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**Amy Florence Feldman**

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**The Dissertation Committee for Amy Florence Feldman certifies that this is the  
approved version of the following dissertation:**

**Links Between School-Based Extracurricular Activity Participation and  
Adolescent Development**

**Committee:**

---

**Jennifer Matjasko, Supervisor**

---

**Robert Crosnoe**

---

**Aletha Huston**

---

**Edward Anderson**

---

**Elizabeth Vandewater**

**Links Between School-Based Extracurricular  
Activity Participation and Adolescent Development**

by

**Amy Florence Feldman B.S.; M.A.**

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## **Dedication**

This dissertation is dedicated to my family, friends, &  
educators past and present who have  
believed in my abilities and supported my convictions.  
Your strength has carried me through.

In loving memory of my greatest fans, my grandfathers:  
Charles Porter Ellington, Sr., Ph.D. & Edwin Bernard Feldman

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# **Links Between School-Based Extracurricular Activity Participation and Adolescent Development**

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Amy Florence Feldman, Ph.D.  
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Supervisor: Jennifer Matjasko

Utilizing the *National Longitudinal Study of Adolescent Health*, three separate studies were conducting regarding the relationship of school-based extracurricular activity participation (EAP) and adolescent development. Chapter 1 examined the profiles of individual activity participants, determined whether profiles changed dependent upon activity grouping style, and identified portfolios of adolescent school-based EAP. The most common activities are basketball, baseball, track, and football. Non-participation is also common. Academic club participation is actually not as common. Non-participants are older, come from families with lower incomes, have lower grades, and are from larger schools having implications for educational and social policy in terms of availability of activities in schools and exclusion from participation. Generally, style of activity grouping did little in varying the overall descriptions of participants from each other and from the individual activity analysis. However, subtle details were affected by activity conceptualization and some of the unique patterns indicated in the individual analysis were better preserved by certain groupings. The most common participation portfolios are multiple activity types and sports only participation.

The four most common portfolios in the multiple activity type group were sports/performance, sports/academic, sports/academic/performance/school, and sports/school. Chapter 2 utilized individual, family, peer, and school contexts to differentiate school-based EAP and non-participation. Adolescents' GPA (individual), parental involvement (family), friend's GPA (peer), and school attachment and school size (school) were associated with each type of activity participation over non-participation. The individual and peer factors had the strongest links to activity participation in general, and in differentiating the types of participation. The findings lend support to suggestions of the strong role of social norms in adolescent activity participation. Participation was more likely in schools with less than 2/3 percent White students and Asians participated at almost the same rate as Whites. Chapter 3 investigated the influence of adolescent school-based EAP on well-being, delinquency, and substance use over time. Sports and multiple activity type participation were related to alcohol use and delinquency but did not increase the variance explained over background variables. Relationships between EAP and these outcomes over time were moderated by school attachment, school size, and parental involvement.

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## INTRODUCTION

For several decades there has been interest in the role of extracurricular activity involvement by adolescents, and particularly recently a growing interest in the developmental consequences of such activity. This concern has been fueled by, among other reasons, (1) the focus on the possible role of activity involvement in promoting school achievement and preventing school disengagement and dropout, (2) the disparities in the school achievement of youth from low income families and racial/ethnic groups relative to White middle-class youth, and (c) the amount of unsupervised time spent by American youth (Eccles & Templeton, 2003). Additional attention to the role of extracurricular activities has resulted from the publication of *A Matter of Time* by the Carnegie Corporation of New York (1992) and other activity researchers (Csikszentmihalyi & Kleiber, 1991; Larson, 2000; Larson & Kleiber, 1993; Larson & Richards, 1989; Mahoney & Stattin, 2000) in which they suggest that constructive, organized leisure activities associated with extracurricular programs predict more beneficial outcomes than relaxed leisure activities which are enjoyable yet not demanding. These researchers suggest five mechanisms through which these positive developmental outcomes occur, stemming from the opportunities participation in constructive extracurricular activities provides:

“(a) to acquire and practice specific social, physical, and intellectual skills that may be useful in a wide variety of settings, including school; (b) to contribute to the well-being of one’s community and to develop a sense of agency as a member of that

community; (c) to belong to a socially recognized and valued group; (d) to establish supportive social networks of both peers and adults that can help in the present as well as the future; and (e) to experience and deal with challenges.”

(Eccles & Templeton, 2003)

Other researchers have also suggested that the settings of extracurricular activities serve as places to act out the developmental tasks of adolescence. Specifically, identity formation occurs by allowing the adolescent to develop skills, discover preferences, and associate themselves with and have others associate them with certain peer group identities (Eccles & Barber, 1999). Being a member of a particular group structures what the individual does with their time and the kinds of values and norms they will be exposed to (Eckert, 1989). Thus, the adolescent’s identity development and peer group involvement influence subsequent activity choices shaping the nature of their developmental pathway.

Participation also affords adolescents the opportunity to develop social capital in the form of extended supportive networks of friends and adults (Carnegie Corporation of New York, 1992; Kahne, et al., 2001; McNeal, 1999; Newmann, et al., 1992; Patrick, et al., 1999). The time adolescents spend in after-school extracurricular activities stands in contrast to the quick paced schedule of the school day. During extracurricular activities, students are better able to get to know other peers and adults through personal bonding, nurturing mutual trust and commitment. Students involved in extracurricular activities have the opportunity to develop mentoring or coaching relationships, develop personal

relationships with peers who share similar interests, and possibly interact with other adults from the school or community who provide support for the activity. This in turn, promotes student engagement and achievement (Lamborn, Brown, Mounts, & Steinberg, 1992).

Finally, activities may provide a challenging setting for students outside of academics. For some students, activities offer a place to develop additional skills and recognition beyond academics however, for others activities may be the only place to obtain success that otherwise would not be obtained through academics. While the support for this notion is largely theoretical, one study (Coleman, 1961) found that students who were more successful in sports than in academics were still able to command the recognition and respect of their peers which was associated with more positive psychosocial outcomes.

In general, studies have found positive relationships between activity participation and positive adolescent development. Participation in extracurricular activities has been linked to reduced rates of criminal offending (Mahoney, 2000), lower rates of substance use (Youniss, Yates, & Su, 1997), and lower likelihood of school dropout and higher rates of college attendance (Eccles & Barber, 1999; Gould & Weiss, 1987; Holland & Andre, 1987; Melnick, Vanfossen & Sabo, 1988). Participation has also been linked to positive development in terms of competence, self-concept, high school grade point average, school engagement and educational aspirations (Eccles & Barber, 1999; Elder & Conger, 2000; Lamborn, Brown, Mounts, & Steinberg, 1992; Winne & Walsh, 1980) as well as an increase in indicators of healthy adult development including higher

educational achievement, better job quality at the age of 25 years, and better mental health (Eccles, Barber, & Stone, 2001; Marsh, 1992; Youniss, Yates, & Su, 1997). Many of these studies on extracurricular activity participation focused on athletics, and those that incorporated other kinds of activity participation did not find similar results for all activities. In recent years many studies have replicated such earlier findings while refining sampling and analysis techniques. Because of this, the associated outcomes of extracurricular activity participation are now more mixed, and in a few cases, activity participation has been linked to negative adolescent personality outcomes and more risky social behavior. Therefore, it is difficult to state that extracurricular activities are uniformly beneficial.

This dissertation consists of three separate studies investigating the links between school-based extracurricular activity participation (EAP) and adolescent development. Chapter One examines (1) the demographic descriptions (profiles) of participants in regard to individual, school, academic, and time use characteristics for individual activities, (2) tests whether these basic descriptions change based on the manner in which activities are grouped together given that to date there is no consensus in the activity research field as to how to group individual activities, and (3) identifies portfolios (or combinations) of school-based activities in which adolescents are commonly participating.

Chapter Two investigates which adolescent developmental contexts are associated with adolescent school-based activity participation. I ask if there are factors in these developmental contexts associated with participation in general, and with different *kinds*



of adolescent school-based activity participation. And finally, are there overlaps between contexts that demonstrate variations in the types of individuals who participate, particularly for adolescents who are characteristically less likely to participate (i.e. minorities & low SES individuals)? I predict sports participation, academic club participation, school involvement participation, performance activity participation, and multiple activity type participation, in reference to non-participation, using individual, family, peer, and school factors in order to assess the associations of these developmental contexts, and overlaps between them, in relation to activity participation.

Finally, Chapter Three examines whether adolescent activity participation is related to substance use, emotional health, and delinquency in the transition to adulthood, one year and six years into a longitudinal study controlling for other factors related to both participation and the outcomes. I also examine whether the relationship between activity participation and these outcomes varies by type of activity, using a mutually exclusive grouping of activities, and by types of individuals, including individual, peer, and school characteristics.

All three chapters utilize data from the *National Longitudinal Study of Adolescent Health* (Bearman, Jones, & Udry, 1997) a large, longitudinal school-based study of adolescents, their families, and their schools focusing on the effects of the multiple social and physical contexts and environments in which they live and representative of schools in the United States with respect to region of country, urbanicity, school type, ethnicity, and school size.

**Chapter One**  
**CONCEPTUALIZING ADOLESCENT EXTRACURRICULAR ACTIVITY**  
**PARTICIPATION AND IDENTIFYING ACTIVITY PORTFOLIOS**

One of the primary settings of an adolescent's life is school. Adolescents spend over nine months of each year and the majority of every weekday at their high schools. There are several roles of high school education, only a piece of which is formal academic instruction. Non-academic outcomes of schooling include the formation of peer groups, race, gender, and class socialization, and identity development which set individuals on developmental trajectories that will have implications for the rest of their lives. These trajectories are influenced by the contexts adolescents choose including the type of education they receive, the friends they associate with, their relationships with adults, and their activities, all of which are embedded in schools. One of the major school settings in which these life tasks are developed are extracurricular activities, however, despite the large amount of literature focused on the contexts of adolescent development, surprisingly little attention has been paid to the role of extracurricular activities.

