Journal of Leisure Research
2005, Vol. 37, No. 1, pp. 51-76

Participation in School-Based Extracurricular Activities and Adolescent Adjustment

Nancy Darling
Program in Psychology
Bard College

Linda L. Caldwell
School of Hotel, Restaurant, and Recreation Management
The Pennsylvania State University

Robert Smith
Department of Human Development & Family Studies
The Pennsylvania State University

This paper examines the association between participation in school-based extracurricular activities (ECAs) and adolescent adjustment (drinking, marijuana use, grades, academic attitudes and academic aspirations) among students from six high schools. Three major issues were addressed: the potential confounding of selective ECA participation by better adjusted students and measures of adjustment, variability in the strength of the association between ECA participation and adjustment as a function of adolescent demographic characteristics and activity type, and the role of peers as mediators of the association between ECA participation and adjustment. Adolescents who participated in ECAs reported higher grades, more positive attitudes toward schools, and higher academic aspirations once demographic characteristics and prior adjustment were controlled. Alcohol and marijuana use were not independently associated with ECA participation. The ECA-adjustment association did not vary by demographic characteristics and did not appear to be mediated by peer characteristics. Those who participated in non-sport ECAs reported consistently better adjustment than those who did not participate in ECAs and those who participate in sports.

KEYWORDS: *Extracurricular activities, adolescence, sport.*

Leisure provides adolescents with unique developmental opportunities. Unlike other social contexts, most notably school (Eccles, Lord, & Buchanan, 1996), leisure is a context in which adolescents are encouraged to manage their own experiences by exerting personal control over their environments and acting autonomously (Brown & Theobald, 1998; Silbereisen & Eyferth, 1986). Leisure also provides opportunities for identity exploration and skill

Address correspondence to: Nancy Darling, Program in Psychology, Bard College, Annandale-on-Hudson, NY 12504. Email: darling@bard.edu.

Author note: The author wishes to thank B. Bradford Brown, Sanford Dornbusch, and Laurence Steinberg for use of these data. Data collection was supported by grants to Laurence Steinberg and B. Bradford Brown from the U.S. Department of Education through the National Center on Effective Secondary Schools at the University of Wisconsin-Madison, and to Sanford M. Dornbusch and P. Herbert Leiderman from the Spencer Foundation.

building (Kleiber, 1999) as well as both social differentiation and integration. This paper examines one class of adolescent leisure: school-based extracurricular activities. School-based extracurricular activities provide highly structured leisure environments, in which adolescents can exert control and express their identity through choice of activity and actions within the setting, but which do not normally facilitate experimentation with roles and activities that are not sanctioned by adults. Because of these characteristics, participation in school-based extracurricular activities provides many of the positive developmental opportunities offered by other forms of leisure, but may provide more protection against experimentation with problematic activities such as drug or alcohol use than unstructured social leisure settings (Caldwell & Darling, 1999; Shann, 2001). In addition, participation in school-based extracurricular activities may provide adolescents access to social networks, activities, resources, and equipment that would be otherwise unavailable to them.

Mahoney and Stattin (2000) characterize highly structured activities as including "regular participation schedules, rule-guided engagement, direction by one or more adult activity leaders, an emphasis on skill development that is continually increasing in complexity and challenge, activity performance that requires sustained active attention, and clear feedback on performance" (pp. 114-115). These characteristics, according to Bronfenbrenner and Morris (1998) and Larson (2000), facilitate the development of initiative and lead to healthy adolescent development. Many school-based extracurricular activities, such as sports, student publications, radio stations, or performing groups, can be characterized as highly structured activities. Although outside of the narrowly defined academic curriculum (e.g., math, science, social studies, and English), extracurricular activities have traditionally been offered by schools as a way to offer developmental and leadership opportunities for youth, and to build school spirit (see, for example, Dewey, 1916). Extracurricular activities are seen as a way of offering academically gifted students a way of excelling within the school environment, a way for academically challenged students to achieve within the school setting, and as a way of creating a sense of shared community within schools. The positive impact that "extracurricular" activities can have on a school's academic mission is sometimes emphasized by use of the term "co-curricular" to describe non-academic school-based activities (e.g., Hovet & Vinton, 1993; Kezar & Moriarty, 2000; Wren, 1997), although the term "co-curricular" is sometimes limited to activities outside of the classroom explicitly designed to complement student learning.

Extracurricular activities have been touted by their proponents as enabling youths to socialize with peers and adults, set and achieve goals, compete fairly, recover from defeat, and resolve disputes peaceably (Carnegie Corporation of New York, 1992; Danish & Gullotta, 2000). At the psychological level, Dworkin, Larson, and Hansen (2003) argue that extracurricular activities stand out from other aspects of adolescents' lives at school because they provide opportunity for identity work, develop initiative, and allow youth to

learn emotional competencies and develop new social skills. At a more macro level, they argue that activity participation also allows youth to form new connections with peers and acquire social capital. In addition, extracurricular activities are one of the few contexts in which adolescents regularly come in contact with unrelated adults outside of the classroom (for review, see Darling, Hamilton, & Shaver, 2003).

The benefits of participating in structured leisure activities are certainly not limited to school-based extracurricular activities. However, school-based extracurricular activities are unique in several ways. First, they are one of the few aspects of leisure actively promoted by schools and are thus amenable to programmatic and social policy initiatives. For example, requirements for art, music, and physical education may expose youth to experiences that they may not have at home, encourage them to enroll in school-based extracurricular activities such as band, theater, or sports, and enrich their leisure outside of school. Many courses outside the traditional academic curriculum are designed specifically to provide youth with skills that will last a lifetime. Voluntary participation in school-sponsored extracurricular activities provides similar advantages. Although most extracurricular activities are offered after school, sometimes as part of an extended-care initiative for older youth, some schools allow students to participate in teacher-sponsored extracurricular activities during what would otherwise be traditional study halls (e.g., Butler & Manning, 1998). These "exploratories" allow students to engage in activities such as reading, magic, juggling, model building, knitting, or woodworking. Second, and most importantly for the purpose of this investigation, there are strong theoretical reasons for arguing that expanding adolescents' ties to the school through participation in extracurricular activities will enhance students' bonds to their school as an institution, increase social control over the individuals involved, and increase positive network ties to both teachers and to students (see, McNeal (1995) for a full discussion of this topic).

In sum, structured leisure experiences offer many potential benefits to youth. There may be logistical and practical advantages to offering youth the opportunity to participate in structured leisure in the context of school-based extracurricular activities. In addition, participation in leisure activities *in the school setting* may help foster additional emotional bonds to the school, create opportunities for emotional bonding to teachers and other school-associated adults in a context outside of the classroom, and thus increase students' emotional commitment to school and the adult-sanctioned values associated with schools (Hirschi, 1969). Extracurricular activities also provide youth the opportunity to associate with peers different from those they encounter at home and in the classroom.

Recent studies have documented the association of participation in school-based extracurricular activities with higher levels of academic commitment and better academic performance (Cooper, Valentine, Nye, & Lindsay, 1999; Eccles & Barber, 1999; Jordan & Nettles, 1999), lower rates of high school dropout (Davalos, Chavez, & Guardiola, 1999; Mahoney & Cairns,

1997; Mahoney & Stattin, 2000; McNeal, 1995), and lower levels of delinquency and arrests (Cooley, Henriksen, Van Nelson, & Thompson, 1995; Eccles & Barber, 1999; R. Larson, 1994; Mahoney, 2000; Mahoney & Stattin, 2000). Participation in extracurricular activities also facilitates the development of positive social relations across ethnic groups (Khmelkov & Hallinan, 1999), particularly for boys. These results are consistent with Holland and Andre's (1987) review of more than thirty earlier studies of extracurricular activities. Although some researchers and policymakers (e.g., Brown & Theobald, 1998; Carnegie Corporation of New York, 1992; Mahoney & Cairns, 1997) have advocated school-based extracurricular activities as a context that both promotes positive youth development and protects youth from risks associated with unsupervised free time, this context has received little attention from researchers interested in the broader issue of leisure in the lives of adolescents. The lack of a strong theoretical foundation for the roles of activities and leisure within developmental psychology in the United States (Silbereisen & Eyferth, 1986) and the marginal place of extracurricular activities within educational research (Brown & Theobald, 1998) have also contributed to this neglect. In addition to its theoretical interest, research documenting the benefits of extracurricular activities and other leisure-related courses are critical at a time when many school administrators are facing strong pressure to cut all activities that do not directly contribute to the core academic curriculum (for example, see Deasy, 2003). In addition to financial concerns, increasing paperwork loads and emphasis on standardized test performance have created time pressure on teachers and worries that "frills" will distract students from academics.

