the analysis. These are variables that are known to have relationships with the dependent, independent, or

²For example, a basketball player who completed the Add Health survey in the fall would have had to answer "No" to the question on current participation in basketball and "Yes" to the question on intent, if her school offers girls basketball as a winter sport.

mediating variables and/or reveal gender or race differences in these relationships. The control variables include grade in school as a proxy for the respondent's age, because gender differences in self-esteem increase as a function of age (Kling, Hyde, and Showers 1999), and sports participation declines with age (Engel 1994). Participation in nonsport extracurricular activities was included in the control variables, because extracurricular activities have been associated with self-esteem (Seidman et al. 1994), as has social desirability (Robins, Hendin, and Trzesniewski 2001; Tournois, Mesnil, and Kop 2000). Respondents' reports of their residential mother or mother figure's educational attainment (as a proxy for socioeconomic status) and their living in a two-parent household (regardless of whether the parents were the respondent's biological parents) were included among the control variables, because there are race differences in SES and house-hold composition (U.S. Bureau of the Census 2000). An indicator of whether the current school year marked the respondent's first year in his or her current school was included, because school transitions have been associated with a drop in self-esteem (Eccles and Midgley 1988; Simmons and Blyth 1987). Finally, an indicator of academic success was included, because both sports participation and self-esteem are associated with academic achievement (Marsh 1993). The mean of self-reported grades in English, math, social studies, and science were employed, where a grade of "A" was coded as 4, "B" as 3, "C" as 2, and "D or lower" as 1. The composite of academic success was truncated at a score of 2 to correct for a slight negative skew and rounded to the nearest .5 in order to smooth the distribution.

Table 1 shows the means and standard deviations for each of the variables in the study. These means were compared across the race-gender groups by means of a series of analyses of variance (ANOVAs). Significant differences were found in all group means except grade in school and mother's education, which did not differ across the groups. Post hoc comparisons show that boys of both races are less likely than girls to be involved in nonsport extracurricular activities. Boys were also more likely than girls to be affected by a social desirability bias. African Americans were less likely than Caucasians to live in a two-parent household. Caucasian girls reported the highest grades in school, followed by Caucasian boys, African American girls, and African American boys. African American boys, on the other hand, reported the highest levels of sports participation, followed by Caucasian boys and then girls of both races. African American girls reported lower school attachment than did any of the other groups. Caucasian boys reported the highest levels of physical well-being, followed closely by African American boys. Girls had the lowest physical well-being scores. African American boys reported the highest levels of self-esteem. African American girls and Caucasian boys had similar levels of self-esteem, while Caucasian girls reported the lowest levels of self-esteem.

Analyses

To establish the effect size of the association between sports participation and self-esteem, we calculated correlations between these variables for each of the four gender-by-race groups.³ Then regression models were tested in two stages. In the first model, sports participation and the control variables were used to predict self-esteem. In the second model, the hypothesized mediators, school attachment and physical well-being, were added to variables in the first model. By randomly splitting each race and gender group into two roughly equal parts, we were able to fit the models in the first subsample and cross-validate our results in the second subsample.

³These correlation coefficients were calculated from the R-squared value obtained when a single variable is used to predict an outcome in a regression equation. Since these analyses were conducted using SUDAAN, the square root of this value can be interpreted as a zero-order correlation corrected for design effects.

We set the following criteria for judging whether the mediation hypothesis was confirmed: (1) sports significantly predicted self-esteem in the first model; (2) the sports effect was significantly diminished when the mediating variables were added in the second model (see Baron and Kenny 1986); and (3) the same patterns appeared in the cross-validation sample. The confirmation of the second hypothesis depended on the presence of significant gender and race differences in the mediated models.

RESULTS

Direct Effects of Sports

The zero-order correlations between sports participation and self-esteem were highest for Caucasian boys ($r = .19$) and African American boys ($r = .18$), followed by Caucasian girls ($r = .16$). The association between sports participation and self-esteem was lowest for African American girls ($r = .09$).