Extracurricular activities are a central developmental setting for adolescents and are a potential key to understanding development due to the amount of time spent in them. Mahoney, Schweder, & Stattin (2002) reported that at age 14, 75% of adolescents participated in structured extracurricular activities as do 70% of the adolescents interviewed in the *National Longitudinal Study of Adolescent Health*. Given that such a large number of adolescents are participating in at least one type of school-based

extracurricular activity, it is crucial to account for these activities in order to better understand adolescent development in context. Considering the wealth of studies that point to the importance of examining adolescent development in context (Berndt, Hawkins, & Jiao, 1999; Brown, 1990; Coleman, 1961; Dornbusch, Glasgow, & Lin, 1996; Duncan & Raudenbush, 2001; Eccles, Lord, & Midgley, 1991; Elliott et al., 1996; Grotevant, 1997; Leventhal & Brooks-Gunn, 2000; McNelles & Connolly, 1999; Roeser, Midgley, & Urdan, 1996), the role of extracurricular activities in adolescent development must also be examined in concert with other key contexts in which adolescents are embedded. It may be that the kinds of activities in which certain adolescents choose to participate set them on different kinds of life trajectories.

Much of the activity literature documents the benefits of high school extracurricular activity participation (Barber, Eccles, & Stone, 2001; Broh, 2002; Holland & Andre, 1987; Mahoney & Cairns, 1997; McNeal, 1995; Perry-Burney & Takyi, 2002). Less is known however about the patterns of participation. What kinds of adolescents are participating in which school-based extracurricular activities? Many studies have provided descriptions of activity participants in general and by various groups of activities such as sports or academic clubs (Antshel & Anderman, 2000; Eccles & Barber, 1999; Holland & Andre, 1987; Mahoney & Cairns, 1997; McNeal 1998; 1999; Zill, Nord, & Loomis, 1995). This study is the first to provide such profiles for a large number of individual activities utilizing a large, nationally representative dataset that is not yet well incorporated into the activity literature, *The National Longitudinal Study of Adolescent Health* (AddHealth).

In the present study I aim to (1) identify profiles of school-based extracurricular activity participants by providing demographic descriptions of participants in regard to individual, school, academic, and time use characteristics for individual activities (2) test whether these basic descriptions change based on the manner in which activities are grouped together given that to date there is no consensus in the activity research field as to how to group individual activities, and (3) identify portfolios (or combinations) of school-based activities in which adolescents are commonly participating.

### **Patterns of Activity**

To date, descriptions of adolescent activity participants that include a large range of activities are still fairly lacking in the literature. The literature demonstrates that athletics is the most popular activity. Zill, Nord, & Loomis (1995) analyzed four large-scale, representative datasets and reported on the time-use patterns of 10<sup>th</sup> grade American adolescents from the late 1980s to the early 1990s. Forty-six percent of 10<sup>th</sup> graders in the National Educational Longitudinal Study (NELS: 88) reported participating in at least one interscholastic sport at the varsity, junior varsity, or freshman team level. Approximately 14% participated in intramural sports. Approximately 30% of these 10<sup>th</sup> graders reported involvement in an athletic club, and more than 25% were involved in a music or drama activity. About 12% of 10<sup>th</sup> graders reported service club participation, 12% vocation education or professional club participation, 9% worked on the school yearbook, newspaper, or literary magazine, 7% served in student government, and 7% in a hobby club. A similar pattern of participation was reported for high school seniors in

the 1992 Monitoring the Future survey (Zill, Nord, & Loomis, 1995) as well as by the National Center for Educational Statistics (2002).

Activity research findings have indicated that overall, girls participate in more extracurricular activities than boys (McNeal, 1998) but boys are more likely to participate in athletics (Antshel & Anderman, 2000). When researchers control for confounding variables, African Americans are found to be equally likely or more likely than White students to participate in all extracurricular activities except vocational clubs, in which White students are more likely to participate (Mahoney & Cairns, 1997; McNeal, 1998). Finally, adolescents of higher ability and with better grades are more likely to participate in activities (Broh, 2002; Crosnoe, 2001; McNeal, 1998; Melnick, Sabo, & Vanfossen, 1992a; Perry-Burney & Takyi, 2002). Patterns of extracurricular participation over time and by various grade levels are still unaccounted for in the current literature. For example, what age and school grade-level are activity participants? Females participate in more activities than males but which activities are more likely to be comprised of one versus the other? Which activities are more likely to include Blacks, Hispanics, and other races? What combination of these characteristics is found in certain activities? In addition, how many different activities do adolescents participate in at a point in time?

Nearly two decades ago activity researchers pointed to the need for examining whether activity patterns are generalizable across samples (Holland & Andre, 1987; Marsh, 1993). To date, much of the activity literature includes smaller, non-representative samples. These samples have been beneficial in presenting the associations between extracurricular activity participation and specific groups such as dropouts

(Mahoney, 2000; Mahoney & Cairns, 1997), minorities (Davalos, Chavez, and Guardiola, 1999), and single-gendered groups (Miller, Sabo, Farrell, Barnes, & Melnick, 1998), however, little is still known regarding an overall picture of participation among adolescents in the United States.

The majority of representative-sample activity reports stem from one study, NELS:88 (Antshel & Anderman, 2000; Carnegie Corporation of New York, 1992; Jordan & Nettles, 2000; Kahne, et al., 2001; McNeal, 1998; Zill, Nord, & Loomis, 1995) which was collected in 1988, 1990, and 1992 when the adolescents were in 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade, and to a lesser extent by High School and Beyond (HSB) (McNeal, 1999; Melnick, Vanfossen & Sabo, 1988), collected in the early 1980s, and Monitoring the Future (MTF) (Youniss, Yates, & Su, 1997; Zill, et al., 1995), a representative sample of high school seniors. HSB, is currently the only sample in the literature that reports only school-based activities, those sponsored by and held at school as opposed to those run by the community or private lessons. The current study adds to the literature by providing a slightly more current (collected in the mid 1990s), large, nationally representative database to determine adolescent school-based activity participation. The findings from this study can be used to form an overall picture of the demographic composition of school-based extracurricular activities as well as a comparison to earlier datasets to determine if patterns of participation are consistent over time. Based on prior research, I expect that females, higher SES families, White, and younger adolescents will be found in more activities. I also expect that activity participants will not have as much time for paid work and therefore non-participants will work more.

### **Conceptualizing Extracurricular Activities**

To date, there exists no agreed upon method for grouping individual extracurricular activities together. Traditionally, activities are grouped subjectively into sports, academic clubs, school involvement activities, volunteer/service activities, etc. For example, some researchers include cheerleading in the school involvement grouping with newspaper and yearbook (Eccles & Barber, 1999). However, it could be argued that cheerleading belongs in the sports category. Similarly to other sports activities such as football and swimming, cheerleading is a physical activity, requires skill, involves skill building, the group meets often for practice, a sponsor gives the members performance feedback, and others associate the members with their group identity. In traditional groupings participants are also often “double counted” in that activity participation is not coded into mutually exclusive groups. Therefore, one individual could be included in each the sports, academic club, and performance activity groups depending on their activity portfolio. Would participation patterns look differently if mutually exclusive groupings were created such as sports only, school involvement only, performance only, academic only, and multiple context participation?

I suggest that the kinds of adolescents who choose to participate in only one kind of activity are very different from the adolescents who choose to participate in several kinds of activities. This concept is separate from the issue of participation in one activity versus several activities (see Marsh 1992 for Total Extracurricular Activity Participation (TEAP)). Adolescents who participate in several kinds of activities may be exposed to a number of adult mentors and peer groups from which they can choose to associate with.

These adolescents may have a greater store of resources to draw upon socially and intellectually and therefore I expect this group to have more positive profiles than other activity groups.

Recently, particular attention has been paid to the differences in the types of sports activities and new groupings have emerged, such as interscholastic versus intramural sports and team versus individual sports. Interscholastic sports are considered more selective, as having more formalized rules, requiring a greater commitment by the students, and are more competitive than intramural sports (Broh, 2002). Additionally, Marsh & Kleitman's (2003) recent work indicates that extramural/team sports participation has more positive effects in terms of academic performance, internal locus of control, self-esteem, and educational aspirations than intramural/individual sports participation. By grouping activities without a well constructed theory as to how they are related, these activities' unique contributions to adolescent development may go undetected. I expect that a more detailed method of grouping activities will draw out more subtle differences in the demographic characteristics of their participants than the traditional grouping method.

This discussion points to the need to carefully examine the context of activities when grouping them together for analyses. This study therefore examines participation patterns by individual activities, in traditional groupings, in more detailed groupings, and mutually exclusive groupings to determine if one or more of these methods are optimal for revealing differences in participation. I expect that varying methods of grouping together activities will reveal meaningful distinctions in the profiles of their participants.



### **Portfolios of Activity Participation**

Once we have achieved a better understanding of the general patterns of activity participation, it is also necessary to account for patterns of participation at an individual- or person-level. Most studies on extracurricular activity participation examine one activity or a single conceptual group of activities like sports or academic clubs (Bartko & Eccles, 2003). Adolescents' actual participation patterns however don't always include solely one activity or multiple activities of the same type and a few earlier studies have found differences in developmental outcomes based on the combination of activities in which and individual participates.