Critics of the extant literature on the association of extracurricular activity participation and adolescent development have noted two important limitations. First, much of this research is cross-sectional and thus the observed relationship between extracurricular activity participation and positive adolescent outcomes could result from selective participation, rather than from participation per se. For example, youth who are more positively oriented toward adult values, such as school success, are more likely to choose to participate in extracurricular activities (Rigsby & McDill, 1975). In addition, to the extent that participation is dependent upon auditions, tryouts, minimum GPA, cost, or other restrictions, students who participate in extracurricular activities are likely to evince more positive outcomes than their non-participating peers (Burnett, 2000). Second, the effect sizes observed are small (Holland & Andre, 1987). Although the literature has consistently documented positive outcomes associated with participation in school-based extracurricular activities, the magnitude of the difference between participants and non-participants is quite small.

This study addressed five questions relevant to these two limitations: (1) Is participation in school-based extracurricular activities associated with indicators of adolescent adjustment? (2) Can the association between participation in extracurricular activities and adolescent outcomes be documented

controlling for such selection factors as demographic characteristics and prior adjustment? (3) Is participation more beneficial for some demographic groups than for others and for those who are at relatively higher risk for difficulties in adjustment? (4) Is participation in sports associated with the same benefits as participation in non-sport activities? and (5) Is the association of extracurricular activity participation with adjustment mediated through characteristics of the adolescent peer group?

Three indicators of positive adolescent adjustment (grades, attitude toward school, and academic aspirations) and two indicators of problematic adjustment (alcohol use and marijuana use) were assessed. These indicators were chosen to represent the protective functions attributed to extracurricular activities as well as their positive potential to bind youth to the school. The goal of the first two research questions was to address the issue of selective participation. Because variability in individuals and activities may help to explain the small observed effect sizes, Questions 3 and 4 are designed to assess whether the association between participation and indicators of adjustment are uniform across individuals with different characteristics and in different social contexts and whether the association is the same for different types of activities. Question 5 was designed to illuminate the process through which extracurricular activity participation may influence adolescent development. Literature related to these questions will be reviewed in the next section.

Related Literature

Questions 1 and 2: Selection

Can the association between participation in extracurricular activities and adolescent adjustment be documented over and above factors that predispose adolescents to participate? Perhaps one reason that extracurricular activity participation has received less attention from researchers than might be warranted is that it is clear that adolescents who choose (and are chosen) to participate in school-based extracurricular activities differ from nonparticipants, making causal connections difficult to establish. Adolescents who participate in school-based extracurricular activities tend to be of higher social class, European-American, and more positively oriented to school compared to their peers (McNeal, 1998). Both rates of participation and the type of activity participated in vary by gender and grade (McNeal, 1999) in rather complicated ways. Girls are more likely to participate in all classes of extracurricular activities except for sports. Compared to younger students, older students are relatively more likely to be involved in non-sport activities, although older students become more dominant in varsity athletics. In addition, adolescents who participate in school-based activities are more oriented toward adult standards and are more likely to come from authoritative families (Durbin, Darling, Steinberg, & Brown, 1993). Because social class, race and ethnicity, school orientation, gender, and grade are each associated with

both participation and adjustment, it is difficult to untangle causal relationships between participation and adolescent adjustment from selection effects.

Longitudinal studies examining the relationships provide more convincing evidence of a causal association between extracurricular activity participation and adjustment. Mahoney and Cairns (1997) found that early dropout rates were markedly lower among high risk adolescents who had participated in at least one extracurricular activity during middle or early high school compared to those who had not. In a paper explicitly examining selection effects, Mahoney (2000) tested the hypothesis that early competence may have discriminated between those high risk youth who went on to become involved in extracurricular activities from those who did not. Within the high risk cluster, there was only marginal evidence for such a selection effect. Eccles and Barber (1999) also used a longitudinal design to control for early background characteristics and documented that activity participation was associated with subsequent academic achievement and orientation and problem behavior.

These analyses presented in this paper used a longitudinal design to examine two classes of individual and contextual characteristics that provide alternative explanations for the association between participation in extracurricular activities and adolescent adjustment: demographic characteristics (grade, gender, parent education, and ethnicity) and prior adolescent adjustment. Controlling for demographic characteristics and prior adolescent adjustment provides a replication of prior research (e.g., Eccles & Barber, 1999; Mahoney, 2000) in a larger and more socially diverse sample.

Questions 3: Variation as a Function of Demographic Characteristics

Mahoney (2000) has suggested that heterogeneity across extracurricular activities and in the effect of extracurricular activities across people are two reasons why associations between extracurricular activity participation and adolescent outcomes are small. This study tests that hypothesis by examining potential moderators between participation and adolescent adjustment. Variability in the relationship between extracurricular activity participation and adjustment was examined across four demographic characteristics (gender, ethnicity, parents' education, and grade).

Activity participation varies markedly as a function of demographic characteristics. Does participation have the same benefits for members of different subgroups? Some researchers have hypothesized that one process underlying the association of extracurricular activity participation with positive outcomes is that it exposes adolescents to new opportunities (Brown & Theobald, 1998). In addition, extracurricular activities, like other protective factors (Bronfenbrenner & Morris, 1998; Rutter, Champion, Quinton, Maugham, & Pickles, 1995) may be particularly beneficial to those youth who are at risk for poor adjustment or who have access to fewer resources. With regards to the adjustment indicators assessed here, this would be stu-

dents at heightened risk for alcohol and marijuana use, poor grades, more negative attitudes toward school, and lower academic aspirations. To the extent that participation benefits at-risk adolescents more than adolescents not at risk, looking only at main effects across the whole population would suppress observed effect sizes. For example, if European-American adolescents with highly educated parents are able to access resources and be exposed to positive adult role models who value education through their home and neighborhood environments, additional access available to them through extracurricular activities may provide few additional benefits with regards to the indicators of adjustment assessed here. (Note, however, that this may not be true with regards to other potential benefits, such as identity exploration or the development of new skills.)

The idea that at-risk populations will differentially benefit from exposure to highly structured leisure settings is consistent both with empirical research (e.g., Mahoney & Stattin, 2000) and with ecological systems theory (e.g., Bronfenbrenner & Morris, 1998). Werner and Smith found that "Participation in extracurricular activities played an important part in the lives of the resilient youths, especially activities that were cooperative enterprises . . ." (1982/1989, p. 505), where resilient youths were defined as those who were at high risk for adjustment problems, but who did not evince these problems. Based on this general principle, we predicted that participation in extracurricular activities will be (1) a relatively stronger predictor of all aspects of adolescent adjustment for youth whose parents are less educated; (2) a stronger predictor of academic adjustment (grades, attitudes toward school, and academic aspirations) for African-American and Hispanic-American youth than for Asian-American and European-American youth; (3) a stronger predictor of drinking and marijuana use for European-American youth than for youth of other backgrounds; and (4) a stronger predictor of academic adjustment for younger adolescents than older adolescents. The latter prediction is based on the notion that the social integration and network ties provided by participation in extracurricular activities may be particularly beneficial for students who are moving to a new school environment and may buffer them from the decline in academic adjustment normally associated with such a transition (Simmons & Blyth, 1987). Greater exposure to older peers through activity participation, however, may offset this advantage with regard to drinking and marijuana use (Simmons & Blyth, 1987). No specific hypotheses were developed about the differential association extracurricular activities and adjustment as a function of gender.

