

Abstract

The purpose of this study is to explore the direct, indirect, and total effects of high school sports participation on educational attainment for Black males using the Educational Longitudinal Study (ELS: 2002-2006), a large, nationally representative, database. A path analysis procedure for determining underlying causal relationships between variables is presented. While the implications of the results of this study are relevant for all who work with this population, school counselors are specifically highlighted.

Purpose of the Study

The purpose of this study is to explore the direct, indirect, and total effects of high school sports participation on college enrollment for Black males using a large, nationally representative, longitudinal database (ELS:2002). Previous studies (e.g. Spreitzer, 1994; Eide & Ronan, 2001) have produced varied results as to the nature of these relationships between these variables. The varying degrees in which other factors directly and/or indirectly effect college enrollment may explain such differences, in part. Socioeconomic status, academic achievement, and student educational expectations have all been deemed related in some way to educational attainment, and therefore are considered in this study as well. Two different hypotheses have emerged from the literature with regard to sports participation in general: 1) Sport-impedes-mobility and 2) Sport-enhances-mobility (Braddock, 1981).

Educational Attainment

Educational attainment is a fundamental indicator of adult well-being (Ou & Reynolds, 2008). Sample benefits include better physical health, positive mental health, and greater use of preventive health care (Heckman, 2000). There are economic benefits as well, as the U.S. Census Bureau (2008) states that those individuals who complete high school earn close to \$10, 000 more annually than those who do not complete high school, while those with some college earn approximately \$13, 000 more annually than those not completing high school, and those completing a bachelor's degree close to three times as much annually as someone who does not complete high school. Given that the importance of educational attainment only increases from year to year, it is vital that the

factors predicting such be identified as fully as possible (Ou & Reynolds, 2008), and done so particularly for groups who lag educationally.

Landmark studies, including the Blau-Duncan Model (Blau & Duncan, 1967) and the Wisconsin Model (Sewell, Haller, & Portes, 1969), considered sociological models, have concluded that there are several reliable predictors of educational attainment, two of which are socioeconomic status and academic achievement. Research has consistently shown that social class has a significant effect on the formation of college plans (Temple, M., & Polk, K. 1986). In a study done by Rowan-Kenyon (2007), it was found that high school graduates who enrolled immediately in college had higher socioeconomic status than those graduates who delayed first enrollment or who did not enroll in college. Ou and Reynolds (2008) support this notion in their assertion that students with lower socioeconomic status are more likely to drop out of high school than their peers with a higher socioeconomic status, particularly because such status is typically accompanied by other risks. Such risks may include, but are not limited to, a limited pool of potential significant others in the lives of the students, particularly those having and conveying college plans (Haller & Portes, 1973).

According to Anderson and Keith (1997), one of the most important predictors of postsecondary educational attainment is high school academic performance. “The most widely used indicator is a standardized test score, deemed an appropriate measure of academic ability because it measures differences in terms of cognitive skills and abilities” (Lee, Daniels, Puig, Newgent, & Nam, 2008, pp. 309-310). Some researchers (e.g. Ensminger and Slusarcick, 1992) posit that a student’s academic achievement in as early as the first grade can predict whether or not he or she will complete high school. The

early academic success of a child may garner him or her attention from gifted programs, advanced classes, and the college preparatory curriculum that provides exposure to and readiness for postsecondary education. Rowan-Kenyon (2007) asserts that academic achievement is also associated with whether or not high school graduates either delayed or did not enroll in college.

A student's educational expectations are also associated with educational attainment (Gewertz, 2007; Ou & Reynolds, 2008; Charles, Roscigno, & Torres (2007). Students who articulate and maintain high educational expectations are likely to graduate from high school and enroll in college (Cook, 2008). Ou and Reynolds (2008) support this notion by stating that those students who drop out of high school typically have lower educational expectations than those who persist and graduate. In addition to social class variables, which clearly influence the educational attainment process, gender and race are strong predictors of attainment as well.