In two studies looking at males' activity participation, males participating only in athletics scored lower than the national average on the SAT while males participating in both athletics and service activities scored higher than the national average on the SAT (Landers, Feltz, Obermeir, & Brouse, 1978; Rehberg & Cohen, 1975). Two studies of girls' performance on the SAT in relation to activity participation reported mixed results. One study found that girls who participated in both athletics and service activities scored higher on the verbal portion of the SAT (Landers, et al., 1978) while the other study found no difference between girls who participated in both athletics and service activities and those who participated in solely in athletics (Feltz & Weiss, 1984). Additionally, in an examination of both athletic and music activity, students had higher educational expectations than those in athletic-only and music-only activities (Snyder & Spreitzer, 1977). These results may be explained by a differential impact of multiple activity types

for boys compared to girls. Further investigation to understand the impact of combinations of activities (“portfolios”) on adolescent development is surely warranted.

In the only other study to identify portfolios of adolescent extracurricular participation (Bartko & Eccles, 2003), the authors identified six participation portfolios including sports, school, volunteer, work, uninvolved, and high involved. Results indicate that gender, grade point averages, total activity participation rates, and psychological adjustment varied by profile type. The current study expands upon Bartko and Eccles findings by identifying portfolios of participation in a sample of school activities. Students may participate in a sport as well as an academic club, or in student council (a school involvement activity) and drama (a performance activity). While we know that certain individual activities have differential impacts on adolescent development, what kind of impact does a combination of activities have?

A look at the possible combinations of activities (or “portfolios”) that produce certain outcomes is needed, such as a sport and an academic club versus two sports. Perhaps a *diversified* portfolio promotes positive adolescent development. Before any combinations of activities can be analyzed, the activity portfolios of adolescents must first be identified by examining a large, nationally representative sample that can be generalized to the adolescent population. Although this portion of the study is largely exploratory, it is not unreasonable to expect that two kinds of activity portfolios may be revealed. Individuals may stick with activities in which they feel comfortable participating and which they are good at. Therefore, it is expected that a common portfolio would include activities of the same conceptual grouping, such as sports,

academic clubs, or chorus and theater (performance type activities). Another common portfolio may include a rich mixture of conceptual groups such as chorus, a sport, and an academic or foreign language club. Given that many students feel a need to appear well-rounded when it is time to apply to colleges or jobs, they may choose a more diversified portfolio. Additionally, it may be that these combinations of activities are more likely to be comprised of older students from higher SES families and with better grades who have college and career aspirations.

## METHOD

### *Sample*

This study utilized data from the *National Longitudinal Study of Adolescent Health* (Add Health). Add Health (Bearman, Jones, & Udry, 1997) is a large, school-based study of adolescents, their families, and their schools focusing on the effects of the multiple social and physical contexts and environments in which they live. The Add Health study is longitudinal, representative of schools in the United States with respect to region of country, urbanicity, school type, ethnicity, and school size, and re-interviewed adolescents for a second time at a one-year interval and a third time at a six-year interval. Between September 1994 and April 1995, over 90,000 adolescents in grades 7 through 12, from 132 schools, completed an in-school survey regarding topics of the adolescent's social and demographic characteristics, education and occupation of their parents, household structure, risk behaviors, expectations for the future, self-esteem, health status, friendships, and school-year extracurricular activities. Between April and December 1995, over 20,000 of these students completed surveys during an in-home interview covering a range of topics including health status, peer networks, decision-making processes, family composition and dynamics, educational aspirations, sexual relationships, substance use, and criminal activities. Nearly 18,000 parents also completed surveys regarding parent-child relations, family income, and spouses and romantic partners. Together, these data collection periods comprise Wave I of AddHealth.

For the purposes of this study, only Wave I of Add Health including the adolescent in-school, the school administrator, the adolescent in-home, and the parent surveys, along with the contextual database were utilized to determine adolescent school-based extracurricular activity participation patterns. The total sample (n=13, 849) was comprised of all individuals who 1) completed both the inschool and inhome surveys, 2) were assigned sample weights, and 3) did not only participate in “Future Farmers of America” and/or “Other Club”. These two groups were excluded due to the fact that there is no way to determine what kind of activities may be included in “Other Club” and there are no other service or volunteer type activities with which to group Future Farmers of America.

The 6, 896 participants excluded from this study significantly differ from the included participants biasing the sample towards social advantage (see Table 1.1). Excluded participants were slightly more male ( $\chi^2 = 10.72$ ,  $p < 0.01$ ), more Native American and less Asian and Other races ( $\chi^2 = 2750.04$ ,  $p < 0.001$ ), have lower family incomes ( $t = 3.585$ ,  $p < 0.001$ ) and are slightly older ( $t = -9.382$ ,  $p < 0.001$ ). Additionally, excluded participants were more likely to be seniors in high school ( $\chi^2 = 33.60$ ,  $p < 0.001$ ), more likely to be in urban than rural schools ( $\chi^2 = 61.18$ ,  $p < 0.001$ ), more likely to be from the West and Midwest regions of the country ( $\chi^2 = 122.29$ ,  $p < 0.001$ ), more likely to be from large sized schools ( $\chi^2 = 67.42$ ,  $p < 0.001$ ).

### *Measures*

Activity Participation. Students were presented with a list of 33 clubs, organizations, and teams found at many schools and asked to mark all those activities that

they “are participating in this year, or that you plan to participate in later in the school year”. These activities include French, German, Latin, Spanish, Book, Computer, Drama, History, Math, and Science clubs, Band, chorus or choir, orchestra, debate team, cheerleading/dance team, other club or organization, baseball/softball, basketball, field hockey, football, ice hockey, soccer, swimming, tennis, track, volleyball, wrestling, other sport, newspaper, honor society, student council, yearbook, and Future Farmers of America. Students were also asked to indicate if they “did not participate in any clubs, organizations, or teams at school.” For the first section of this chapter, Future Farmers of America and Other Club were dropped from the analyses and extracurricular activity groups were constructed in four manners: Individual Activities, Traditional Grouping, Detailed Grouping, and Mutually Exclusive Groups.

Individual Activities. The 31 remaining activities and the non-participants were analyzed separately. Traditional Grouping. Similarly to Barber & Eccles (1999), activities were grouped into sports, academic clubs, school involvement activities, and performance activities. For a complete list of activities in each grouping see Table 1.1 in Appendix A. Detailed Grouping. Similarly to Broh (2002), Jacobs and Vernon (2003), Marsh & Kleitman (2003), and Vandell, et al. (2003), activities are grouped into team sports, individual sports, foreign language clubs, academic clubs, school involvement activities, and performance activities. For a complete list of activities in each grouping see Table 2 in Appendix A. Mutually Exclusive Groups. Students who only participated in activities in one conceptual group were separated from students who participated in activities across conceptual groups. This conceptual method includes Sports, Academic

Clubs, School Involvement Activities, Performance Activities, and Multiple Activity Types. For a complete list see Table 4 in Appendix B.

### *Demographic Variables*

Gender. The adolescent's gender was asked on the in-school survey, simply "What sex are you?" At the in-home interview, the interviewer was instructed to confirm the respondent's gender (Male: n=6740; 50.0%; Female: n=7107; 50.0%).

Age. Age at Wave 1 was calculated as a continuous variable using the interview dates and respondents' birthdates (range= 11.62-21.26; mean= 15.79; s.e.= 0.13).

Ethnicity. Ethnicity is based on adolescent self-report of the racial category that best describes them. Responses include White (n=6976; 65.9%), Black (n=2995; 15.9%), Hispanic or Latino (n=1043; 4.30%), Asian or Pacific Islander (n=1131; 4.39%), and Other including American Indian or Native American (n=1694; 9.50%).

Family Income. Parent's responses to the question "how much total income before taxes did your family receive in 1994?" were used to create the family income variable (mean=\$45,432; s.e.=\$1721).

### *School Variables*

School Grade Level. At wave 1, students were asked "what grade are you in?" Responses include 6<sup>th</sup>-7<sup>th</sup> (n=1889; 19.3%), 8<sup>th</sup> (n=1825; 17.6%), 9<sup>th</sup> (n=2497; 17.4%), 10<sup>th</sup> (n=2758; 16.4%), 11<sup>th</sup> (n=2642; 14.8%) and 12<sup>th</sup> (n=2127; 14.4%) grades.

Region. School administrators indicated whether their schools were located in the West (n=3124; 14.5%), Midwest (n=3176; 28.7%), South (n=5348; 41.5%), or Northeast (n=2201; 15.4%).

Urbanicity. School administrators indicated whether their schools were urban (n=3949; 24.0%), suburban (n=7527; 58.2%), or rural (n=2373; 17.8%).

School Size. School administrators indicated whether their schools were small (1 to 400 students; n=2015; 18.7%), medium (401-1000 students; n=5275; 47.1%), or large (1001-4000 students; n=6559; 34.2%).

#### *Academic Variable*

Grade Point Average. Adolescents' self-reports of their most recent grades in English, Math, Social Studies, and Science were coded on a 5-point scale (A=4, B=3, C=2, D=1, and F=0) and averaged to create grade point averages (mean=2.85; s.e.=0.02). Adolescents' self-report of grades has been found to be as valid as official school records (Gonzales, Cauce, Friedman, & Mason, 1996).

#### *Time Use Variables*

Paid Work. Adolescents were asked "In the last 4 weeks, did you work- for pay- for anyone outside your home? This includes both regular jobs and things like baby-sitting or yard work." Responses included yes (n=7711; 58.8%) or no.

Hours Paid Work. Adolescents were also asked how many hours they work in "a typical non-summer week". Responses ranged from 0 to 140 hours (mean= 7.14; s.e.= 0.39).

Total Number of Activities. The total number of activities in which each student participated was the sum of all marked activities (range= 0-31; mean=2.15; s.e.=0.06).