Table 2 shows the results for the first set of models. Caucasian girls ($B = 0.17$, $SEB = 0.02$, $p < .01$) and boys ($B = 0.24$, $SEB = 0.02$, $p < .01$) and African American girls ($B = 0.11$, $SEB = 0.04$, $p < .01$) and boys ($B = 0.26$, $SEB = 0.04$, $p < .01$) all show a significant effect of sports participation on self-esteem in the model that includes the control variables.

Mediated Sports Effects

To test the hypothesis that a significant sports effect is mediated, we added school attachment and physical well-being to the models previously tested (see Table 2). The drop in the sports coefficient shows that the relationship between sports participation and self-esteem is significantly mediated for all four groups. In fact, the mediators account for the entire covariance between sports and self-esteem (i.e., the remaining sports effect is not significantly different from zero) for African American girls and boys⁴ and for Caucasian boys. On the other hand, for Caucasian girls a residual *negative* sports effect ($B = -0.04$, $SEB = 0.02$, $p < .05$) emerges after accounting for the mediating effects of physical well-being and school attachment.

School attachment and physical well-being are moderately correlated (Caucasian girls, $r = .47$; Caucasian boys, $r = .42$; African American girls, $r = .39$; African American boys, $r = .42$) but distinct variables. To test the relative strength of the mediating effects of school attachment and physical well-being separately in the relationship between sports and self-esteem, we removed one and then the other from the mediated models (see Table 2). These follow-up models showed that the effect of sports on self-esteem is carried through each hypothesized mediator separately for Caucasians and for African American boys. However, for African American girls, only the mediating effect of physical well-being significantly explained the sports effect on self-esteem. For this group, the initial sports coefficient ($B = 0.11$) was larger than the sports effect when mediated by physical well-being ($B = 0.03$, 95% $CI = -0.03, 0.09$) but not significantly larger than the sports effect when mediated by school attachment ($B = 0.08$, 95% $CI = 0.00, 0.16$).

DISCUSSION

Our results show that the positive effect of sports participation on self-esteem in adolescence is present for both Caucasian and African American adolescents. Further, this effect can be explained sufficiently by the mediating variables of physical well-being and school

⁴For African American boys, there was a residual positive sports effect ($B = 0.10$, $SEB = 0.03$, $p < .01$), but this effect was not replicated in the cross-validation sample.

attachment. Thus our first hypothesis, which postulated a mediated relationship between sports participation and self-esteem, is supported. The results show that the two mediating variables have some shared but primarily separate effects and that physical well-being is the more powerful mediator.

Physical Well-being

We postulated that the enhanced physical well-being that accompanies sports participation is likely to lead to increased self-esteem because, as predicted from the self-systems theory of the construction of self-esteem, participating in a sport is a positive contributor to having a healthy body, which one undertakes for one's self. It is likely to make a young person feel competent, autonomous, and connected to others, which are the three motives proposed by Connell and Wellborn (1991) as underlying the motivational bases of the self-systems approach to self-esteem.

The self-esteem benefits of a focus on physical well-being are in line with the shifting health promotion paradigm from a concern over weight control to a focus on physical wellness (Cogan 1999; Cogan and Ernsberger 1999). Until recently, physical well-being was rarely the focus of research on the association between physical activity and physical health; rather the focus was on the association between inactivity and obesity (see, e.g., Gortmaker et al. 1996). Cogan (1999; Cogan and Ernsberger 1999) and Ernsberger and Koletsky (1999) have criticized the dominant paradigm in health promotion as overly focused on weight loss. Ernsberger and Koletsky (1999), for example, recommend, instead, a focus on physical wellness that encompasses healthy lifestyles, positive attitudes to health and self-care, and a disregard of predetermined weight standards, which our results support as beneficial to self-esteem. Our focus on physical well-being as a concomitant of physical activity, which is, in turn, associated with self-esteem, is also in line with feminist critiques of the women's fitness movement as supported by advertisers and the mass media (Bordo 1993; Duncan 1994; Eskes and Duncan 1998), which has subverted women's health pursuits into beauty pursuits.