Regarding gender, females have increasingly enlarged the gap between themselves and males with regard to educational attainment. According to Peter & Horn (2005), the rates at which women have enrolled in undergraduate education over the past two decades have increased faster than those of men. From 1980 to 2001, women increasingly represented the undergraduate populations, rising from 52% to 56%, and projections to 2013 indicate that women will continue to outpace men (Peter et al., 2005). Examining race reveals clear patterns as well.

Although Blacks have demonstrated a gain in educational outcomes, Trusty (2002) posits that they are still less likely than White Americans to enroll in college immediately after high school. Perhaps more so than any other demographic category in

America, male adolescent African Americans seem to bear a disproportionate burden of negative life experiences—drugs, incarceration, violence, poverty, and premature death (Bateman & Kennedy, 1997)—and suffer educationally. Given that education is considered to be the most accessible means for achieving social, political, economic, and cultural liberation in the United States (Hopkins, 1997), this is particularly disheartening.

There are numerous plausible explanations (i.e. variables) that could potentially account for a portion of variance in educational attainment. A variable worthy of consideration is sports participation, as its role in the educational process of adolescents is argued to be substantial.

African American Males' High School Sports Participation

According to Majors (1998), sports could ultimately lock African American males into their low-status positions in society. Others (e.g. Harris, 1998) dismiss the idea that sports are an easy route to social mobility for African Americans. For example, posit that sports participation is considered to have positive effects for White males only (Harris & Hunt, 1982). Many researchers (e.g. Sailes, 1986) argue that African American male athletes today, while “making it” to the professional ranks, are being exploited along the way, particularly by being denied equitable access to a sufficient educational experience, thus producing no skills to be desired by the professional community outside of the sports community. The idea that sports are a critical component to the worlds in which Black male youth live is consistent across both the impedes-mobility and enhances- mobility hypotheses. However, whether or not sports is hurtful to this group in terms of developing other necessary skills to gain social, political, and educational mobility is where the views differ (Harris & Hunt, 1982). This study aims to further clarify the effect

that African American males' sports participation at the high school level has on college enrollment.

Methods

Participants

The participants and data used for this study are taken from the Educational Longitudinal Study of 2002 (ELS: 2002/2006). ELS:2002/2006 was sponsored by the National Center for Education Statistics of the Institute of Education Sciences (U.S. Department of Education). The researchers who completed this study surveyed over 15,000 students (who were in tenth grade at the time) and parents, along with their teachers, librarians, and principals during the base year (2002). Approximately 750 schools, which are public, Catholic, and other private schools, are represented in the surveys. The schools were selected first, and then the students were randomly selected within each school. There were also follow-up studies conducted in 2004 (students were in the 12th grade) and the most recent, 2006. This study uses data from the first (2002) and third (2006) waves, tracking the participants of concern across the four years. As suggested by the ELS: 2002/2006 data file documentation, the "G10COHRT" flag variable is used, which specifically restricts analyses to the 10th grade cohort (2002). The "G10COHRT" and "G12COHRT" flags were placed into the ELS:2002 dataset to allow researchers to appropriately identify to which population the second follow-up (2006) respondents belong (i.e. 10th grade cohort, 12th grade cohort, or both). The resulting sample size after employing the necessary flags (i.e. G10COHRT, only Black males, and only those cases that included all data) is 155. To account for the effects of the multistaged sampling design used by ELS: 2002, the standard errors were computed by a

software program (i.e. AM). According to Gregorich, in Hahs-Vaughn, (2006), if there is no accommodation for clustering, an underestimation of standard errors is likely. Unlike SPSS, the AM program accounts for clustering in samples, automatically providing accurate standard errors for complex samples like ELS:2002 by using a Taylor-series approximation. While it does not provide the extensive array of statistical analyses, it provides these appropriate standard errors, which are then used to calculate t statistics to determine tests of significance.

The data from the base year in 2002 are used to obtain student demographic information, such as socioeconomic status, academic achievement, and student educational expectations. The level of sports participation is also determined from the data included in the first wave (2002). Data from the third wave (2006) is used to determine whether or not a student enrolled in college within the past two years.