## **ANALYSES**

Analyses were performed in three parts. First, the 31 individual activities were examined in terms of survey means and proportions in order to identify profiles (or descriptions) of participants for each activity by basic demographic, school, academic, and time use characteristics. Next, the 31 activities were collapsed into three different conceptual groupings. The traditional method, the more detailed method, and the mutually exclusive method of grouping activities were examined in terms of the same basic characteristics in order to provide profiles of participants that could be compared to determine if different grouping styles affect these descriptions. Finally, the portfolios (or combinations) of activities in which adolescents most commonly participate were identified and also examined in terms of the study variables in order to understand adolescent activity participation as it actually occurs. Confidence intervals were used to determine statistical differences between the activities and groups of activities. All available responses for each variable were utilized therefore sample size varies by variable of interest.

## RESULTS

### *Profiles of Individual Activities*

A list of the activities in order of most participated in to least participated in, as well as the proportions of each gender participating, is presented in Table 1.2. While athletics are the most commonly participated in activities when examined in a group, when examined individually, they are scattered fairly evenly throughout the distribution. However, four sports do occupy the top five activity positions. Basketball and baseball are the most common activities with 41.5% of the sample participating in these sports. Interestingly, non-participants are the third most common activity category. School involvement type activities such as cheerleading, yearbook, and student council and performance activities such as band and choir comprise the middle of the spectrum of activity participation while academic clubs, particularly foreign language clubs, are not particularly popular activities. This is surprising due to the fact that these clubs usually have a larger number of spots available compared to the limited number of positions on a sports team or in the choir. Perhaps it may be that schools offer a large variety of academic and foreign language clubs that allow for a spreading out of students that make these activities individually appear to have low participation.

### *Demographic Profiles*

As expected, more activities are comprised of females than males however there are activities that are the majority male, mostly sports, and some activities that are fairly balanced between the genders. Demographic profiles for the activities are provided by

first separating the activities into the gender groups of which they are mostly comprised. Profiles are discussed first for activities comprised mostly of females, then males, and then balanced activities. All comparisons are in reference to the sample averages for the variables. So for example, “older” or “younger” is in reference to the mean age of the sample.

Swimming, band, chorus/choir, and cheerleading share very similar participant profiles. The basic profile for these activities are younger females, from average family incomes, mostly White but with a higher percentage of Blacks than many other activities. Newspaper, French club, math club, and orchestra also have very similar participant profiles to each other. Their participants are average age females from high income families, again mostly white with a larger percentage of Blacks (in the case of newspaper and French club) or other races (in the case of math club and orchestra) than many other activities.

Two other sets of activities share similar participant profiles to each other. Honor society and debate participants are typically older females from high income families, mostly White but with a higher percentage of Black participants than other activities. Yearbook and Spanish club participants are typically average age females from average family incomes, again mostly White but with a higher percentage of Black participants.

Four activities dominated by females take on unique participant profiles. Student council participants are typically younger females from high income families, mostly White but with a higher percentage of Blacks than many activities. Volleyball’s participants profile is typically younger females from average family incomes and

predominately White. Computer club participants are typically younger females from lower income families, with the lowest percentage of Whites of any other activity (51%) and one of the highest percentages of Blacks (23%). Drama participants are typically average age females from high income families and predominately White.

Basketball, baseball, and football participant profiles look very similar to the swimming, band, chorus, and cheerleading profiles mentioned above only they are dominated by males rather than females. These participants are typically younger males from average family incomes, mostly White and then next comprised of Blacks. Icehockey and fieldhockey share similar profiles in that their participants are typically younger males from high income families, predominately White but the next most common race is Other, unique from almost all other activities. Three other activities share similar profiles in that their participants are typically males from high income families and predominately White, but soccer has younger, other sport has average, and German club has older participants. One activity dominated by males, wrestling, has a unique profile in that typically participants are average age from average family incomes but predominately White.

The final six activities are unique in that they are fairly balanced in composition between the genders and represent a slightly more diverse racial composition. Track, science club, and history club share similar profiles in that their participants are average age (except for history which has younger participants) from average family incomes, mostly White but then with higher percentages of Blacks. Book club participants are typically younger, from lower income families, and with a comparatively lower rate of

Whites (58%) and more Blacks (20%) and Others (13%). Tennis participants are typically average age, from high income families, mostly White (67%) but with higher percentages of Asians (12%) and Others (10%). Finally, Latin club participants are typically older, from high income families, mostly White but with the highest percentage of Others (23%).

In contrast, non-participation has an extremely distinct profile from all activities. These individuals are fairly balanced male (48.4%) and female (51.6%), among the oldest adolescents in the sample, from family incomes much lower than the sample average, mostly White (64%), and then followed fairly equally by Blacks (13%) and Others (12%). Aside from Latin club, non-participation has the highest composition of Hispanics than all activities (6.05%). More demographic variable compositions by activity are presented in Tables 1.3 and 1.4.

### *School Profiles*

Developing distinct profiles of school characteristics by activities is slightly more difficult than demographic profiles. For almost all activities, participants are in younger school grades (6<sup>th</sup> through 8<sup>th</sup> or 9<sup>th</sup> grades) with a steady decrease in participation across grades until a low participation in the 12<sup>th</sup> grade (Table 1.5), from the southern region of the country (Table 1.6), and from suburban and medium sized schools (Table 1.7). Some unique departures from the norm do exist however. Orchestra and German club participants are more likely to come from larger, Midwestern schools and still have a fairly high percentage of high school senior participants (17.2% and 21.2% respectively).

Honor society, yearbook, newspaper, science club, math club, debate, and Latin club also have high percentages of senior year participants. Other sports, volleyball, swimming, track, chorus, and wrestling participants are more likely to come from Midwestern schools. Incidentally, most of these Midwestern located activities are also female dominated, suggesting that females may participate more in activities in the Midwest than males. Ice hockey and field hockey are participated in more in the Northeast.

Non-participants do have a distinct school profile. The non-participation rate jumps slightly in the 9<sup>th</sup> grade and remains fairly constant through the 12<sup>th</sup> grade, suggesting that as overall activity participation rates drop across years in school, students are not dropping out of participation altogether. Non-participants are least likely from small schools but equally likely from medium and large schools ( $\alpha = .05$ ).

#### *Academic Profiles*

Non-participants fall significantly below the sample mean grade point average (mean=2.56; s.e.=0.03). Football participants fall slightly below the sample mean (mean=2.77; s.e.=0.03) and wrestling (mean=2.81; s.e.=0.06), icehockey (mean=2.83; s.e.=0.08), and history club (mean=2.86; s.e.=0.09) participants do not significantly differ from the sample mean grade point average. The rest of the activities contain grade point averages above the sample mean and grade point averages for all activities are significantly higher than that of the non-participants with a 95% confidence interval. Science club (mean=3.20; s.e.=0.05), math club (mean=3.24; s.e.=0.07), debate (mean=3.21; s.e.=0.15), orchestra (mean=3.34; s.e.=0.06), student council (mean=3.27;

s.e.=0.04), and particularly honor society (mean=3.47; s.e.=0.03) have the highest mean grade point averages.

### *Time Use Profiles*

The mean total number of activities participated in ranges from band with a mean of 3.63 activities (s.e.=0.14) to fieldhockey with a mean of 9.38 activities (s.e.=1.00), indicating that most activity participants participate in several activities at a time. Also, the majority of students work for pay but none more than an average of 8.54 hours per week. For the most part, there is an inverted U-shaped relationship between total number of activities and paid work. Activities whose participants are engaged in the least number of total activities or in the highest number of total activities are also less likely to work for pay. Band (3.63 total activities, 58% work), basketball (3.89 total activities, 58% work), and cheerleading (4.47 total activities, 58% work) and German club (7.55 total activities, 58.7% work), history club (7.72 total activities, 58.8% work), book club (8.26 total activities, 59% work), and fieldhockey (9.38 total activities, 55.1% work) follow this pattern. There are no real patterns in regard to hours per week of work. These profiles may indicate that activities like band, basketball and cheerleading require so much of their participants' time that they work less whereas activities such as German, history, and book clubs and fieldhockey are the types of activities that "high volume" participants choose to fill their time rather than work.

Two additional patterns are revealed in this analysis. First, most academic club participants engage in more total activities than the other activity participants. For example, history (mean=7.72; s.e.=0.93), German (mean=7.55; s.e.=1.17), math

(mean=6.31; s.e.=0.35) and computer (mean=6.42; s.e.=0.51) club participants participate in more total activities than band (mean=3.63; s.e.=0.14), chorus (mean=4.01; s.e.=0.17), and basketball (mean=3.89; s.e.=0.10). Additionally, most activity participants are significantly more likely to work for pay than non-participants (55.7%). However, those non-participants who do work, work on average the second highest number of hours per week in the sample (8.43 hours per week). Given that this sample is biased towards social advantage, it is a possibility that the individuals who are more likely working than participating in activities have already dropped from the sample.

#### *Summary of Individual Activity Results*

As expected, more females participate in activities than males. However, there are some sports that are proportionately dominated by females (swimming, volleyball, cheerleading) and others that are balanced in terms of gender (track, tennis). Also, most activity participants come from average to higher income families, are younger or average age, and are White. Blacks are the next largest race comprising activities followed by Others and then typically Asians, which follows the sample's race proportions. Only participation by Hispanics is not proportional to the sample's race average. They are proportionally more likely to be non-participants than participate in almost all activities. Debate, computer club, cheerleading, basketball, and book club have the highest percentages of Black participants. Computer club and orchestra have the highest percentages of Asian participants and Latin club has the highest percentage of Hispanic and Other participants. Interestingly, the activities dominated by females or gender balanced were also the ones with the greatest racial diversity compared to the



male dominated activities. For the most part, participants have higher grade point averages, particularly science club, math club, debate, orchestra, student council, and honor society, than the sample and in every case higher than non-participants. Finally, participants, with a few exceptions, are typically from medium-sized, suburban, southern schools, in the lower school grades.

