



## Examining racial differences in the effect of popular sports participation on academic achievement

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### ABSTRACT

Using data from the Education Longitudinal Study of 2002, this study employs propensity score modeling to measure the effects of participation in varsity football (among men) and varsity basketball (among men and women) in the 10th grade on students' GPAs and math test scores in the twelfth grade. This study also investigates whether the effect of sports participation on student achievement differs between black and white students. The results show that participation in varsity football negatively affects the 12th grade GPAs of black, but not white, men but does not affect the math test scores of either of these subgroups. Moreover, varsity basketball participation leads to higher GPAs in the 12th grade among white, but not black, women. Implications of the different operationalizations of sports participation, the investigation of different student subpopulations, and the different methods of analysis are discussed.

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### 1. Introduction

Sociological inquiry regarding the relationship between sports participation and academic outcomes dates back 50 years, beginning with James Coleman's (1961) study of *The Adolescent Society*. Since this seminal work, researchers have taken a great interest in students' athletic participation because of the unique status of the student athlete in American society. Coleman's vision of the student athlete was that of a member of the leading crowd, and the "athlete scholar" was ranked as the highest status in the school setting (Coleman, 1961). More modern evaluations of student athletes, which recognize the prominence of African Americans in high-profile sports such as football and basketball, emphasize the intensive training and preparation for these teams that come at the expense of academic development (Edwards, 1984; Patterson, 1998; Washington and Karen, 2001). While many student athletes today, particularly African American male students, dream of careers as professional athletes, few are able to attain this goal. Accordingly, it is important that all student athletes achieve the education they will need to be successful in other realms of the labor market (Edwards, 1984).

While it is commonly believed that sports activities are both academically and developmentally beneficial to youth, the empirical evidence is mixed. Although several studies have shown that participation in athletic activities is associated with increased levels of academic achievement (Broh, 2002; Eccles and Barber, 1999; Feldman and Matjasko, 2005) and educational attainment (Hanks and Eckland, 1976; McNeal, 1995), others have found that sports participation is not significantly related to grades in high school (Eitle and Eitle, 2002; Hanks and Eckland, 1976; Marsh, 1993). Further, studies focusing on minority youth have found that sports participation does not significantly improve, and may actually be detrimental to, the grades and test scores of Hispanic and African American students (Eitle and Eitle, 2002; Melnick et al., 1992).

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Past studies have generally relied on cross-sectional and longitudinal regression techniques, and many of these studies utilize a measure of sports participation that includes participants from any interscholastic sport from junior varsity swimming to varsity football. In contrast, the current study employs propensity score modeling separately for white and African American students to uncover the differences in academic achievement between athletes on two varsity sports teams and their classmates that have similar *propensities* of participating on these teams (i.e. non-participants who have very similar family and educational background characteristics). Because past research has suggested that participation on high-profile sports teams detracts from the academic preparation of students and provides unrealistic expectations for professional sports careers among minority youth (Edwards, 1984), I focus specifically on participation in varsity football and varsity basketball, the two most popular sports in which over 50% of professional athletes are African American (Eitzen and Sage, 2003). While opportunities for professional athletic careers are still limited among women (Eitzen and Sage, 2003), the introduction of Title IX has increased the endorsement of professional female athletes and sports leagues, the most notable example being the WNBA (Videon, 2002). Therefore, I estimate the effects of varsity basketball participation on academic outcomes among both male and female students. Finally, past studies have found that racial differences in the effect of sports participation on students' academic achievement vary depending on the measure of achievement under investigation (Eitle and Eitle, 2002; Melnick et al., 1992), and so I look at the effects of participation in these two varsity sports on both 12th grade GPAs and math test scores.

Propensity score models are particularly useful when investigating the effects of sports participation because past studies have shown that varsity athletes systematically differ from non-athletes on background characteristics (i.e. the selection of students who participate on sports teams is not random) (Fejgin, 1994; Feldman and Matjasko, 2005; Hanks and Eckland, 1976; Videon, 2002). Therefore, it is only by matching athletes and non-athletes based on the propensity of sports participation that researchers can estimate the counterfactual, or the outcome that the athlete would have experienced if he or she had not participated in the sport (Rosenbaum and Rubin, 1983). Moreover, propensity score models estimate the "average effect of treatment on the treated," which is more substantively interesting to researchers investigating the effects of being exposed to a specific experience than an estimated effect that has been averaged across members of a population who may or may not have been exposed to the independent variable of interest (Winship and Morgan, 1999). If sports participation truly causes students to have more beneficial academic outcomes, then it is likely that previous OLS findings have *underestimated* the effects of sports participation by averaging estimates among those who participated on these teams as well as students who did not actually participate on these teams. Therefore, we would expect estimates of the ATT to be larger than OLS results. However, if OLS estimates are larger than estimates of the ATT, this might indicate that the positive association between sports participation and academic achievement largely stems from the systematic differences between groups that propensity score models are better equipped to handle.

In the current study, propensity score models are performed separately for white and African American students to investigate whether the effects of participation in varsity football (among men) and varsity basketball (separately for men and women) on 12th grade achievement differs by race. OLS regressions are also performed in order to compare the results that are obtained using different analytic methods. The results of this study will put the field one step closer to understanding the causal relationship between participation in two popular sports (varsity football and varsity basketball) and two measures of academic achievement (12th grade GPAs and math test scores) and how these effects differ by race and gender.

## 2. Previous research

### 2.1. Contrasting theoretical perspectives

Past research has utilized a variety of theoretical perspectives to support a positive association between sports participation and academic success. For example, social capital theory emphasizes the use of sports activities to extend social networks and improve adolescents' ties with their parents, peers, teachers, school, and community (Broh, 2002; Coleman, 1988; Portes, 1998). Interscholastic sports, which are normally organized by teachers or faculty within the school, provide a medium through which otherwise disengaged students may become integrated into the school community and obtain guidance toward succeeding in school. Coaches themselves are likely to be instrumental in helping athletes make decisions about college and their future careers (Snyder, 1972). Adolescents' parents may also become more involved in the school community when their children participate in interscholastic sports, providing them with new informational ties with teachers, administrators, and other parents (Broh, 2002). Through sports participation, disadvantaged students may obtain more knowledge about high school success and planning for college than they would otherwise have access to.

Another theory that predicts a positive effect of sports participation on academic achievement, developmental theory (Broh, 2002; Dworkin et al., 2003; Schreiber and Chambers, 2002), argues that students who participate in sports activities gain a unique opportunity to influence their own development based on their experiences in the activity. Skills that may be developed include goal-setting, time management, deference to authority figures, control over impulsive behavior and emotions, and a deeper understanding of individuals from different backgrounds (Dworkin et al., 2003). While this theory appears to support the idea that sports participation leads to positive academic outcomes, especially through the development of time management and goal-setting behaviors, it has been suggested that athletes may choose to develop an identity that does not necessarily require academic success (Marsh, 1992).

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