Research design and procedures

The demographic information, namely socioeconomic status, academic achievement, and student educational expectations are taken from the first wave (2002) of data.

Participation in a school-sponsored sport during the first wave of the ELS: 2002/2006 data must be recorded in order for students to be considered as participants. The students' participation is determined by their participation in at least one sports activity recorded in ELS: 2002 (i.e. baseball, basketball, football, soccer, other team sports, and individual sports).

Whether or not a student enrolled in a college/university is measured during the third wave (2006). Only those cases that include Black male respondents are selected, as

this was a within-group study. Further, only those cases that contained all data are included.

Data Analysis

After descriptive analyses were used to describe the 10th grade athletes and non-athletes, path analyses are employed to examine the main question of concern in this study, which is the relationship between high school sports participation and college enrollment for Black males. Sports participation was examined by level (i.e. intramural, junior varsity, and varsity sports), producing three different models. Path analysis techniques allow for the examination of direct, indirect, and total effects between exogenous and endogenous variables. According to Stage, Carter, and Nora (2004), path analysis “is a variation of multiple-regression analysis and is useful for analyzing a number of issues involved in causal analysis.” Using the AMOS statistical package, goodness of fit indices are produced, in addition to path coefficients representing the direct, indirect, and total effects of high school sports participation on high school completion and college enrollment. Goodness of fit of a statistical model describes how well it fits a set of observations (Olobatuyi, 2006) Bayesian estimation is also employed, and its purpose is to to accommodate the categorical and dichotomous variables and provide accurate estimates.

Results

Table 1 shows the demographics for the 155 African-American males tracked from 2002 to 2006 for the purposes of this study. Numbers and percentages are shown to indicate how the 155 African-American males are grouped according to socioeconomic status, academic achievement, student’s educational expectations, and sports participation

This study investigated, via path analyses, the direct, indirect, and total effects of high school sports participation in 10th grade on college enrollment for Black males. Figure 1 provides a graphic representation of the hypothesized model. Prior to addressing the specific research question, however, a goodness of fit of the models was determined to ensure that the data fit the three models constructed. In addition to the goodness of fit (GFI), adjusted goodness of fit (AGFI), and Root Mean-Square Residual (RMR) indices, significance for each individual path coefficient was also determined. Interpreted like correlation coefficients (Lee, Harry, Puig, Newgent, and Nam, 2008), the closeness of the GFI and AGFI indices to 1 conveys a good fit of the data to the model. According to Olobatuyi (2006), RMR/RMSEA scores less than .08 are adequate, and scores less than .05 are good.

A path analysis was applied to examine the relationship between participation in high school sports participation, background variables, and college enrollment for Black males. Tables 2, 3, and 4 summarize the standardized direct, indirect, and total effects of each of the predictor variables within the intramural, junior varsity, and varsity sports models, respectively. Regarding effect size, all of the variables in the intramural, junior varsity, and varsity models accounted for approximately 23%, 24%, and 23% of the variance in college enrollment, respectively.

Discussion

The results of this study suggest that African-American males' participation in high school sports, except for junior varsity sports participation, does not significantly help or hinder their educational attainment, particularly college enrollment. The sports-impedement hypothesis (Braddock, 1981), as mentioned in other sports participation studies,

was not significantly supported. A number of reasons may account for this. Perhaps, for example, sports as an argued exploitative mechanism begins to occur as junior varsity athletes progress to more elite status? Perhaps it is not until later in life (i.e. college) where the disparity is more pronounced that significance is observed? Perhaps race and gender serve to neutralize the positive results that others (e.g. Marsh, 1993, Broh, 2002) that sports, in general, has on K-12 educational attainment?