Question 4: Variation as a Function of Activity Type

Is participation in sports more beneficial than participation in other types of extracurricular activities? Adolescents are more likely to participate in sports than in any other type of school-based extracurricular activity. Sports may be particularly beneficial for adolescents because they "represent physical and mental challenge, and provide an identity based on a sense of

competence and/or identification with a social group" (Shaw, Kleiber, & Caldwell, 1995, p. 247). Sports-related activities are (a) explicitly goal directed, (b) driven by competition, and (c) place adolescents in high status peer groups, all of which may promote greater well-being in adolescents than participation in activities that provide less status (Cusick, 1973; Morgan & Alwin, 1980). On the other hand, participation in sports has been associated with greater use of alcohol, although lower use of other drugs (Shaw et al., 1995; Swisher & Hu, 1983). In a longitudinal study of middle to working class adolescents, Larson (1994) found that participation in arts and hobbies, as well as participation in youth organizations (e.g., student council, band, church groups), was associated with reduced levels of delinquency, whereas participation in athletic activities was not. Thus we hypothesized that adolescents who participate in sports will have higher rates of alcohol and marijuana use than non-participants, while those who participate in other forms of extracurricular activities will be less involved in substance use. We predicted participation in both sports and non-sport activities would be associated with more positive academic adjustment.

Question 5: Peers and Extracurricular Activity Participation

One potential mediator of the observed relationship between extracurricular activity participation and adolescent outcomes is change in social network composition. Some researchers have hypothesized that one process underlying the association of extracurricular activity participation with positive adjustment is contact with peers who are more positively oriented toward school and less involved in deviance (e.g., Brown & Theobald, 1998; Eccles & Barber, 1999; Mahoney & Stattin, 2000). This study investigated two characteristics of adolescent social networks as potential mediators of the association between participation and adolescent outcomes: the extracurricular activity participation rates and the adjustment of the adolescents' close friends. If peer participation rates mediated the association between individual participation and adjustment, it would suggest that the underlying process is one of a change in social networks. An observed mediational effect of peer characteristics between individual participation and outcomes would be consistent with both the socialization hypothesis as well as with potential selection effects.

Methods

Sample

This study is a secondary data analysis of a larger survey study of the contribution of non-school factors to academic performance, psychosocial development, and problem behavior (for a description of the larger goals and results of the project, see Steinberg, Darling, & Fletcher, 1995). The larger study was carried out in nine high schools in California and Wisconsin from 1987-1991. Questionnaires focused on family and peer relationships,

crowd membership, extracurricular activities, and neighborhood residence. Because of limitations of the variables available in the original data, these analyses rely on data from the six high schools in California that were collected during the 1987-1988 and 1989-1990 school years (hereafter referred to as Year 1 and Year 2, respectively). Participating schools were selected to include youth from a range of socioeconomic backgrounds (working, middle, and upper class), community types (rural, suburban, urban), and ethnic and racial backgrounds. The proportion of parents who had graduated from college ranged from 18% to 64% across the schools. European-American students were the largest racial/ethnic group in all schools, ranging from 42% to 67% of the population at each school. Asian-American students were next most frequent, ranging from 10% to 40% of school populations. Hispanic-American students ranged from 8% to 29% of schools' populations. African-American youth made up between 2% and 12% of the populations of the schools in this study. Youth of Middle Eastern and Native American backgrounds made up less than 1% of the population at each the six schools and were eliminated from these analyses.

To allow for comparisons between the cross-sectional and longitudinal models, all cross-sectional analyses are performed using the Year 2 data and all longitudinal analyses using Year 1 and Year 2. Four thousand two hundred and sixty-four students participated in the cross-sectional component of this study (Year 2), provided complete data on the variables of interest in this investigation, and were used in these analyses. Two thousand four hundred and sixty-two participated in both Year 1 and Year 2 and were included in the longitudinal analyses. In addition to normal attrition, this difference includes the elimination of all students who were freshmen at Year 2, and thus were not in the study at Year 1. A description of the demographic characteristics of the cross-sectional and longitudinal sample is provided in Table 1. Demographic characteristics of the two samples are markedly similar, save for the elimination of students who were freshmen at Year 2 from longitudinal analyses.

Procedure

Identical procedures were used to gather data each year of the study. All students in participating schools were invited to complete a self-report questionnaire that focused on school-related behaviors (e.g., academic achievement, engagement in classes, extracurricular participation) but also included measures of family relationships and parenting behaviors, peer relationships, deviance, and psychological adjustment. Questionnaires were administered in English. Because of its length, the questionnaire was divided into two sections administered on separate days. Active consent was obtained from the adolescents and passive consent obtained from the parents. Approximately 4% of students in attendance on days of questionnaire administration chose not to participate in the study. Approximately 15% of students were absent on each day of questionnaire administration. A full description

TABLE 1
Demographic Characteristics of the Sample for the Cross-Sectional (Year 2 only) and Longitudinal Analyses (Year 1 and Year 2)

	Year 2 Cross-sectional		Longitudinal (Year 1 and Year 2)	
Category	Percent	(N)	Percent	(N)
Boys	47.9	(2044)	48.0	(1182)
Girls	52.1	(2220)	52.0	(1280)
Freshmen	27.5	(1172)	—	
Sophomores	26.2	(1116)	37.7	(928)
Juniors	24.6	(1050)	33.9	(834)
Seniors	21.7	(926)	28.4	(700)
African-American	4.6	(197)	4.4	(108)
Asian-American	21.3	(908)	21.2	(521)
European-American	60.5	(2578)	61.3	(1510)
Hispanic American	13.6	(581)	13.1	(323)
Less than high school	4.8	(203)	4.6	(113)
High school graduate	6.4	(275)	6.2	(153)
Some college	45.4	(1935)	46.6	(1147)
College graduate	43.4	(1851)	42.6	(1049)

of the sample and procedure is available in Steinberg, Lamborn, Dornbusch, and Darling (1992).

It is important to note that the study is longitudinal in the sense that researchers returned to the same school for three consecutive years and, because students had the same id number each year, this research design allowed tracking of individual students over time. However, individual adolescents were only followed during the time that they were enrolled in the target school and were not tracked if they left the target schools because of moves, dropout, or graduation.

Measures

Extracurricular activity participation. Extracurricular activity participation was measured based on student reports of activity participation at school during the current school year (data were collected in the late Spring). In Year 1, students were asked to check off which of twenty types of extracurricular activities they had participated in (e.g., baseball, band, school play, student government, interest clubs) and asked to name the single most important school based extracurricular activity they had participated in during the current school year. Students who checked off at least one extracurricular

activity or who named a single most important extracurricular activity were classified as participants. Those who neither checked off nor named an activity were classified as non-participants. In Year 2, students were asked how many hours they typically spend on school-sponsored extracurricular activities and which activity was the most important to them. Students were classified as participants either if they indicated spending time on school-sponsored extracurricular activities or if they named an activity. Students who did not indicate spending any time on activities and did not name an activity were classified as non-participants.

In order to examine the effects of these measurement differences, we calculated participation rates for all students who participated in each year of the original study (thus eliminating differences due to lack of freshmen in the longitudinal study, selective attrition, and other factors). In this full sample, 66% of students were classified as having participated in an extracurricular activity in Year 1 and 58% were classified as participants in Year 2. Although it is possible that this difference is due to a true change in participation, it is more likely that the listing of specific activities in Year 1 prompted reporting of less salient activities. Because the focus year of the study is Year 2, and it is possible that the way participation was measured resulted in an under reporting of actual participation, the results of these analyses may be somewhat conservative in their estimates of the differences between participants and non-participants. The nature of the data precludes constructing measures of more differentiated aspects of activity involvement, such as emotional commitment.

The proportion of students in each school reporting that they participated in extracurricular activities ranged from 45% to 63%. This did not vary systematically with the demographic character of the school, however, the two schools with the lowest participation rates (45% and 47%, respectively) also had the highest proportion of Hispanic-American students (27% and 22%, respectively).

Activity type. For descriptive purposes, the most important activities named were classified into four categories: sports (varsity and non-varsity team and individual sports, including cheerleaders and pom-pom squads), performing groups (e.g., band, choir, school play), leadership groups (e.g., student government, service club, prom committee), and interest clubs (e.g., debate, student publications). These four categories were then coded into sports and non-sport. Five percent of activities had originally been coded as "other" and could not be further categorized.