School Attachment

We have argued, using social control theory, that attachment to school is associated with increased esteem because attachment is a concomitant of conformity to what the social institution of schools values. Schools in the United States value participation in extracurricular activities, such as a school sport. With increased conformity comes increased access to rewards in the system, such as good grades and popularity with peers and teachers. Access to such rewards makes young people feel good about themselves, which is manifested in high self-esteem.

Gender and Race Effects

The second hypothesis of gender and race patterns in the mediated relationship is also supported. Although we found similarities across gender and race, there are, on closer inspection, gender, race, and gender-by-race differences in the mediated relationship. The similarities are in the initial relationships between sports participation and self-esteem and the finding that the mediating variables, school attachment and physical well-being, substantially reduce this relationship in all four gender-by-race groups. We describe the patterns of gender and race differences below for each gender and race group.

Caucasian Girls—Caucasian girls had the lowest self-esteem levels of the four groups in the study, and their sense of physical well-being was also low. While the sports participation model (without the mediators but in conjunction with the control variable) was able to explain 9 percent of the variance in self-esteem for Caucasian girls, the mediated model

explained 43 percent, which was the largest variance in self-esteem explained by the mediated model in all four groups.

In the mediated model an unexpected finding was obtained for Caucasian girls. When the mediating variables of school attachment and physical well-being were introduced, the net effect of sports participation on self-esteem became *negative*. In other words, the positive effect of sports participation on self-esteem was absorbed by the mediating variables, leaving behind a negative residual. It appears that for Caucasian girls, sports participation encapsulates multiple effects with contradictory influences. School attachment and physical well-being are two of the beneficial effects of sports participation that promote self-esteem. When these effects were statistically controlled, the remaining sports effect was negative. It may be that the unmeasured negative effect was the motivation to engage in physical activity to lose weight or to become more attractive, which has been found to be negatively associated with self-esteem (McDonald and Thompson 1992). Indeed, the residual negative effect finding lends support to the feminist critique of the pursuit of beauty through physical activity (Bordo 1993; Duncan 1994; Eskes and Duncan 1998). Thus what we have found is that for Caucasian girls, sports participation is associated with enhanced self-esteem to the extent that it is also associated with increased school attachment and sense of physical well-being. However, there are other components to the impact of sports participation that may not be so beneficial to self-esteem. Our finding of a residual negative effect of sports participation on self-esteem for Caucasian girls is similar to results obtained by Richman and Shaffer (2000) who examined the self-esteem of 220 college women (85 percent Caucasian) in light of retrospective reports of precollege sports involvement. While they found that precollege sports participation was associated with self-esteem in college, this effect was totally explained by the intervening variables of body image, perceived physical competencies, and gender identity. The authors conclude that participating in sports can promote self-esteem among women by fostering physical competencies, favorable body images, and gender flexibility. However, in the absence of such benefits, participation in sports may have little benefit for women's self-esteem and may even undermine it.

Considering the long history of sports as a male domain, closely tied to images of masculinity (Connell 1987, 1995; Messner 1992), it would appear that this residual negative effect is associated with violating prevailing gender norms for some Caucasian adolescent girls. Even as larger numbers of girls participate in sports, which has created greater acceptance of girls athleticism, sports remains male identified. As Cahn (1994), Desertrain and Weiss (1988), Hargreaves (1994), and Kane (1995) have pointed out, girls' who excel in this masculine endeavor can be subjected to a range of negative reactions, from questions about their femininity to questions about their sexual orientation. Thus, depending on the supportiveness of their social milieu, participating and excelling in sports can be complicated for some girls, which may account for the lower self-esteem of Caucasian female athletes when the positive effects of physical well-being and school attachment are controlled for. Future research should focus on unraveling the residual negative effect of sports participation on self-esteem among Caucasian girls.

Caucasian Boys—Caucasian boys had moderately high self-esteem, similar to African American girls but lower than African American boys. Their school attachment was high (similar to Caucasian girls and African American boys), and they had the highest levels of physical well-being of all the groups. The sports participation model without the mediators but with the control variables explained 8 percent of the variance in their self-esteem scores, whereas the mediated model explained 40 percent. For Caucasian boys, the mediated relationship reduced to insignificance the impact of sports participation on self-esteem. In the mediated model physical well-being appeared to play a more important role than school attachment, although both variables made significant contributions to the variance explained

in self-esteem. Thus Caucasian boys' self-esteem benefited from their participation in sports because sports increased their attachment to school and increased their sense of physical well-being. The lack of a corresponding negative residual effect of sports participation for Caucasian boys needs to be viewed in light of prevailing constructions of masculinity (Messner 1992; see also Connell's [1995] notion of hegemonic masculinity),⁵ in which sports plays a defining role.