The path analyses did serve to further clarify previous sports participation and educational attainment research (Picou et al., 1985, Sabo et al., 1993, Eide and Ronan, 2001), many of which controlled for certain variables to determine direct effects. By detailing the effects of sports participation by type and level, it added depth to the results of previous studies (e.g. Spreitzer, 1994) that only looked at varsity sports as a sports participation indicator. Using path analysis, the indirect effects, for example, were more readily visible and understood. The path analyses also clarified the direct and indirect effects of other relevant factors in the educational attainment process. For example, the socioeconomic status of the Black males in this study, as consistent with previous studies (e.g. Ou and Reynolds, 2008; Rowan-Kenyon, 2007) does have a positive and significant effect on both high school completion and college enrollment. It is further understood that socioeconomic status also has an indirect effect on high school completion and college enrollment through student expectations, academic achievement, and high school completion. Given the national achievement gap and college enrollment disparities that exist already between Whites and Blacks, the gap is only further exacerbated when Black males are impoverished. Academic achievement, another consistent factor noted in previous studies on educational attainment (e.g. Alexander, Entwisle, & Horsey, 1997),

was found to be positively and significantly related to high school completion (directly) and college attendance (indirectly). The hypothesized path model, which is based on previous research (e.g. Ensminger and Slusarcick, 1992; Rowan-Kenyon, 2007) and posited that academic achievement would have a significant effect on both, is supported. Also confirming prior research (e.g. Cook, 2008), student educational expectations prove to have a positive and significant direct and indirect effect on college attendance. While it did not have a significant direct effect on high school completion, it did have a positive and significant indirect effect on it through academic achievement.

Implications

The school counselor has the very challenging opportunity of managing the educational/vocational path of Black males, who are often subject to very negative circumstances that serve as barriers to such development. Consistent with previous research (e.g. Edwards, 1969; Majors, 1998; Rhoden, 2006) this particular group tends to be drawn to sports in an effort to escape their current social condition. For a group that can often feel powerless and locked out of social, political, and economic opportunities, sports provides a place to release suppressed anger and aggression, and feel powerful (Majors, 1992). School counselors must be diligent in coordinating efforts to ensure that this group closely knit their athletic endeavors to strong educational plans. There must be consistent advocacy efforts to create opportunities for success for them in addition to whatever success they are achieving in the sports arena. Black male athletes must feel empowered to succeed educationally as well as athletically. “Empowerment can be defined as a process of increasing personal, interpersonal, or political power so that individuals, families, and communities can take action to improve their situations”

(Holcomb-McCoy, 2007, p. 40). Such facilitated success opportunities could involve mentoring programs with rites of passage ceremonies, summer enrichment programs, honors and Advanced Placement class exposure, and volunteering opportunities. Further, targeted advocacy efforts can provide the needed voice for students when they are at a crossroads of choosing academic or athletic pursuits and possibly neglecting the other. “Advocacy is defined as action taken by counselors to facilitate the removal of external and institutional barriers for students’ well being” (Holcomb-McCoy, 2007, p.40).

According to Lee and Hipolito-Delgado (2007), it involves the process of arguing for a cause, either for one’s self or for another. Such programmatic efforts will help to address the expectations, for example, of Black male students of their own prospective educational attainment. Given the consistent significant relationship between student educational expectations and educational attainment, such intervention will certainly be worthwhile.

Given that sports functions within a complex system of which students are a part, future studies should explore more of that system to gain additional understanding of the dynamics surrounding Black males’ draw to, and possible benefit/hindrance from sports. School-level variables such as whether or not a school is in a high poverty area, or if the school is more known for its sports teams than its academic prowess are worth attention. Future research may also include examining the factors associated with resilience for those Black males who may have been from backgrounds that do not typically lead to positive educational attainment outcomes but have excelled and attained. Also, it would be particularly useful to know how Black athletes compare with non-athletes with regard to certain college preparatory requirements, such as strength of curriculum and grade

point average, given that on the surface it does not appear to have a significant effect on the completion of high school or college enrollment. That data would lend itself well to explaining what may be observed with regard to retention, or lack thereof, of Black male athletes at colleges and universities.