Grade, gender, parent education, and ethnicity. Adolescents self-reported on grade (freshman through senior), gender (male/female), parents' education, and racial/ethnic background. To assess parent education, adolescents were asked to report on the highest level of education each of their parents and stepparents had completed in eight categories ("some grade school" to "professional or graduate degree"). This information was recoded into four categories: (1) did not complete high school, (2) high school grad-

uate, (3) some college or training beyond high school, and (4) college degree. A mean was taken of the education reported of the parents with whom the adolescent was living and classified into the same four categories.

Adolescents were asked to "Select one ethnic background that bests describes you" from 18 listed racial and ethnic groups. Adolescents were classified as African-American if they self-identified as "Black, African, Afro-American." They were classified as European-American if they self-identified as "White (Non-Hispanic), Anglo, Caucasian, European." They were classified as Asian-American if they self-identified as any of the following: Chinese, Filipino, Japanese, Korean, Vietnamese, Other South East Asian, South Asian, or Pacific Islander. They were classified as Hispanic-American if they self-identified as any of the following: Mexican, Mexican-American, Chicano, Central American, Puerto Rican, Cuban, Other Caribbean, or South American. Although there are important nuances in the difference between use of the terms "race" and "ethnicity", these data do not allow for us to make these distinctions. We followed the conventions advocated by federal guidelines (e.g., National Center for Chronic Disease Prevention and Health Promotion, 2002) and used the term "ethnicity" to describe these classifications because it reflects (a) the racially diverse character of the Hispanic-American classification and (b) the fact that classifications were based on self-identification.

Alcohol and marijuana use. Adolescents were asked to report how often they had used alcohol and how often they had smoked marijuana since the beginning of the school year. The response format was a four point scale from 1 = never to 4 = often. Mean alcohol use was 1.7 (sd = 1.0) and mean marijuana use was 1.4 (sd = .8).

Academic adjustment. Three measures were used to assess academic adjustment. Students' self-reports of last term grades in math, English, social studies, and science on a conventional four-point scale were averaged to create a measure grades (mean = 3.0, sd = .8). Previous work indicates that self-reported grades and actual grades taken from official school records are highly correlated (r = .80, Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987). Adolescents' attitudes toward school were measured using a six-item scale (Steinberg et al., 1992) in which students reported on their value and commitment to school on a 4-point scale from 1 (strongly agree) to 4 (strongly disagree); sample item: "I feel satisfied with school because I'm learning a lot." (α = .69). Responses were recoded and averaged, with higher scores reflecting more positive school orientation (mean = 2.5, sd = .5). Academic aspirations were measured by asking adolescents "Considering your situation, what is the highest level that you really expect to reach in school?" Adolescents were offered six choices coded from 1 ("leave school as soon as possible") to 6 ("finish college and take further training (medical, law, graduate school, etc."). Mean level of academic aspiration was 5.1 (sd = 1.1).

Adjustment and extracurricular activity participation of friends. As part of the questionnaire, adolescents were asked to "print the first and last names of your five closest friends in the school (the students you hang around with

the most)" and reminded that their answers were "absolutely confidential." Senior coders took the names provided and linked names to the id numbers used in the study. Because approximately 85% of the students in each school participated in the study, this technique allowed us to link information provided by each adolescent to information provided by most of the friends that they named. Measures of friend adjustment and friend activity participation are thus not self-report, but calculated from data provided by the friends themselves. Note that with this technique, all data used to calculate these measures were provided by individuals who actively consented to participate in the study and reported only about themselves. Friend activity participation in extracurricular activities was measured by counting the number of named peers who reported participating in at least one extracurricular activity. Five aspects of friend adjustment were measured: drinking, marijuana use, grades, attitude toward school, and academic aspirations, using the same methods as was used to measure adjustment for the target adolescent. A mean score of friend self-reports was calculated for each aspect of adjustment.

Results

Preliminary Descriptive Analyses

Preliminary descriptive analyses were performed examining the types of extracurricular activities students named as most important. In order of frequency, the most common activities listed by students included in the cross-sectional sample were: baseball and basketball (7% each), band and chorus (combined), swim team, soccer, and football (6% each), track and tennis (5% each), school play, cheerleading, student government, wrestling, and pom-pom squad (3% each).

Because previous research has documented marked differences in extracurricular activity participation as a function of demographic characteristics, the proportion of adolescents who reported participating in four types of extracurricular activities or in no activities was calculated by gender, grade in school (freshman through senior), parents' education, and ethnicity. Results are reported in Table 2. Patterns of participation covaried with all demographic predictors. Overall, boys were slightly more likely to participate in extracurricular activities than girls (gender × participation $\chi^2 = 5.1$, df = 1, $p = .02$). Among those who participated, boys were more likely than girls to name a sport as their most important activity and less likely to name other activities (gender × activity type $\chi^2 = 48.7$, df = 3, $p \leq .000$). There was no difference in extracurricular activity participation by grade (grade × participation $\chi^2 = 5.6$, df = 3, $p > .05$). However, younger students who participated were more likely than older students to name a sport as their most important activity, while seniors were twice as likely as freshmen to name a club (grade × activity type $\chi^2 = 41.4$, df = 9, $p \leq .000$). Adolescents whose parents had less education were markedly less likely to participate than their peers from more highly educated families (parents education × participation $\chi^2 = 119.0$, df = 3, $p \leq .000$). Participating adolescents whose parents were less educated were less likely to name a sport as most important and more

TABLE 2
Percentage of Students Participating in Four Categories of Extracurricular Activities at Year 2 by Gender, Ethnicity, Grade in School, and Parents' Education

Category (N)	None	Sports	Performing Groups	Leadership Groups	Clubs
Boys (1860)	52.4	36.6	4.4	1.3	5.4
Girls (2095)	54.1	29.3	5.1	3.8	7.7
Freshmen (1104)	54.4	34.9	3.8	2.3	4.6
Sophomores (1048)	51.5	36.0	4.4	2.1	6.0
Juniors (961)	51.4	32.8	5.2	3.4	7.2
Seniors (842)	56.2	25.7	5.9	3.0	9.3
African-American (178)	56.7	32.0	2.2	1.1	7.9
Asian-American (831)	54.9	27.6	2.6	3.9	11.1
European-American (2420)	49.2	36.6	6.2	2.6	5.3
Hispanic American (526)	68.4	23.2	2.1	1.3	4.9
<High School (187)	77.5	14.4	1.1	0.0	7.0
High School (256)	66.8	21.5	2.7	3.1	5.9
Some College (1783)	57.9	29.9	4.2	1.6	6.4
College or Higher (1729)	44.0	39.2	6.1	4.0	6.8

likely to name a club compared to the adolescents of college-educated parents (parent education × activity type $\chi^2 = 28.9$, df = 9, $p = .001$). Extracurricular activity participation also varied as a function of ethnicity (ethnicity × participation $\chi^2 = 41.8$, df = 3, $p \leq .000$), with Hispanic-American youth less likely to participate in extracurricular activities than their peers. Among students who participated in extracurricular activities, Asian-American students were relatively less likely to name a sport as most important and more likely to name a club. European-American students were twice as likely to name music groups as students of other ethnic backgrounds (ethnicity × activity type $\chi^2 = 68.0$, df = 9, $p \leq .000$). Overall, demographic background characteristics predicted both whether adolescents participated in extracurricular activities and the type of activities they participated in if they chose to do so.

Question 1: Is Participation in School-Based Extracurricular Activities Associated with Indicators of Adolescent Adjustment?