African American Girls—African American girls had moderately high self-esteem, only second to that of African American boys, but their sense of physical well-being was low (similar to that of Caucasian girls) and their school attachment was the lowest of all four groups. The sports participation model was able to explain only 2 percent of the variance in African American girls' self-esteem. With the introduction of the mediators, school attachment and physical well-being, the proportion of variance explained in self-esteem rose to 28 percent but this was still lower than the explanatory power of the mediated model in the other three groups. African American girls were the only group for whom school attachment did not have a significant mediating effect on self-esteem by itself. It appears that the variables in our models did not predict African American girls' self-esteem as strongly as the self-esteem of the other three groups, suggesting that African American girls get their considerably high self-esteem from sources other than those included in this study.

The mediated model was most effective in explaining Caucasian girls' self-esteem and least effective in explaining that of African American girls. This suggests that African American girls' self-esteem does not reap as large benefits from an increased sense of physical well-being and school attachment associated with participating in sports as does that of Caucasian girls; African American girls' self-esteem is influenced by other factors not examined in this study. Future research should examine which factors, in addition to physical well-being, contribute to African American girls' self-esteem. It is worth noting in passing that African American girls, unlike Caucasian girls, do not seem to suffer from a negative effect of participating in sports when the two mediating factors are taken into consideration. We can speculate that this lack of a negative residual effect implies that African American girls' participation in sports does not constitute as large a threat to notions of hegemonic masculinity. Hence African American female athletes may be escaping some of the negative sanctions visited on Caucasian girls.

African American Boys—African American boys had the highest level of self-esteem of the four groups. Their school attachment was high, and their sense of physical well-being⁴ was also moderately high. The sports participation model explained 6 percent of the variance in their self-esteem scores, but the mediated model explained 36 percent. This suggests that the variables in the study did a better job of explaining African American boys' self-esteem than that of African American girls, but this was still lower than the explanatory power achieved by the mediated model for Caucasian girls and boys.

In addition, there was a residual positive effect of participation in school sports on African American boys' self-esteem. Although this effect did not reach statistical significance in the second split half sample, it was the only positive sports effect on self-esteem that remained after controlling for the mediating variables. In other words, while a sense of physical well-being and attachment to school that is associated with participating in a school sport absorbed all the positive variance associated with explaining self-esteem from sports participation for both Caucasian girls and boys and for African American girls, African

⁵Connell (1995:77) defines hegemonic masculinity "as the configuration of gender practice which embodies the currently accepted answer to the problem of the legitimacy of patriarchy, which guarantees (or is taken to guarantee) the dominant position of men and the subordination of women." He includes athleticism in the current configuration of the masculine role.

American boys may be deriving unique benefits to their self-esteem through school athletics. We postulate that this positive effect may arise from sports prowess occupying an even more central place in African American young men's constructions of their masculinity than Caucasian young men's (Connell 1995; Staples 1982). Eitzen (Eitzen 1996, 2000) and Frey and Eitzen (1991) have pointed out that African American male athletes reap far lower benefits from their athletic prowess than Caucasian men in terms of educational opportunities, earnings, and even playing position and playing time. Nevertheless, the general restriction of African American men's opportunities in the United States makes the example set by a few African American superstar athletes irresistible, such that many African American young men believe that sports is the road to success for them. Hence when they excel in sports they feel good about themselves, above and beyond the positive effects of an increased sense of physical well-being and school attachment. This interpretation is borne out by the finding that African American boys had the highest self-esteem and comprised the group most likely to report participating in a school sport.