Non-participants are balanced in regard to gender, but are more likely to be from lower income families, older (in age and in school grade), and equally from medium and large sized schools. Small schools have the lowest non-participation rate. Non-participants have the lowest grade point averages, and are among the least likely to work for pay. However, when they do work, non-participants work a high number of hours per week.

#### *Comparison of Grouping Methods*

Proportions and means of all sample variables by traditional activity groupings are presented in Table 1.8.

##### *Traditional Activity Grouping*

All activities in this grouping (sports, academic clubs, school involvement, and performance) are above the sample averages in regard to grade point average, family income, total number of activities, and percentage who work for pay. In comparing the groups to each other however, there are slight differences in their participant profiles. Sports participants are slightly more likely to be male, average age, come from a lower family income, have the lowest grades, and are mostly White (one of the highest percentages, 69.1%), have the lowest percentages of Blacks and Asians, and slightly

higher percentages of Hispanics and Others than the other groups. Sports participants have the lowest number of total activities, are the most likely to work for pay, their participation decreases as grade in school increases, and like all other groups are more likely from medium, suburban, and Southern schools.

Academic club participants are slightly more female, older, come from higher income families, have the highest grade point averages, and are mostly white (although the lowest percentage of white, 65.2%). Academic club participants in this style of grouping have the second highest number of total activities, are the next most likely to work for pay after sports participants, and their participation peaks in the 12<sup>th</sup> grade. Like all other groups, academic participants are more likely from medium, suburban, and Southern schools.

School involvement participants are mostly female (68.9%), average age, have the highest mean family incomes, have the second highest grade point average, and are mostly white (66%). They have the highest number of total activities, and are the second least likely to work for pay. Their participation is high in 6-8<sup>th</sup> grades, declines, and then rises again in the 12<sup>th</sup> grade. Again, they are more likely from medium, suburban, and Southern schools.

Performance participants in this grouping are again mostly female (69.4%), younger, have the lowest mean family income, the next to lowest grade point average, and have the highest percentage of Whites (69.9%). They have the second lowest number of total activities and are least likely to work for pay. Similarly to sports

participants, their participation decreases as grade in school increases. Again, they are more likely from medium, suburban, and Southern schools.

We lose some of the details in grouping activities together as compared to examining them individually. For example, academic club participants were as likely to be males as females in the individual activity analyses, each dominating the proportion of 5 activities, but the traditional grouping suggests more females participate. Additionally, only performance activity participants are significantly younger than academic club participants in the traditional grouping style which is a slight departure from the individual activity analyses findings in which most academic club activity participants were older than all other activity participants. Consistent with the individual activity analyses, academic club participants have the highest mean grade point averages followed by school involvement activities. School profiles for these groupings are generally consistent with the individual activity analysis.

#### *Detailed Activity Grouping*

Survey proportions and means of all sample variables by detailed activity groupings are presented in Table 1.9. At this point, providing profiles for the grouping styles would be largely redundant, instead comparisons between this style and the traditional grouping style and individual analyses will be discussed.

#### *Demographic Profiles*

The difference between the proportion of males and females participating in sports has narrowed from the traditional grouping style to approximately 7 percentage

points in team sports and 3 percentage points in individual sports. Thirteen percentage points separated the male and female proportions in the traditional grouping. Much more meaningful gender information is revealed through this grouping style in that while males are more likely to participate in team sports, females are almost as likely as males to participate in individual sports. Based on the traditional grouping style, most prior research has suggested that males are more likely than females in sports in general.

The racial composition pattern in the detailed grouping is exactly the same pattern found in the traditional grouping. Whites are more common in each group, followed by Blacks, and then Others. In regard to age, individual sports, foreign language clubs, academic clubs and school involvement activities do not significantly differ. Again, performance activities and now team sports participants are slightly, but significantly younger than both foreign language and academic club participants which is more consistent with the individual activity analyses. Family income does not significantly differ across groupings in this conceptual style.

#### *School Profiles*

The participation pattern across grades in school for this conceptual grouping matches the pattern in the traditional grouping. School profiles for these groupings are generally consistent with both the individual activity analyses and the traditional grouping style. Individual sports are the only exception in that they are equally likely in the South (34.3%) and Midwest (34.6%).

#### *Academic Profiles*

The separation of foreign language clubs from the academic club grouping significantly raises the academic club GPA from the traditional grouping. Foreign language clubs, school involvement activities, and performance activities do not significantly differ from each other on GPA but are significantly higher than individual sports, which are significantly higher than team sports, again providing more meaningful details than the traditional grouping style.

#### *Time Use Profiles*

Total number of activities significantly differ across groups. Foreign language clubs, academic clubs and school involvement activities participants are engaged in the highest total number of activities. Individual sports participants are engaged in the next highest number of total activities followed by performance activity participants, and finally team sports participants. This pattern is much more consistent with the individual activity analyses where sports such as basketball, baseball, and football had among the lowest number of total activities.

These activity groups all slightly yet significantly differ in their proportion of participants who work for pay. More individual sports participants work for pay (62.0%), followed by foreign language club participants (61.5%), team sports (60.7%), performance activities (59.5%), academic clubs (59.2%), and school involvement activities (59.1%). Again, this grouping reveals that sports participants in general are not the most likely to work for pay as suggested in the traditional analysis but that this finding was driven by the individual sports participants

### *Mutually Exclusive Activity Types*

Survey proportions and means of all sample variables by the mutually exclusive activity grouping are presented in Table 1.10. Again, comparisons between the other groupings and the individual analyses are discussed.

### *Demographic Profiles*

Sports only participants are much more likely to be male than female (66.7% compared to 33.3% of females). All other activities are more likely to be female than male (academic only: 59.6%, school only: 71.0%, performance only: 64.6%, and multiple activity types: 56.5%). The sports only, performance only, and multiple activity types groups follow the racial composition pattern of the other activity grouping styles. The academic clubs only group is unique in that while it follows the common racial composition pattern as the other activity conceptualizations, the gaps between the races are not as pronounced. This group has almost as many Others (13.4%) as Blacks (14.4%), and almost as many Hispanics (6.83%) as Asians (7.04%).

Age follows the common pattern of the individual activity analyses and the detailed grouping style. Academic club only participants are significantly older (16.3 years) than sports only, performance only, and multiple activity types participants. They are not significantly older than school only participants (16.1 years).

### *Academic Profiles*

Academic only and multiple activity types participants have the highest mean grade point averages (3.05 and 3.01 respectively), significantly higher than the sample average (2.85). School only and performance only participants do not significantly differ

than the sample average and sports only participants have the lowest mean GPA (2.71), significantly lower than the sample average.

### *Time Use Profiles*

Students who participate in activities across conceptual groups (multiple activity types) participate in the highest number of total activities (mean=3.35; s.e.=0.09). Sports only participants average almost 2 sports (mean=1.89; s.e.=0.04) and academic only (mean=1.25; s.e.=0.04), school only (mean=1.14; s.e.=0.03) and performance only (mean=1.15; s.e.=0.02) participants average closer to one activity.

While the difference in proportions of participants who work for pay between the groups sums to a few percentage points, sports only participants are significantly more likely to work for pay (60.0%) followed by multiple activity type participants (59.5%), although these participants work less hours per week than most other participants who work. School only (58.3%), academic club only (57.9%), and finally performance only participants are less likely to work for pay (56.2%). Although these groups are only averaging participation in one activity, they are also not more likely to work for pay, although academic and school only participants who do work, work the most hours per week.

### *School Profiles*

The grade in school pattern of participants is quite similar to prior grouping styles, however slightly more detail is revealed in regard to academics only participation. Sports only, performance only, and multiple activity type participation decreases steadily from 6<sup>th</sup> and 7<sup>th</sup> grade to 12<sup>th</sup> grade. Academic only participation increases more than two-fold

from 6<sup>th</sup> and 7<sup>th</sup> grade (12.9%) to 12<sup>th</sup> grade (28.8%) and school only participation remains fairly stable with peaks in 8<sup>th</sup> grade (23.0%) and 12<sup>th</sup> grade (21.3%). We can now see that many adolescents join academic clubs in their senior year when their participation in other activities is decreasing. All groups have the same urbanicity pattern as the prior activity conceptualizations.

### *Portfolios of Adolescent Extracurricular Activity Participation*

Multiple activity type followed by sports only participation are the most common school-based activity participation patterns as illustrated in Table 1.10. Together, these two patterns account for 70.5% of the sample. To create the adolescent activity portfolios, manual manipulation of the multiple activity type category was performed. Future Farmers of America and Other Club participation were included in the “other” category. Frequency counts were run on every possible combination of activities available in this grouping and are presented in Table 1.11. As in the analyses of grouping styles, survey means and proportions were calculated for the most common activity portfolios on all study variables. Again, confidence intervals were used to determine significant differences on these variables.

Participation in two types of activities was most common in the multiple activities grouping, accounting for 55% of the group. Participation in three types of activities accounted for 29% of the group and participation in four types of activities accounted for the remaining 16% of the group. The most common activity portfolios in the multiple activities group were sports/performance, sports/academic, sports/academic/



performance/school, and sports/school. These portfolios account for 41.25% of the grouping and 17.92% of the total sample. Survey proportions and means of all sample variables by portfolios are presented in Table 1.12.