Mean scores of five aspects of adolescent adjustment were calculated for adolescents who reported participating and not participating in extracurricular activities during Year 2 and differences were tested using a series of ANOVAs (see the top of Table 3). Adolescents who participated in school-based extracurricular activities reported lower levels of marijuana use, higher grades and aspirations, and more positive academic attitudes (p's $\leq .000$;

TABLE 3
Mean Year 2 Adjustment Scores of Participants and Non-participants: Unadjusted Means and Means Controlling for Demographic Characteristics[1]

	N	Drinking	Marijuana	Grades	Attitude	Aspirations
			Unadjusted Means			
Non-participants	2076	1.71 (.02)	1.47 (.02)	2.79 (.02)	2.74 (.01)	4.81 (.02)
Participants	2188	1.74 (.02)	1.35 (.02)	3.14 (.02)	2.86 (.01)	5.33 (.02)
Eta		.01	.07***	.23***	.12***	.24***
			Adjusted Means Controlling for Sex, Ethnicity, Gender, and Parent Education			
Non-participants	2076	1.56 (.03)	1.36 (.03)	2.66 (.02)	2.76 (.02)	4.67 (.03)
Participants	2188	1.55 (.03)	1.22 (.03)	2.97 (.02)	2.88 (.02)	5.11 (.03)
Partial Eta		0.00	0.08***	0.21***	0.12***	0.21***

***$p \leq .000$
[1]Numbers in parentheses are standard deviations.

df's = 1, 4262; F's = 19.7, 239.8, 270.1, and 65.7, respectively). There was no association between participation and drinking ($F = .8$, $p = .36$).

Question 2: Can the Association between Participation in Extracurricular Activities and Adolescent Outcomes Be Documented Controlling for Demographic Characteristics and Prior Adjustment?

Partial mean scores of five aspects of Year 2 adolescent adjustment were calculated for adolescents who reported participating and not participating in extracurricular activities controlling for the demographic characteristics of the participants (grade, gender, ethnicity, and parent education). Differences in adjusted means as a function of participation were tested using univariate general linear model (GLM) analyses. Results are reported in bottom section of Table 3. Extracurricular participation continued to predict lower marijuana use, higher grades and academic aspirations, and more positive attitudes toward school after demographic characteristics were controlled ($p < .000$). There was no association between extracurricular activity participation and drinking

Two different approaches were used to assess whether the association between extracurricular activity participation and measures of adolescent adjustment could be attributed to selective participation of better adjusted students. Both approaches used the longitudinal sample of adolescents who had provided data during both Year 1 and Year 2 of the study. First, a series of GLM analyses was performed in which indicators of Year 2 adolescent adjustment were predicted from Year 2 extracurricular activity participation, controlling for demographic characteristics and Year 1 adjustment. For ex-

ample, Year 2 alcohol use was predicted from Year 2 participation, demographic characteristics, and Year 1 alcohol use; Year 2 grades were predicted from Year 2 participation, demographic characteristics, and Year 1 grades, etc. Because these analyses control for prior adjustment, the *F*-test associated with extracurricular activity participation effectively tests whether change in adjustment from Year 1 to Year 2 varies as a function whether or not youths have participated in an extracurricular activity. Results are reported in Table 4. In all cases, prior adjustment predicted current adjustment, controlling for demographic characteristics. Although the analyses presented in Table 3 had revealed that Year 2 alcohol use was not predicted by ECA participation, change in alcohol use (i.e., Year 2 alcohol use controlling for Year 1 alcohol use) was predicted by ECA participation, with participants reporting higher change in alcohol use than non-participants ($F = 6.1$, $p = .01$). The association of extracurricular activities and marijuana use dropped below significance once prior marijuana use was controlled ($F = 0.8$, $p = .36$). Students who participated in extracurricular activities also reported higher grades, more positive academic attitudes, and higher academic aspirations than those who did not (F's = 17.0, 19.2, 38.7, respectively, $p \leq .000$) after Year 1 adjustment and demographic characteristics were controlled.

In the second set of analyses, mean adjustment scores were calculated for adolescents who did not report participating in an ECA in either Year 1 or Year 2, those who reported participating for Year 1 only, Year 2 only, and for both Years 1 and 2. These analyses provide different information from

TABLE 4
Univariate General Linear Model Predicting Year 2 Adjustment from Extracurricular Activity Participation Controlling for Year 1 Adjustment and Demographic Characteristics. Parameters Reported are Partial Etas

	df	Drinking	Marijuana	Grades	Attitude	Aspirations
Model	12	0.65	0.61	.73	0.53	0.66
Intercept	1	0.12***	0.13***	0.19***	0.39***	0.33***
Gender	1	0.06**	0.04	0.05*	0.06**	0.06***
Ethnicity	3	0.10***	0.09***	0.09***	0.06*	0.07**
Grade	2	0.07**	0.06*	0.07***	0.04	0.04
Parent Education	3	0.03	0.05	0.07**	0.06*	0.20***
Year 1 Adjustment	1	0.61***	0.58***	0.67***	0.50***	0.57***
Participation	1	0.05*	0.02	0.08***	0.09***	0.12***
Error df		2241	2223	2383	2416	2454
R^2		.42	.37	.53	.28	.44
Marginal Means Controlling for Demographic Characteristics and Time 1 Adjustment						
Non-Participants (N = 1143)		1.90 (.14)	1.70 (.12)	2.69 (.07)	2.81 (.06)	4.69 (.10)
Participants (N = 1324)		1.98 (.14)	1.67 (.13)	2.78 (.07)	2.89 (.06)	4.90 (.11)

*$p \leq .05$, **$\leq .01$, ***$p \leq .001$.

those presented in Table 4, because they examine adjustment as a function of different patterns of ECA participation over a two year period, rather than solely concurrent participation. In the first step of these analyses, partial means of adjustment measures were calculated for adolescents evincing each of the four participation patterns controlling for demographic characteristics. Group differences were tested using univariate GLM analyses. A series of planned contrasts was performed to test whether the adjustment of each category of participants differed from non-participants. Results are reported at the top in Table 5. No difference was found in alcohol use as a function of participation status, once demographic characteristics were controlled ($F = 1.1$, $p = .35$). Omnibus tests revealed that marijuana use, grades, attitude toward school, and academic aspirations each differed as a function of ECA participation pattern. Adolescents who reported participating in ECAs for both Years 1 and 2 reported lower marijuana use than their non-participating peers after demographic characteristics were controlled ($p = .002$). Adolescents who reported participating for only one year did not differ significantly from non-participants. Adolescents who participated in ECAs during Year 1 only or from both Year 1 and Year 2 reported higher grades than non-participants ($p = .000$), although those who participated for only Year 2 did not differ significantly from non-participants ($p = .06$). Adolescents who

TABLE 5
Marginal Means of Year 2 Adolescent Well-being as a Function of Years of Participation[1]

Participation	Drinking	Marijuana	Grades	Attitude	Aspirations
Model 1: Year 2 marginal means controlling for demographic characteristics					
None	1.64 (.15)[a]	1.60 (.13)[a]	2.48 (.10)[a]	2.79 (.07)[a]	4.61 (.14)[a]
Year 1	1.59 (.15)[a]	1.51 (.13)[a]	2.67 (.10)[b]	2.86 (.07)[b]	4.97 (.15)[b]
Year 2	1.70 (.16)[a]	1.53 (.14)[a]	2.60 (.11)[a]	2.90 (.08)[b]	4.95 (.16)[b]
Year 1 & 2	1.68 (.15)[a]	1.47 (.13)[b]	2.90 (.10)[b]	2.94 (.07)[b]	5.33 (.15)[b]
Marginal Eta	.04	.06*	.025***	.13***	.29***
Model 2: Year 2 marginal means controlling for demographic characteristics and Year 1 adjustment					
None	2.41 (.14)[a]	1.69 (.12)[a]	2.76 (.08)[a]	2.81 (.06)[a]	4.88 (.12)[a]
Year 1	2.42 (.15)[a]	1.71 (.13)[a]	2.77 (.08)[a]	2.83 (.06)[a]	5.00 (.12)[b]
Year 2	2.50 (.16)[a]	1.64 (.14)[a]	2.74 (.09)[a]	2.87 (.07)[a]	4.97 (.13)[a]
Year 1 & 2	2.49 (.14)[b]	1.68 (.13)[a]	2.86 (.08)[b]	2.90 (.06)[b]	5.17 (.12)[b]
Marginal Eta	0.05	.02	.09**	.09**	.15*

[1]Numbers in parentheses are standard deviations.
*$p \leq .05$ **$p \leq .01$ ***$p \leq .000$
[a]Identical subscripts within columns indicate means of participants are not significantly different from non-participants at the .05 level.

participated in ECAs for at least one year reported more positive attitudes toward school and higher academic aspirations than non-participants, controlling for demographic characteristics ($p \leq .05$). For each of the four indicators of adjustment that was significantly related to pattern of ECA participation—marijuana use, grades, attitude toward school, and academic aspirations—adolescents who participated for both Year 1 and Year 2 evinced the most positive adjustment.