Limitations

The AMOS (Analysis of Moment Structures) program, employed in this study, is a structural equation modeling program that facilitates study of causal relationships between variables via path analysis. However, it does not take into account weights provided by large nationally representative datasets such as the Educational Longitudinal study of 2002. Panel weights are provided by ELS: 2002 because a group of students were followed over a period of time, and they help to account for unequal probabilities of selection, as well as to adjust for the effects of nonresponse. Thus, they allow for the generalization of the results to the national population. Unweighted estimates, which are provided in this study, may not be representative of the population. While the results of this study may only be applicable to the sample under review, the results of this study should not be ignored as they still confirm previous findings regarding the educational attainment process, and they pose new questions to be explored in future research. Future research might consider, for example, using a program that can incorporate panel weights so that the results could be applicable beyond that of the sample.

Another limitation, as is the case with many sports participation studies, is the selectivity factor (i.e. the common factors associated with who is choosing to participate in sports). While it is very difficult to account for this, future research should include

more extensive controls for the selectivity factor—for example, perhaps the data can be disaggregated by school type (public/private, urban/suburban/rural, etc.). Further, the college completion rates should also be considered in future studies, so as to observe the path of high school sports participation toward the ultimate credential of necessity in today's society, a bachelor's degree.

Table 1. Demographics for student population for the African-American male sample in 2002 (when in 10th grade)

Variable	Number N = 155	Percent 100
SES		
Quartile 1 (Low)	48	31
Quartile 2	55	35.5
Quartile 3	29	18.7
Quartile 4 (High)	23	14.8
Academic Achievement		
Quartile 1 (Low)	73	47.1
Quartile 2	43	27.7
Quartile 3	30	19.4
Quartile 4 (High)	9	5.8
Student Educational Expectations		
Don't Know	19	12.3
< HS Graduation	2	1.3
HS graduation or GED only	21	13.5
2-yrs of college	9	5.8
Attend 4-yr College, degree incomplete	15	9.7
Graduate from College	43	27.7
Master's Degree	24	15.5
Ph.D./other advanced degree	22	14.2
High School Sports Participation		
Did participate in at least one sport	107	69
Did NOT participate in at least one sport	48	31
Did participate in at least one team sport	107	69
Did NOT participate in at least one team sport	48	31
Did participate in at least one individual sport	12	7.7
Did NOT participate in at least one individual sport	143	92.3
Did participate in at least one intramural sport	84	54.2
Did NOT participate in at least one intramural sport	71	45.8
Did participate in at least one JV sport	60	38.7
Did NOT participate in at least one JV sport	95	61.3
Did participate in at least one varsity sport	52	33.5
Did NOT participate in at least one varsity sport	103	66.5

Figure 1. Hypothesized Path Model for the Determinants of High School Completion and College Attendance