LIMITATIONS

Although we use language such as "sports effect" and "the mediation of this effect" in our results, this must be interpreted as statistical effects only. Given that these are cross-sectional analyses, we cannot assume causal directionality in these relationships. It may be that other processes are at work. For instance, sports participation may mediate the relationship between physical well-being and self-esteem. Alternatively, school attachment and sports participation may be independently influenced by self-esteem. To tease apart the causal effects in this system of interrelationships, we plan to conduct further analyses using multiple waves of data.

These results can be confidently generalized to students who claim sole membership in Caucasian and African American categories. The experience of biracial students and students from other ethnic-racial backgrounds remains unknown. We intend to conduct similar tests of the relationships among sports, school attachment, physical well-being, and self-esteem for multiple categories of Asian and Hispanic students.

The results obtained are also limited by the operationalizations of the constructs in the model, which is, in turn, limited by the information available to us in this secondary analysis of the Add Health in-school data. The sports participation variable employed in our models refers to self-reports of participating (or intending to participate in the current academic year) in a number of sports offered at the school. While all participants in sports can be considered physically active because they get exercise, not all who are physically active get their exercise by participating in a school sport. In this regard, the results of this study cannot be generalized to self-esteem implications of being physically active. Similarly, the inclusion of the intent to participate in a sport in the operationalization of our study variable may have captured a subset of students who did not follow through with their intent and missed others who decided at the last minute to participate in a sport.

However, these ambiguities in the operationalization of sports participation would serve to weaken the relationship between sports participation and self-esteem. The results reported here are likely to be conservative estimates of the true relationships between these constructs. Future research should examine the sports participation effect in greater detail, ideally including information about all sports participation, the type of sport, the frequency of participation, and the respondent's own experience of the sport environment.

An additional limitation concerns the measure of self-esteem employed in the study. Self-esteem can be both global, such that it can be measured as a unidimensional construct, and specific, which requires a multidimensional measure (Harter 1999; Rosenberg et al. 1995).

We employed a global measure of self-esteem, the only one available in this data set, which measures how one feels about one's self in general. Researchers who have focused on specific dimensions of self-esteem have reported strong relationships between evaluations of the physical self-system (Sonstroem 1997a, 1997b) or athletic competence (Harter 1999) and physical activity, stronger than the relationship between general self-esteem and physical activity. In other words, the specific dimension of self-esteem that reflects the domain of physical competence is more closely related to being physically active. Indeed, Sonstroem (1997b) argues that evaluations of the physical self mediate the relationship between physical activity and general self-esteem. Future research should examine this specific dimension of self-esteem as a mediator alongside school attachment and physical well-being.

Finally, there are circumstances in which physical activity is *not* associated with physical well-being, especially among elite athletes who compete at high levels. Prominent among these are studies of the female athlete triad syndrome—eating disorders, amenorrhea, and premature osteoporosis associated with very low body fat achieved through excessive exercise and low food intake (Anderson 1999; Hobart and Smucker 2000; Nattiv and Lynch 1994). Disordered eating—to gain or to lose weight depending on the type of sport—has also been studied outside of the female athlete triad (Brooks-Gunn, Burrow, and Warren 1988; Brownell and Rodin 1992; Opliger et al. 1993; Thompson and Sherman 1999). The use of anabolic steroids among male and also a few female athletes has been another research focus (Fisher, Juszczak, and Friedman 1996; Johnson et al. 1989; Krowchuk et al. 1989). Research on the female athlete triad, disordered eating, and steroid use among athletes underscores a limitation of the association among participating in a sport, a sense of physical well-being, and self-esteem. The relationship may not hold at the extreme end of sports participation.

IMPLICATIONS

The results of this study have implications for social interventions. When the goal is to increase self-esteem of Caucasian and African American girls and boys, investing in sports programs is likely to pay off, because participating in school sports is associated with a sense of physical well-being and attachment to school, both of which are associated with increased self-esteem. Directly investing in increasing a sense of physical well-being and school attachment is likely to be even more successful, but without a sports component such programs may not be as popular and easy to fund. Because physical well-being was a more powerful mediator than school attachment for all gender and race groups, it is recommended that sports programs incorporate messages about the health benefits of physical activity to achieve higher levels of impact.