### *Demographic Profiles*

The sports/performance portfolio is typically male, average age, from average income families, and mostly White (76.8%) followed by Black (14%). Very low percentages of Asians, Hispanics, and Others participate in this portfolio. The sports/academic portfolio is typically comprised of older males, from higher income families, and mostly White, following the common racial composition pattern in regard to the other races. The sports/academic/performance/school portfolio is typically comprised of average age females from high income families and mostly White, following the common racial composition pattern in regard to the other races. The sports/school portfolio is typically average age females from average income families and mostly White, following the common racial composition pattern in regard to the other races.

### *School Profiles*

The sports/academic/performance/school and sports/school portfolios have their highest participation rates in the 6-7<sup>th</sup> and 8<sup>th</sup> grades and participation decreases to less than half the original proportion by 12<sup>th</sup> grade, and participants are typically from southern, medium sized, and suburban schools. The sports/performance portfolio has the same grade level participation pattern but participants are typically from Midwestern, medium sized, suburban schools. The sports/academic portfolio experiences a

participation rate peak in the 9<sup>th</sup> and 10<sup>th</sup> grades and is also from southern, medium sized, suburban schools.

### *Academic Profiles*

The sports/academic/performance/school and sports/academic portfolios have high grade point averages. The sports/performance portfolio has a lower grade point average but still significantly higher than the average for the sample. The sports/school portfolio grade point average does not significantly differ from the sample average.

### *Time Use Profiles*

The four activity type portfolio leads in total number of activities with 8.02 and many of this portfolio's participants also work for pay (61.7%). The other portfolios average three total activities with participants of the sports/academic portfolio working the most (62.4%), and the sports/school and sports/performance portfolios with less working participants. The sports/performance portfolio participants also work the least hours per week (5.09 hours).

## DISCUSSION

The three goals of this study were to 1) identify profiles of adolescent school-based extracurricular activity participants in regard to demographic, school, academic, and time use profiles; 2) determine whether these participation patterns vary by method of activity grouping style; and 3) identify the portfolios (combinations) of school-based activities in which adolescents participate. Implications from the three sets of findings are discussed in turn.

### *Profiles of Adolescent Activity Participants*

A close examination of individual school-based activities has revealed many interesting patterns, particularly in regard to participation in certain activities, gender, and race, that have implications for future research. While sports in general have received the most focus of all activities, the most common sports are basketball, baseball, track, and football, 43.7% of the sample participates in these sports. Also fairly common is non-participation, accounting for almost 16% of the sample. Interestingly, aside from Honor Society and Spanish club, academic club participation is really not as common, all the remaining academic clubs only include approximately 14.1% of the total sample, suggesting the abundance of research on sports participation is justified. However, future research that focuses on the associations of participation in the most common activities, particularly the four sports mentioned above would be particularly useful in informing the activity literature.

Several gender patterns have been revealed in these analyses that have implications for gender-focused activity research. Grouping activities together has long

demonstrated a pattern for females to be more involved in all activities except for sports, where males are more likely (Antshel & Anderman, 2000; McNeal, 1998). An individual examination of activities reveals that while in general, the “typical” gender pattern is correct, many activities violate this pattern. Swimming, tennis, track, and volleyball are sports that are either majority female or fairly gender balanced. These findings suggest that activity researchers interested in gender should consider both the individual activities and the gender composition of those activities included in their analyses. Discrepant findings in regard to sex could be related to whether a particular gender is the majority or minority of that activity. The context of participation may be especially important to understanding female sports participation. For example, what are the associations between sports participation and females if their sports are particularly male sports versus typically female sports? Studies testing for gender by activity interactions may help to provide more meaningful information to the field.

Studies that look at gender by race interactions may also be particularly meaningful given the findings from the individual analyses suggest that activities mostly comprised of females or more gender balanced also have greater racial diversity. Additionally, several activities with high mean grade point averages (science, math, debate, orchestra, student council, honor society) are also more likely to have female participants, who have a significantly higher mean GPA in this sample than males. Therefore, it will be important in studies of school achievement to account for gender by activity interactions. For example, the activities listed above may suggest that

participation in academic clubs is associated with higher grades however, this finding may not hold for male academic club participants.

The findings of the current study point to the need to also include other contexts of participation in analyses. Examining the racial composition of activities in this study points to both methodological issues and the need for further investigation of race in activity research. The results of this study indicate that almost all activities are comprised mostly of Whites. This racial pattern follows almost exactly with the racial pattern of the sample, using sample weights and controlling for sample design but is contrary to other studies (Marsh & Kleitman, 2003; McNeal, 1998) which found that Blacks were equally or more likely than Whites to participate in activities when using other statistical methods. This study is solely descriptive however and the results demonstrate the need for careful analyses controlling for variables that are confounded with race including SES, ability, and test scores.

Studies that can control for the racial composition of the schools or activity availability by school may prove particularly important. For example, it may be that in schools where the racial composition is mostly White, it does indeed appear that mostly Whites participate in all activities. However, what does the racial composition of activities look like in schools that are not mostly White? This study reports Hispanics as least likely to participate in most activities. In this study however, we are unable to answer many questions in regard to race. Are Hispanics really less likely to participate in most activities? Are there fewer Hispanics than all other races in most of these schools? Are there fewer activities available in which to participate in predominately Hispanic

schools? Studies that can untangle these questions will add to our understanding of the relationship between race and activity participation.

The findings from this study in regard to non-participants are of particular concern and have implications for educational and social policy in terms of availability of activities in certain schools and exclusion from participation. My findings support previous activity research findings on non-participants (McNeal, 1998; Zill, Nord, & Loomis, 1995) in that they are older, come from families with lower incomes, have lower grades, and are from medium or large size schools. Given that this sample is biased towards social advantage, I suspect the discrepancy between participants and non-participants is more drastic than these analyses can uncover. As many junior-high and middle schools feed into fewer high schools there is less availability of participation spots in many activities.

Availability of activities is of particular concern for those who would otherwise choose to participate in activities but are excluded due to a reduction of available spots. For example, many athletic teams have a maximum number of participants, or slots, regardless of school size. For example, soccer requires 11 players on the field at a time, limiting the possible number of players on the team to about 25 or 30. Depending on the number of schools that feed into one high school, the availability of athletic positions drops drastically. The same could be true for chorus, orchestra, and band. Fewer spots could mean more competition and greater skill requirements to participate, thereby increasing the number of non-participants over time, especially in larger schools where there is more competition. Examining the number of feeder schools into each high

school, the availability of similar community-based activities that may require less skill and have less competition for spots, and providing a larger variety of activities in high schools may help to include these adolescents who would otherwise be participants.

On the other hand, there may be adolescents who are excluded from participation based on social disadvantage. Students whose families have lower incomes may have other responsibilities to their families making them unable to participate in after school activities. For example, these students may take on child care responsibilities for younger siblings so their parents can work or because daycare is not affordable. Another possible explanation for the higher family income of participants is that activity participation may impose a cost on participants so that only those students who could afford to help with uniforms, equipment, instruments, and travel costs could participate. These school-based activity non-participants may also be taking advantage of activities in their communities such as the neighborhood pool, basketball courts, and community centers which could possibly impose less of a cost to the adolescents personally. Unfortunately, community-based activity involvement cannot be measured with this data. Finally, no pass/no play restrictions may exclude adolescents who would like to be participants but are of lower ability, have poor time-management skills, or who simply don't have the time to devote to obtaining better grades. Identifying alternative outlets that have benefits similar to school-based extracurricular activities may be particularly advantageous for this group.

#### *Conceptual Groupings of Activities*

Several activity grouping styles were included in the present analyses in order to determine if variation in activity groupings resulted in variation of activity participant descriptions. Included were a traditional grouping of activities modeled after Eccles and Barber (1999; Barber, Eccles, & Stone, 2001), a detailed grouping of activities that has emerged recently loosely modeled after Broh (2002), Jacobs & Vernon (2003), Marsh & Kleitman (2003), and Vandell, et al. (2003), and a mutually exclusive grouping of activities based on this author's preliminary work with this data.

Generally, style of activity grouping did little in varying the overall descriptions of participants from each other and from the individual activity analysis. Description patterns were fairly consistent despite manipulation of the activity groupings. However, subtle details were affected by activity conceptualization and some of the unique patterns indicated in the individual analysis were better preserved by the detailed and mutually exclusive activity groupings. The traditional grouping preserves many of the patterns discovered in the individual analyses but does not call attention to subtle differences between the groups in terms of demographic and academic profiles. For example, only academic and performance activity participants differ in age, academic and school activities do not differ on GPA, and none of the groups differ in racial and school characteristics (at  $\alpha=0.05$ ).

The more detailed conceptual grouping highlighted more of the subtle differences in participant profiles particularly in regard to sports and academic clubs. Females were almost equally as likely to participate in individual sports as males and individual sports participants had slightly better grade point averages than team sports participants.



Separating foreign language clubs from academic clubs highlighted the much higher grade point average academic club participants have in comparison to foreign language club participants and increased the GPA gap between the academic clubs and all other groupings. These findings suggest that activity research interested in gender or achievement may want to utilize such a grouping style that better captures the variance associated with these outcomes.

The mutually exclusive activity grouping is perhaps the most meaningful in these analyses in terms of preserving some of the unique description details of the individual analyses and capitalizing upon the differences between the groups. Patterns of gender participation, racial composition, age, grade point average, and total number of activities are more differentiated with this grouping style. A drawback to this method is that the sample size drops dramatically for academic only, school only, and performance only participation, indicating that these groups are not common participation patterns. Contrary to hypotheses, this grouping method may be similar to examinations of total number of activities in that academic only, school only, and performance only participants average only one activity. However, this grouping may contribute to that research method in that “type” of activity is also considered here. Additionally, this grouping method would be particularly useful for studies interested in sports participation. Sports participation could be compared with multiple activity type participation since the portfolios of multiple activity type participation all include a sport. Examining the outcomes of sports participation compared to sports with other activities participation may help to inform that current line of research.