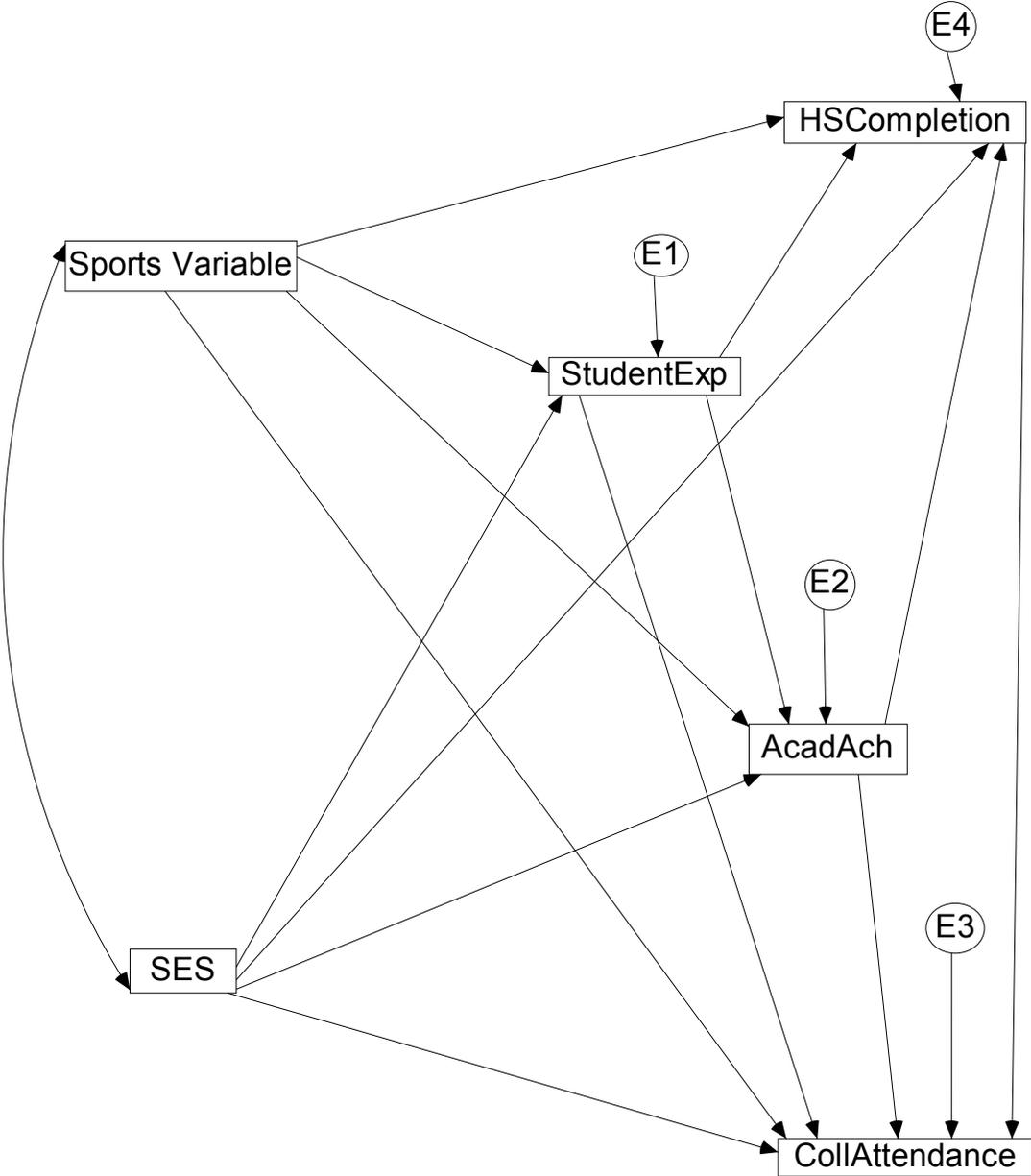


Table 2 Standardized Direct, Indirect, and Total Effects (on College Attendance)
Model 4: Intramural Sports
Squared Multiple Correlation: .233
Chi-Square: 4.8

Predictor	Direct Effects	Indirect Effects	Total Effects
Intramural Sports Participation	.000	-.009	-.009
Socioeconomic Status	.213**	.136**	.350**
Student Expectations	.197**	.017*	.215**
Academic Achievement	.000	.058*	.058*
HS Completion	.272**	.000	.272**

*p < .05 *p < .01

Table 3 Standardized Direct, Indirect, and Total Effects (on College Attendance)
Model 5: JV Sports
Squared Multiple Correlation: .235
Chi-Square: 3.8

Predictor	Direct Effects	Indirect Effects	Total Effects
JV Sports Participation	.000	.078**	.078**
Socioeconomic Status	.213**	.131**	.344**
Student Expectations	.197*	.016*	.213**
Academic Achievement	.000	.055*	.055*
HS Completion	.272**	.000	.272**

*p < .05 *p < .01

Table 4 Standardized Direct, Indirect, and Total Effects (on College Attendance)
Model 6: Varsity Sports
Squared Multiple Correlation: .233
Chi-Square: 3.8

Predictor	Direct Effects	Indirect Effects	Total Effects
Varsity Sports Participation	.000	.038	.038
Socioeconomic Status	.213*	.133**	.346**
Student Expectations	.197*	.016*	.214**
Academic Achievement	.000	.057*	.057*
HS Completion	.272*	.000	.272**

*p < .05 *p < .01

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