In the second step of the analyses, Year 2 adolescent adjustment was predicted from pattern of ECA participation controlling for both demographic characteristics and Year 1 adjustment. For example, Year 2 alcohol use was predicted from pattern of ECA participation during Year 1 and Year 2 controlling for Year 1 alcohol use, Year 2 grade in school, gender, ethnicity, and parents' education. Functionally, these analyses test the hypothesis that change in adjustment is predicted from ECA participation pattern controlling for demographic characteristics. Once prior adjustment and demographic characteristics are controlled, neither drinking nor marijuana use are associated with ECA participation ($p > .10$). Participation in ECAs did, however, predict higher grades and academic aspirations and more a positive attitude toward school ($p \leq .05$) controlling for prior adjustment and demographic characteristics. In the case of both grades and attitude toward school, youth who reported participating in ECAs during both Years 1 and Year 2 differed from non-participants ($p \leq .01$), but those who participated for only one year did not. Those who participated in ECAs during both Year 1 and Year 2 and those who participated only in Year 1 reported higher academic aspirations than non-participants, but those who participated solely in Year 2 did not.

Question 3: Is Participation More Beneficial for Some Demographic Groups than for Others and for Those Who Are at Relatively Higher Risk for Difficulties in Adjustment?

A series of univariate GLM analyses was performed predicting Year 2 adolescent adjustment from Year 2 ECA participation, gender, ethnicity, parents' education, grade in school, and the interactions between ECA participation and gender, ethnicity, parents' education, and year in school. All terms were entered simultaneously. Contrary to our hypothesis, the association between ECA participation and adolescent adjustment did not differ by demographic background. Only one of 20 interactions tested was statistically significant at the .05 level, which does not exceed that which would be expected by chance.

Question 4: Is Participation in Sports Associated with the Same Benefits as Participation in Non-Sport Activities?

Two sets of analyses were performed to assess whether the association between well-being and participation was the same for sports and non-sport extracurricular activities. In these analyses, adolescents were categorized as

non-participants, sports participants or non-sport participants based on the activity they said was most important to them. In the first set of analyses, univariate GLM analyses were performed to test the association of the three categories of participation (no ECA, sport ECA, non-sport ECA) with Year 2 well-being, controlling for demographic characteristics. Planned contrasts were performed comparing marginal means of non-participants with sports participants and with non-sport participants and comparing marginal means of sports and non-sport ECA participants. Results are reported at the top section of Table 6. ECA participation was associated with all measures of adjustment after demographic characteristics were controlled ($p \leq .000$). Adolescents who participated in sports reported higher alcohol use than both non-participants and those who participated in non-sport ECAs ($p \leq .000$). There was no difference in alcohol use reported by non-participants and those who participated in non-sport ECAs ($p = .13$). Reported marijuana use was highest among non-participants and lowest among youth who participated in non-sport ECAs, with youth involved in sports reporting an intermediate amount of marijuana use. A similar pattern appeared for grades, attitude toward school, and academic aspirations, with poorest adjustment reported by non-participants and most positive adjustment reported by participants in non-sport ECAs.

In order to further investigate the hypothesis that differences between participants in sports and non-sport ECAs derive from selective participation, a second set of models was performed using the longitudinal dataset in which

TABLE 6
Marginal Means of Year 2 Adolescent Adjustment as a Function of Non-participation, Sports Participation, and Participation in Non-sport Extracurricular Activities[1]

	df	Drinking	Marijuana	Grades	Attitude	Aspirations
Model 1: Year 2 Marginal Means Controlling for Demographic Characteristics						
None	2108	1.57 (.03)[a]	1.36 (.03)[a]	2.67 (.02)[a]	2.77 (.02)[a]	4.69 (.03)[a]
Non-Sport	554	1.41 (.05)[a]	1.14 (.04)[b]	3.02 (.04)[b]	2.94 (.02)[b]	5.17 (.05)[b]
Sports	1293	1.62 (.04)[b]	1.24 (.03)[c]	3.00 (.03)[c]	2.89 (.02)[c]	5.17 (.04)[c]
Marginal Eta		.07***	.10***	.24***	.15***	.24***
Model 2: Year 2 Marginal Means Controlling for Demographic Characteristics and Year 1 Adjustment						
None	1047	1.90 (.14)[a]	1.69 (.12)[a]	2.76 (.08)[a]	2.82 (.06)[a]	4.92 (.12)[a]
Non-Sport	334	1.88 (.15)[ab]	1.63 (.12)[a]	2.88 (.08)[b]	2.91 (.06)[b]	5.14 (.12)[b]
Sports	722	2.02 (.14)[b]	1.68 (.13)[a]	2.87 (.08)[c]	2.91 (.06)[c]	5.16 (.12)[c]
Marginal Eta		.08**	.03	.11***	.11***	.14***

*$p \leq .01$ **$p \leq .01$ ***$p \leq .000$.
[1]Numbers in parentheses are standard deviations.

Year 2 adjustment was predicted from Year 2 ECA participation (non-participant, sports participant, non-sport participant) controlling for demographic background characteristics and Year 1 adjustment. Results are reported in the bottom of Table 6. Results were strikingly similar to the cross-sectional analyses, although differences between the groups were reduced. Alcohol use, grades, attitude toward school, and academic aspirations were each associated with ECA participation after controlling for demographic characteristics and Year 1 adjustment ($p \leq .01$). The association between marijuana use and participation dropped below significance ($p = .37$).

Question 5: Is the Association of Extracurricular Activity Participation with Adjustment Mediated through Characteristics of the Adolescent Peer Group?

To test the hypothesis that the association of ECA participation and adolescent adjustment is mediated through the adolescents' peer group, a series of univariate GLM models was calculated in which Year 2 adjustment was predicted from Year 2 participation, peer adjustment and peer ECA participation. For example Year 2 drinking was predicted from Year 2 participation, peer reports of drinking and ECA participation, and demographic characteristics. Results of the are reported in Table 7. In these analyses, the coefficient for ECA participation can be compared with those reported at the top of Table 3, which Year 2 adjust was predicted from Year 2 and demographic characteristics but peer participation and adjustment were not en-

TABLE 7

Univariate General Linear Model Predicting Year 2 Adjustment from Extracurricular Activity Participation Controlling for Demographic Characteristics and Peer Adjustment and Extracurricular Activity Participation. Parameters Reported are Partial Etas

	df	Drinking	Marijuana	Grades	Attitude	Aspirations
Corrected Model	13	.51	.45	.49	.26	.45
Intercept	1	.30	.30	.46	.51	.48
Gender	1	.02	.02	.10***	.02	.06***
Ethnicity	3	.14***	.10***	.18***	.09***	.10***
Grade	3	.14***	.10***	.05	.10***	.08***
Parent Education	3	.05	.04	.11***	.02	.20***
Participation	1	.01	.05**	.14***	.08***	.16***
Peer Adjustment	1	.41***	.39***	.30***	.16***	.25***
Peer Participation	1	.02	.03	.04*	.05**	.03
Error df		2992	2991	2976	3001	2984
Total df		3006	3005	2990	3015	2998
Model R^2		.26	.20	.24	.07	.21

*$p \leq .05$, **$\leq .01$, ***$p \leq .001$.

tered into the model. As expected, in all cases, peer adjustment was positively associated with adolescent adjustment ($p \leq .01$). There was no evidence to support the hypothesis that peer group characteristics mediated the association between ECA participation and adolescent adjustment. ECA participation continued to predict marijuana use, grades, attitude toward school, and academic aspirations after peer adjustment and participation were controlled. (Alcohol use was not associated with ECA participation prior to controlling for peer characteristics.) However, ECA participation by peers was associated with better grades and a more positive attitude toward school, controlling for adolescents' own participation, peer adjustment, and demographic characteristics ($p \leq .05$).