### *Adolescent Activity Portfolios*

The analyses of students' most common participation patterns have revealed specific school-based activity portfolios. First, the most common participation portfolios are multiple activity types and sports only participation. More specifically, further analysis of the multiple activity type group revealed participation in two activity types to be the most common, followed by three activity types and not as commonly, four activity types. The four most common portfolios were sports/performance, sports/academic, sports/academic/performance/school, and sports/school. The four activity type portfolio appears to be comprised of a unique group of students. Similar to the "High Involved" cluster of Bartko and Eccles (2003) study, this group is mostly female, younger than the sample average, have the highest GPA, highest family income, highest number of total activities, and are the second most likely portfolio to also work for pay. These portfolio's unique differences in regard to participant profiles points to the usefulness of activity portfolios in activity research and examining adolescent participation as it occurs.

### *Conclusions*

This study has taken a step back from the path of current activity research and examined individually, a large group of school-based activities, compared methods of grouping these activities together, and identified adolescent activity portfolios. Through this process, results have supported prior research but also indicated a need to further investigate certain variables in activity analyses. Gender, racial composition, and school characteristics will require careful attention in future analyses. Through examining individual activities, it has become apparent that participation patterns will differ

depending upon the available activities used in a given analysis and the manner in which they are grouped together. Activity researchers need to carefully consider their research questions and what kinds of activities or groupings will best answer those questions.

Additionally, an overall pattern of participation and non-participation has been identified. Unfortunately, the very students at-risk for poor school achievement and dropout may be the ones excluded from participation by various school and social policies. These adolescents may be most in need of the benefits of participation that they cannot capitalize on. Descriptive studies of activities using more variables that encompass all aspects of adolescents' lives, including individual, family, peer, and school domains, are needed. Better identifying the factors differentiating participants from non-participants will aid us in finding ways to help non-participants attain similar benefits as participants, either through making available activities not otherwise available to them, inclusion in available activities in which they could not previously participate, or through alternative outlets.

Table 1.1

*Group Differences for Demographic Variables Between Participants Included and Excluded from this Study(non-weighted data)*

		Included Participants ( <u>n</u> = 13849)		Excluded Participants ( <u>n</u> = 6896)		$\chi^2$
		<u>n</u>	%	<u>n</u>	%	
Gender						10.72**
	Male	6740	48.7	3523	51.1	
	Female	7107	51.3	3373	48.9	
Race						2750.04***
	White	6976	50.4	3479	50.5	
	Black	2995	21.6	1467	21.3	
	Hispanic	1043	7.5	568	8.2	
	Asian	1131	8.2	936	13.6	
	Other	1694	12.2	435	6.3	
Grade in School						33.60***
	6-7 <sup>th</sup>	1889	13.8	875	13.4	
	8 <sup>th</sup>	1825	13.3	889	13.6	
	9 <sup>th</sup>	2497	18.2	1141	17.4	
	10 <sup>th</sup>	2758	20.1	1222	18.7	
	11 <sup>th</sup>	2642	19.2	1199	18.3	
	12 <sup>th</sup>	2127	15.5	1213	18.6	
School Urbanicity						61.18***
	Urban	3949	28.5	2135	32.7	
	Suburban	7527	54.4	3498	53.6	
	Rural	2373	17.1	888	13.6	
School Region						122.29***
	West	3124	22.6	1817	27.9	
	Midwest	3176	22.9	1617	24.8	
	South	5348	38.6	2325	35.7	
	Northeast	2201	15.9	762	11.7	
School Size						67.42***
	Small	2015	14.5	859	13.2	
	Medium	5275	38.1	2173	33.3	
	Large	6559	47.4	3489	53.5	
		<u>M</u>	<u>SE</u>	<u>M</u>	<u>SE</u>	<u>t</u>
Age		16.08	0.01	16.32	0.02	-9.38***
Family Income		46,760	524	43,568	675	3.59***

\*\*p< 0.01, \*\*\*p< 0.001

Table 1.2

*Weighted Proportions of Activity Participants by Gender Composition*

Activity	N	Proportions		
		Total %	% Male	% Female
Sample	13849		50.0	50.0
Basketball	2961	22.1	61.6	38.4
Baseball	2506	19.4	57.1	42.9
Non-Participant	2302	15.9	48.4	51.6
Football	1846	13.8	95.2	4.77
Track	1857	13.2	48.3	51.7
Band	1731	13.4	42.5	57.5
Chorus/Choir	1485	11.4	26.3	73.7
Honor Society	1424	9.54	36.1	63.9
Cheerleading	1375	9.21	4.96	95.0
Other Sport	1298	9.21	57.0	43.0
Yearbook	1259	9.03	28.5	71.5
Student Council	1182	8.32	30.7	69.3
Volleyball	1139	8.93	16.7	83.3
Soccer	1090	8.26	56.4	43.6
Spanish Club	1055	7.52	38.2	61.8
Drama	1016	7.42	34.7	65.3
Swimming	749	5.79	40.5	59.5
Tennis	691	4.33	49.0	51.0
Newspaper	662	4.75	35.8	64.2
Wrestling	558	4.46	92.7	7.32
French Club	542	3.63	35.3	64.7
Science Club	539	3.55	49.1	50.9
Math Club	508	3.41	42.3	57.7
Computer Club	392	2.56	57.8	42.2
Debate	338	2.03	41.7	58.3
Orchestra	277	1.85	44.4	55.6
Icehockey	274	2.23	80.9	19.1
Latin Club	218	1.21	54.3	45.7
History Club	181	1.26	51.8	48.2
German Club	176	1.28	65.8	34.2
Book Club	161	1.14	51.6	48.4
Fieldhockey	161	1.02	55.9	44.1

Table 1.3

*Weighted Proportions of Activity Participants by Racial Composition*

Activity	Proportions				
	% White	% Black	% Hispanic	% Asian	% Other
Sample					
(N=13842)	65.9	16.0	4.30	4.39	9.50
Basketball	65.6	20.3	3.00	3.55	7.58
Baseball	76.0	11.0	2.87	2.33	7.80
Non-Participant	64.1	13.3	6.05	3.98	12.4
Football	66.7	18.6	3.52	3.05	8.05
Track	67.8	19.4	2.30	3.34	7.15
Band	71.2	15.6	2.57	4.11	6.66
Chorus/Choir	74.0	15.2	1.58	3.16	6.07
Honor Society	69.5	13.4	2.23	8.09	6.80
Cheerleading	61.2	21.8	3.25	3.18	10.5
Other Sport	75.5	8.83	2.10	5.60	8.01
Yearbook	63.6	15.1	3.48	7.02	10.8
Student Council	66.7	17.7	3.09	6.40	6.11
Volleyball	73.9	9.58	3.53	4.10	8.85
Soccer	76.9	4.27	5.26	3.90	9.68
Spanish Club	65.4	14.3	4.82	4.82	10.7
Drama	76.9	10.9	2.53	2.81	6.79
Swimming	67.3	15.0	3.60	4.03	10.1
Tennis	66.9	7.91	3.46	12.0	9.71
Newspaper	69.7	13.6	3.90	5.52	7.24
Wrestling	75.0	9.11	5.69	2.33	7.90
French Club	67.3	14.6	1.29	5.93	10.9
Science Club	64.4	17.4	3.60	7.81	6.84
Math Club	55.2	18.3	2.02	12.3	12.2
Computer Club	50.6	22.7	5.35	9.60	11.8
Debate	57.2	26.8	1.44	6.36	8.19
Orchestra	71.2	7.84	4.74	9.40	6.78
Icehockey	78.6	4.23	2.50	4.09	10.6
Latin Club	61.3	4.18	7.28	4.39	22.8
History Club	67.8	15.5	3.66	3.31	9.77
German Club	83.4	8.37	2.98	2.66	2.59
Book Club	57.7	20.5	4.95	4.41	12.5
Fieldhockey	71.0	7.72	3.77	5.73	11.8

Table 1.4

*Weighted Means of Activity Participants by Demographic Characteristics*

Activity	Means					
	Age (n=13840)	GPA (n=12116)	Family Income (n=10389)	Total Activities (n=13849)	% Work for Pay (N=13805)	Hours Work (N=13745)
Sample	15.8	2.85	45432	2.15	58.8	7.14
Basketball	15.3	2.95	45551	3.89	58.3	5.62
Baseball	15.5	2.94	47432	3.95	63.9	6.91
Non-Participant	16.2	2.56	38514	0	55.7	8.43
Football	15.5	2.77	46654	3.81	64.3	6.97
Track	15.7	2.99	48285	4.51	61.7	6.46
Band	15.3	3.11	48832	3.63	58.1	5.58
Chorus/Choir	15.5	2.99	46599	4.01	60.5	6.47
Honor Society	16.1	3.47	55045	4.69	62.9	7.67
Cheerleading	15.4	2.94	44556	4.47	58.0	5.77
Other Sport	15.8	3.05	58700	4.61	64.2	7.41
Yearbook	15.7	2.98	47681	5.08	59.0	6.61
Student Council	15.6	3.27	53547	5.28	60.4	6.64
Volleyball	15.3	3.03	44272	4.69	64.4	6.49
Soccer	15.5	3.01	62271	4.69	64.2	6.11
Spanish Club	15.9	3.07	47660	4.76	62.9	8.13
Drama	15.9	3.07	56910	4.97	63.5	7.09
Swimming	15.1	3.01	48158	5.84	63.8	6.50
Tennis	15.9	3.08	61926	5.78	58.0	6.30
Newspaper	15.8	3.19	52720	5.69	64.2	7.47
Wrestling	15.7	2.81	48401	4.81	65.2	8.19
French Club	15.7	3.11	51588	5.73	62.9	6.70
Science Club	15.9	3.20	48020	5.80	56.9	5.74
Math Club	15.7	3.24	49966	6.31	58.7	6.34
Computer Club	15.2	2.98	42987	6.42	51.7	6.02
Debate	16.0	3.21	66598	6.98	61.5	8.54
Orchestra	15.6	3.34	63164	6.68	59.9	6.59
Icehockey	15.3	2.83	67396	7.00	62.5	6.77
Latin Club	16.3	3.07	58033	6.76	57.7	8.29
History Club	15.5	2.86	47924	7.72	58.8	7.99
German Club	16.2	3.13	57020	7.55	58.7	7.92
Book Club	15.3	3.06	43565	8.26	59.0	7.83
Fieldhockey	14.9	2.97	51116	9.38	55.1	6.12