Indeed, that a sense of physical well-being holds the most explanatory power for all four groups of adolescents has important implications for understanding self-esteem in school settings. It appears that adolescents benefit psychologically from participating in a school-sponsored sport when their focus is on health and fitness rather than on more superficial concerns such as body image or physical attractiveness. Feeling fit and healthy through sports participation may be more beneficial for one's self-esteem than engaging in physical activity to look good in others' eyes.

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TABLE 1
 Group Means of Analysis Variables (Adjusted for Nonprobability Sampling), by Race and Gender

Variable	Range	Caucasian Girls (N = 18,078)		Caucasian Boys (N = 17,566)		African American Girls (N = 4,653)		African American Boys (N = 3,535)	
		Mean	Mean	Mean	Mean	Mean	Mean		
Grade in school	7–12	9.65 _a	9.71 _a	9.62 _a	9.59 _a				
Nonsport [†]	0–1	0.68 _a	0.46 _b	0.66 _a	0.44 _b				
Social desirability [†]	0–1	0.14 _b	0.17 _a	0.12 _b	0.17 _a				
Mother's education [†]	0–1	0.43 _a	0.43 _a	0.41 _a	0.41 _a				
Two-parent family [†]	0–1	0.80 _a	0.79 _a	0.49 _b	0.50 _b				
Academic success	1–4	3.12 _a	2.99 _b	2.83 _c	2.69 _d				
Sports participation [†]	0–1	0.56 _c	0.65 _b	0.53 _c	0.70 _a				
School attachment	1–5	3.47 _a	3.51 _a	3.32 _b	3.48 _a				
Physical well-being	2.5–5	3.74 _c	4.09 _a	3.72 _c	4.01 _b				
Self-esteem	2.5–5	3.75 _c	3.97 _b	3.99 _b	4.13 _a				

Notes: Means with the same subscript are not significantly different at the $p < .05$ level.

[†]These values represent the proportion of respondents reporting involvement in a nonsport extracurricular activity, never having lied to their parents in the past year, having a residential mother or mother figure who has had at least some education or training beyond high school, belonging to a family with two parental figures, and current or anticipated participation in at least one active sport.

TABLE 2

Linear Regression Coefficients for Sports and Mediator Variables in Models Predicting Self-Esteem, by Race and Gender (First Split Subsample)

	Caucasian Girls (N = 9,085)	Caucasian Boys (N = 8,736)	African American Girls (N = 2,338)	African American Boys (N = 1,765)
	B (SEB)	B (SEB)	B (SEB)	B (SEB)
Unmediated models				
Sports	0.17 (0.02)**	0.24 (0.02)**	0.11 (0.04)**	0.26 (0.04)**
R^2	0.09	0.08	0.02	0.06
Mediated models ^a				
Sports	-0.04 (0.02)*	0.01 (0.02)	0.03 (0.03)	0.10 (0.03)**^b
School attachment	0.34 (0.01)**	0.28 (0.04)**	0.26 (0.03)**	0.28 (0.02)**
Physical well-being	0.41 (0.01)**	0.45 (0.02)**	0.38 (0.03)**	0.37 (0.03)**
R^2	0.43	0.40	0.28	0.36
Sports	0.05 (0.02)**	0.10 (0.02)**	0.08 (0.04)*	0.15 (0.04)**
School attachment	0.49 (0.01)**	0.41 (0.05)**	0.38 (0.03)**	0.39 (0.02)**
R^2	0.32	0.26	0.19	0.25
Sports	-0.01 (0.02)	0.08 (0.02)**	0.03 (0.03)	0.15 (0.04)**
Physical well-being	0.56 (0.01)**	0.56 (0.02)**	0.49 (0.03)**	0.48 (0.03)**
R^2	0.34	0.33	0.22	0.27

Notes: Control variables were also included in the models above but are not shown in this table. These results have been statistically adjusted for the nonprobability sampling design used in the Add Health study.

^aBoldface coefficients indicate a significant drop in the sports effect as compared to the associated unmediated coefficients (Baron and Kenny 1986).

^bThis coefficient was not significant in the second randomly split subsample.

* $p < .05$;

** $p < .01$.