Discussion

The goals of this paper were to extend our understanding of the association between extracurricular activity participation and adolescent adjustment by examining three major issues: the potential confounding of selective ECA participation by better adjusted students and measures of adjustment; the variability of the strength of the association between ECA participation and adjustment as a function of adolescent demographic characteristics and activity type; and the role of peers as mediators of the association between ECA participation and adjustment. Five specific questions were addressed: (1) Is participation in school-based extracurricular activities associated with indicators of adolescent adjustment? (2) Can the association between participation in extracurricular activities and adolescent outcomes be documented controlling for such selection factors as demographic characteristics and prior adjustment? (3) Is participation more beneficial for some demographic groups than for others and for those who are at relatively higher risk for difficulties in adjustment? (4) Is participation in sports associated with the same benefits as participation in non-sport activities? and (5) Is the association of extracurricular activity participation with adjustment mediated through characteristics of the adolescent peer group?

Although extracurricular activity participation varies across youth from different demographic backgrounds, these selection factors do not appear to explain the association of ECA participation and adolescent adjustment. Adolescents who participated in school based extracurricular activities showed small, but significant, differences in marijuana use, grades, attitudes toward school, and academic aspirations (but not alcohol use), controlling for demographic characteristics. Longitudinal analyses controlling for prior adjustment and demographic background characteristics concluded that adolescents who participated in extracurricular activities increased alcohol use faster than their peers and showed improved grades, attitude toward school, and academic aspirations. Change in marijuana use was not predicted by ECA participation. Taken together, these results suggest that the better academic adjustment evinced by students who participate in school-based extracurricular activities are not the spurious result of the selection of better ad-

justed students into extracurricular activities. Rather, they are consistent with the hypothesis that participation in school-based extracurricular activities leads to processes that bind students to the adult-oriented values of the school (e.g., good academic performance, high academic aspirations, and high academic aspirations). These results are consistent with past research on the academic benefits of participation for adolescents (e.g., Cooper et al., 1999; Davalos et al., 1999; Eccles & Barber, 1999; Jordan & Nettles, 1999; Mahoney & Cairns, 1997; Mahoney & Stattin, 2000; McNeal, 1995).

The processes leading to these differences are unclear. Prior researchers have suggested that differences in participants may result from changes in the peer networks (e.g., Brown & Theobald, 1998; Eccles & Barber, 1999; Mahoney & Stattin, 2000), however there is no evidence from these data to support that hypothesis. Three other classes of underlying processes immediately present themselves, although they cannot be tested with these data. First, it is possible that the activities themselves increase adolescents' commitment to school. Waterman (1984) and others have argued that identity formation is not, as suggested by Erikson (1950), developed through internal psychological processes. Rather, Waterman suggests that identity is discovered through participation in activities that allow one to recognize one's true self. If that is true, then participation in school-based extracurricular activities may facilitate identity discovery and thus make school more relevant to fulfilling the discovered identity. Second, it is possible that the cognitive and social skills required by extracurricular activity participation (e.g., to set and achieve goals, compete fairly, and recover from defeat (Carnegie Corporation of New York, 1992)) carry over into the classroom in positive ways, thus affecting academic performance directly. Third, extracurricular activities provide one of the few contexts that provide youths with the opportunity to get to know unrelated adults outside the classroom (Darling, Hamilton, & Niego, 1994; Darling et al., 2003). In addition to providing increased exposure to adult-oriented values (Hirschi, 1969), such exposure may also increase students' feeling of psychological commitment to school and reduce feelings of anonymity (Newmann, 1998), which has been shown to be associated with positive academic outcomes. Because limitations in these data do not allow for process-oriented analyses, much more research is needed to understand why participation in school-based activities is associated with positive academic outcomes.

The association of alcohol and marijuana use with ECA participation appears to be less straightforward. Lower marijuana use is associated with ECA participation in the cross-sectional analyses, but this difference disappears once prior marijuana use is controlled. This suggests that the association between marijuana use and ECA participation may be due to the decreased likelihood of marijuana users to participate in school-based ECAs. Alcohol use is not associated with ECA participation after demographic characteristics are controlled, but change in alcohol use (e.g., Year 2 alcohol use controlling for Year 1 alcohol use) is. These findings may result from both selection and influence processes operating in the context of extracurricular

activities. Consistent with prior research, comparisons of sports and non-sport participants suggest that athletics may provide a more supportive context for drinking than others types of ECAs (Eccles & Barber, 1999).

Although patterns of ECA participation were consistently associated with adolescent academic adjustment, the differences between participants and non-participants were relatively small. Contrary to our hypothesis, there was no evidence that demographic variability in the association of ECA participation with adjustment contributed to these small effect sizes. Similarly, although the most positive outcomes were associated with adolescents who participated in non-sport ECAs, differences between sports participants and participants in other ECAs were small.

This research is limited in several respects. Most important, it provides no information about differences in adolescents' experiences in different extracurricular activities. Some activities, such as sports or theater, regularly require long hours of time committed to practice, sharpening of skills, and coordination of self with others. Other activities, such as honor societies and some clubs may require little time or commitment from students. Variation in the experience of adolescents across different activities would provide a much richer and more detailed portrait of what types of activities may most facilitate positive development. Second, these data are limited in that extracurricular activities vary in their timing across the school year, but outcomes are limited to measurement at a single point in time. Thus some students may participate in a Fall sport, which would then be used to predict outcomes the following Spring, while other activities and outcomes are measured contemporaneously. Both of these first two issues add variability and error to the analyses that may suppress effect sizes. Unfortunately, these questions cannot be addressed with the present data. Finally, this study is limited in that all information, save for peer characteristics, comes from a single source: the adolescent themselves. It is possible that the relationships observed may thus result from perceptual or reporting differences of participants and non-participants. Although controlling for prior characteristics in the longitudinal analyses diminishes common source variance, it is likely that additional bias remains.

Taken together, these results, as well as the extant literature, suggest that the relationship between extracurricular activity participation and adolescent adjustment is consistent, but small. Given the compelling statements about the potential benefits of participation made by proponents of extracurricular activities (e.g., Brown & Theobald, 1998; Carnegie Corporation of New York, 1992), one might reasonably ask "why?" First, extracurricular activities, particularly school-based extracurricular activities, make up only a small part of the broader context of leisure that contributes to adolescent development (Cooper et al., 1999), and taking more than one context into account may significantly increase predictive power. Second, as is implicit in past work (e.g., Eccles & Barber, 1999; Mahoney, 2000; Mahoney & Stattin, 2000), the impact of extracurricular activities on development may vary markedly depending upon characteristics of the person, the setting, and the

activity. Although we have provided some evidence that the benefits of participation do not vary as a function of demographic characteristics, the empirical models employed remain quite crude in comparison to the theoretical models from which they derive. More detailed analyses of adolescents' experiences in this setting are necessary if we are to develop a clear understanding of the characteristics of ECA experiences that are most beneficial—particularly in terms of facilitating bonding of students to school. This may be particularly important for those youth who are least likely to participate in ECAs: those from disadvantaged backgrounds.

References

Bronfenbrenner, U., & Morris, P. (1998). The ecology of developmental processes. In R. M. Lerner (Ed.), *Handbook of child psychology. Theoretical models of human development* (5 ed., Vol. 1, pp. 993-1028). New York: J. Wiley.

Brown, B. B., & Theobald, W. (1998). Learning contexts beyond the classroom: Extracurricular activities, community organizations, and peer groups. In K. Borman & B. Schneider (Eds.), *The adolescent years: Social influences and educational challenges: Ninety-seventh yearbook of the National Society for the Study of Education, Part I* (pp. 109-141). Chicago, IL: The National Society for the Study of Education.

Burnett, M. A. (2000). "One strike and you're out": An analysis of no pass/no play policies. *High School Journal, 84*(2), 1-6.

Butler, D. A., & Manning, M. L. (1998). *Addressing Gender Differences in Young Adolescents.* Olney, MD: Association for Childhood Education International.

Caldwell, L. L., & Darling, N. (1999). Leisure context, parental control, and resistance to peer pressure as predictors of adolescent partying and substance use: An ecological perspective. *Journal of Leisure Research, 31,* 57-77.

Carnegie Corporation of New York. (1992). *A matter of time: Risk and opportunity in the non-school hours.* New York: Author.

Cooley, V. E., Henriksen, L. W., Van Nelson, C., & Thompson, J. C. (1995). A study to determine the effect of extracurricular participation on student alcohol and drug use in secondary schools. *Journal of Alcohol & Drug Education, 40*(2), 71-87.

Cooper, H., Valentine, J. C., Nye, B., & Lindsay, J. J. (1999). Relationships between five after-school activities and academic achievement. *Journal of Educational Psychology, 91*(2), 369-378.

Cusick, P. (1973). *Inside High School.* New York: Holt, Rinehart & Winston.

Danish, S. J., & Gullotta, T. P. (Eds.). (2000). *Developing competent youth and strong communities through after-school programming.* Washington, DC: Child Welfare League of America, Inc.

Darling, N., Hamilton, S. F., & Niego, S. (1994). Adolescents' relations with adults outside the family. In R. Montemayor & G. R. Adams (Eds.), *Personal relationships during adolescence. Advances in adolescent development: An annual book series, Vol. 6.* (pp. 216-235). Thousand Oaks, CA, USA: Sage Publications, Inc.

Darling, N., Hamilton, S. F., & Shaver, K. H. (2003). Relationships outside the family: Unrelated adults. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell Handbook of Adolescence* (pp. 349-370). Oxford, England: Blackwell Publishing.

Davalos, D. B., Chavez, E. L., & Guardiola, R. J. (1999). The effects of extracurricular activity, ethnic identification, and perception of school on student dropout rates. *Hispanic Journal of Behavioral Sciences, 21*(1), 61-77.

Deasy, R. J. (2003). Don't Axe the Arts. *Principal, January/February,* 14-15.

Dewey, J. (1916). *Democracy and Education.* New York: The Macmillan Company.

Dornbusch, S. M., Ritter, P. L., Leiderman, P. H., Roberts, D. F., & Fraleigh, M. J. (1987). The relation of parenting style to adolescent school performance. *Child Development, 58*(5), 1244-1257.

Durbin, D. L., Darling, N., Steinberg, L., & Brown, B. B. (1993). Parenting style and peer group membership among European-American adolescents. *Journal of Research on Adolescence, 3*(1), 87-100.

Dworkin, J. B., Larson, R., & Hansen, D. (2003). Adolescents' accounts of growth experiences in youth activities. *Journal of Youth and Adolescence, 32*(1), 17-26.

Eccles, J. S., & Barber, B. L. (1999). Student council, volunteering, basketball, or marching band: What kind of extracurricular involvement matters? *Journal of Adolescent Research, 14*(1), 10-43.

Eccles, J. S., Lord, S., & Buchanan, C. M. (1996). School transitions in early adolescence: What are we doing to our young people? In J. A. Graber & J. Brooks-Gunn (Eds.), *Transitions through adolescence: Interpersonal domains and context* (pp. 251-284). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Erikson, E. H. (1950). *Childhood and Society.* New York: W.W. Norton & Co.

Hirschi, T. (1969). *Causes of Delinquency.* Los Angeles, CA: University of California Press.

Holland, A., & Andre, T. (1987). Participation in extracurricular activities in secondary school: What is known, what needs to be known? *Review of Educational Research, 57*(4), 437-466.

Hovet, G. A., & Vinton, D. (1993). Combining curricular and co-curricular components for a comprehensive leadership development program. *Journal of College Student Development, 34*(4), 307-308.

Jordan, W. J., & Nettles, S. M. (1999). How students invest their time outside of school: Effects on school-related outcomes. *Social Psychology of Education, 3*(4), 217-243.

Kezar, A., & Moriarty, D. (2000). Expanding our understanding of student leadership development: A study exploring gender and ethnic identity. *Journal of College Student Development, 41*(1), 55-69.

Khmelkov, V. T., & Hallinan, M. T. (1999). Organizational effects on race relations in schools. *Journal of Social Issues, 55*(4), 627-645.

Kleiber, D. A. (1999). *Leisure experiences and human development: A dialectical interpretation.* New York, NY, USA: Basicbooks, Inc.

Larson, R. (1994). Youth organizations, hobbies, and sports as developmental contexts. In R. K. Silbereisen & E. Tot (Eds.), *Adolescence in context: The interplay of family, school, peers, and work in adjustment* (pp. 46-65). New York: Spring-Verlag.

Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*(1), 170-183.

Mahoney, J. L. (2000). School extracurricular activity participation as a moderator in the development of antisocial patterns. *Child Development, 71*(2), 502-516.

Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school dropout? *Developmental Psychology, 33*(2), 241-253.

Mahoney, J. L., & Stattin, H. (2000). Leisure activities and adolescent antisocial behavior: The role of structure and social context. *Journal of Adolescence, 23,* 113-127.

McNeal, R. B., Jr. (1995). Extracurricular activities and high school dropouts. *Sociology of Education, 68*(1), 62-80.

McNeal, R. B., Jr. (1998). High school extracurricular activities: Closed structures and stratifying patterns of participation. *Journal of Educational Research, 91*(3), 183-191.

McNeal, R. B., Jr. (1999). Participation in high school extracurricular activities: Investigating school effects. *Social Science Quarterly, 80*(2), 291-309.

Morgan, D. L., & Alwin, D. F. (1980). When less Is more: School size and student social participation. *Social Psychology Quarterly, 43*(2), 241-252.

National Center for Chronic Disease Prevention and Health Promotion. (2002, August 16, 2002). *Methodological and Technical Notes: Race and Ethnicity Definitions.* Retrieved January 5, 2003, from http://www.cdc.gov/cvh/combinedatlas/racedef.htm

Newmann, F. M. (1998). How secondary schools contribute to academic success. In K. Borman & B. Schneider (Eds.), *The adolescent years: Social influences and educational challenges: Ninety-seventh yearbook of the National Society for the Study of Education, Part I.* (pp. 88-108). Chicago, IL, USA: The National Society for the Study of Education.

Rigsby, L., & McDill, E. (1975). Value orientations of high school students. In H. R. Staub (Ed.), *The sociology of education: A sourcebook* (3rd ed., pp. 53-74). Homewood, IL: Dorsey.

Rutter, M., Champion, L., Quinton, D., Maugham, B., & Pickles, A. (1995). Understanding individual differences in environmental-risk exposure. In P. Moen, G. H. Elder & K. Lüscher (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 61-96). Washington, DC: American Psychological Association.

Shann, M. H. (2001). Students' use of time outside of school: A case for after school programs for urban middle school youth. *Urban Review, 33*(4), 339-356.

Shaw, S. M., Kleiber, D. A., & Caldwell, L. L. (1995). Leisure and identity formation in male and female adolescents: A preliminary examination. *Journal of Leisure Research, 27*(3), 245-263.

Silbereisen, R. K., & Eyferth, K. (1986). Development as action in context. In R. K. Silbereisen, K. Eyferth & G. Rudinger (Eds.), *Development as action in context: Problem behavior and normal youth development* (pp. 3-16). Berlin: Springer-Verlag.

Simmons, R. G., & Blyth, D. A. (1987). *Moving into Adolescence.* Hawthorne, NY: Aldine de Gruyter.

Steinberg, L., Darling, N., & Fletcher, A. C. (1995). Authoritative parenting and adolescent adjustment: An ecological journey. In P. Moen, G. H. Elder & K. Lüscher (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 423-466). Washington, DC: American Psychological Association.

Steinberg, L., Lamborn, S. D., Dornbusch, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development, 63*(5), 1266-1281.

Swisher, J. D., & Hu, T. (1983). Alternatives to drug abuse: Some are and some are not. In T. J. Glynn, C. G. Leukefeld & J. P. Ludford (Eds.), *Preventing adolescent drug abuse: Intervention strategies* (pp. 141-152). Rockville, MD: National Institute of Drug Abuse.

Waterman, A. (1984). Identity formation: Discovery or creation? *Journal of Early Adolescence, 4,* 329-341.

Werner, E. E., & Smith, R. S. (1982/1989). *Vulnerable, but invincible : A longitudinal study of resilient children and youth.* New York: Adams, Bannister, Cox.

Wren, D. J. (1997). Adolescent females "voice" changes can signal difficulties for teachers and administrators. *Adolescence, 32*(126), 463-470.