Table 1.5

*Weighted Proportions of Activity Participants by Grade in School*

Activity	Proportions					
	6-7	8	9	10	11	12
Sample (N=13738)	19.3	17.6	17.4	16.4	14.8	14.4
Basketball	26.2	25.2	17.0	13.8	10.2	7.68
Baseball	21.9	17.8	20.0	18.4	11.8	10.5
Non-Participant	15.4	14.8	17.8	18.0	16.1	17.8
Football	24.2	23.1	17.3	13.9	12.7	8.93
Track	18.1	21.1	18.0	16.6	14.0	12.2
Band	27.8	19.5	16.6	14.0	11.7	10.5
Chorus/Choir	24.9	20.2	16.5	13.6	12.5	12.3
Honor Society	14.8	17.9	11.5	11.8	16.3	27.8
Cheerleading	25.1	19.2	15.4	18.0	13.4	9.03
Other Sport	20.4	16.3	15.1	17.0	16.7	14.5
Yearbook	18.1	25.6	13.4	11.4	12.9	18.6
Student Council	20.6	20.3	15.6	13.6	14.1	15.8
Volleyball	23.9	25.0	16.9	15.2	11.3	7.72
Soccer	22.0	20.3	17.9	16.5	12.0	11.4
Spanish Club	14.5	17.4	15.7	20.1	16.1	16.3
Drama	15.0	13.3	21.8	19.8	14.1	16.1
Swimming	32.6	23.1	15.1	11.7	8.87	8.68
Tennis	16.5	15.2	19.3	17.8	15.1	16.1
Newspaper	18.1	18.7	12.8	12.7	15.5	22.1
Wrestling	18.1	19.1	18.8	16.7	15.2	12.1
French Club	14.8	16.2	21.8	14.7	20.1	12.5
Science Club	18.3	18.6	12.2	12.1	18.5	20.4
Math Club	25.1	16.0	15.5	8.53	16.0	18.9
Computer Club	30.4	25.7	15.2	9.83	7.80	11.1
Debate	13.1	10.4	22.7	18.7	15.7	19.3
Orchestra	22.5	14.9	19.5	14.7	11.2	17.2
Icehockey	31.0	18.7	15.1	13.2	11.3	10.7
Latin Club	11.5	6.41	16.8	27.9	14.5	22.9
History Club	25.0	22.1	16.5	14.6	8.15	13.7
German Club	8.78	11.6	24.4	19.1	14.9	21.2
Book Club	29.8	22.6	13.3	11.9	13.0	9.42
Fieldhockey	36.5	19.1	19.4	9.08	7.28	8.68



Table 1.6

*Weighted Proportions of Activity Participants by School Region*

Activity	Proportions			
	West	Midwest	South	Northeast
Sample (N=13849)	14.5	28.7	41.5	15.4
Basketball	13.5	30.3	38.5	17.8
Baseball	12.0	33.4	37.5	17.0
Non-Participant	16.0	27.4	44.1	12.4
Football	13.7	27.1	42.7	16.5
Track	11.6	38.6	35.4	14.4
Band	12.1	32.0	44.4	11.5
Chorus/Choir	12.5	35.3	34.3	17.8
Honor Society	14.1	23.9	45.7	16.3
Cheerleading	12.3	31.1	41.5	15.1
Other Sport	15.1	32.7	30.1	22.1
Yearbook	13.5	27.4	36.7	22.3
Student Council	11.9	25.0	44.0	19.0
Volleyball	15.6	40.3	30.3	13.8
Soccer	21.4	25.4	28.9	24.4
Spanish Club	10.4	24.8	43.0	21.8
Drama	15.0	27.6	35.4	21.9
Swimming	17.5	35.1	32.2	15.2
Tennis	19.2	22.2	36.9	21.8
Newspaper	12.3	27.7	35.2	24.7
Wrestling	16.3	39.4	24.2	20.1
French Club	11.4	30.9	37.2	20.5
Science Club	9.68	18.7	57.6	14.0
Math Club	14.8	24.8	36.3	24.2
Computer Club	16.2	17.6	42.1	24.2
Debate	13.5	16.8	48.9	20.8
Orchestra	13.9	37.0	21.5	27.6
Icehockey	18.2	27.6	17.5	36.7
Latin Club	27.2	23.6	30.0	19.3
History Club	7.64	17.5	52.8	22.1
German Club	14.6	40.1	28.3	17.1
Book Club	8.02	20.7	42.9	28.4
Fieldhockey	17.0	19.5	24.7	38.9

Table 1.7

*Weighted Proportions of Activity Participants by School Size and Urbanicity*

Activity	Proportions					
	School Size			School Urbanicity		
	Small (1-400)	Medium (401- 1000)	Large (1001- 4000)	Urban	Suburban	Rural
Sample (N=13849)	18.7	47.1	34.2	24.0	58.2	17.8
Basketball	31.7	48.9	19.4	23.6	54.0	22.4
Baseball	26.4	48.3	25.3	20.0	56.6	23.4
Non-Participant	12.7	43.6	43.7	24.0	60.3	15.8
Football	22.3	50.8	26.9	22.8	59.2	17.9
Track	21.6	49.0	29.4	24.5	55.0	20.4
Band	20.1	52.0	27.8	17.0	63.7	19.3
Chorus/Choir	27.3	46.6	26.1	22.3	55.8	21.9
Honor Society	18.7	43.7	37.6	28.2	52.7	19.1
Cheerleading	26.8	45.2	28.1	25.8	54.8	19.4
Other Sport	16.7	53.2	30.0	22.7	59.2	18.1
Yearbook	24.0	49.8	26.2	27.2	52.4	20.3
Student Council	22.2	49.9	27.9	26.1	56.2	17.7
Volleyball	32.0	45.0	23.0	26.2	55.7	18.0
Soccer	20.5	44.8	34.7	27.9	54.4	17.7
Spanish Club	14.8	51.4	33.8	31.4	52.0	16.6
Drama	13.0	48.5	38.5	25.8	52.8	21.4
Swimming	20.1	47.3	21.6	26.6	53.9	19.5
Tennis	15.7	47.9	36.4	26.2	59.6	14.2
Newspaper	20.4	50.9	28.7	31.6	52.4	16.0
Wrestling	15.8	50.3	33.9	18.1	63.4	18.5
French Club	14.9	50.9	34.3	24.0	57.1	18.9
Science Club	24.9	44.8	30.3	26.7	56.5	16.8
Math Club	24.0	47.7	28.3	36.4	55.1	8.55
Computer Club	20.5	54.3	25.2	27.6	58.1	14.4
Debate	18.8	42.3	38.9	27.8	57.5	14.7
Orchestra	14.0	40.1	45.9	35.4	58.0	6.58
Icehockey	15.0	59.3	25.7	21.9	66.6	11.5
Latin Club	5.13	37.6	57.3	27.5	61.3	11.2
History Club	35.7	32.0	32.3	35.1	36.9	28.1
German Club	6.91	34.2	58.9	19.4	43.6	37.0
Book Club	24.6	50.4	25.0	34.5	48.4	17.1
Fieldhockey	19.1	53.4	27.6	20.4	75.0	4.59

Table 1.8

*Weighted Means and Proportions of Study Variables for Traditional Activity Grouping*

Means and Proportions					
Study Variables		Sports (n= 7668)	Academic (n=3616)	School (n= 2405)	Perform (n= 4508)
Total %		55.3	24.8	17.0	33.4
<i>Demographic Variables</i>					
	% Male	56.3	40.9	31.1	30.6
	% Female	43.7	59.1	68.9	69.4
	% White	69.1	65.2	66.0	69.9
	% Black	14.9	15.3	16.2	16.0
	% Hispanic	3.56	3.61	3.24	2.84
	% Asian	4.03	6.26	6.25	3.77
	% Other	8.38	9.62	8.34	7.55
	Age	15.7	15.9	15.7	15.5
	Family Income	49068	49830	51528	47850
<i>School Variables</i>					
Grade	6-7 <sup>th</sup>	20.3	16.2	18.5	24.0
	8 <sup>th</sup>	18.4	16.8	21.4	18.9
	9 <sup>th</sup>	18.1	15.3	13.9	16.9
	10 <sup>th</sup>	17.1	16.3	13.1	15.8
	11 <sup>th</sup>	14.0	16.3	14.6	12.6
	12 <sup>th</sup>	12.1	19.2	18.4	11.8
Size	Small	22.1	18.5	21.9	21.7
	Medium	47.6	47.5	49.9	48.7
	Large	30.3	34.0	28.2	29.5
Urbanicity	Urban	23.6	26.9	27.1	22.7
	Suburban	56.7	53.7	54.2	58.1
	Rural	19.7	19.4	18.7	19.2
Region	West	14.0	13.2	12.7	12.9
	Midwest	30.7	25.3	26.2	31.5
	South	37.8	42.9	39.9	40.4
	Northeast	17.4	18.6	21.3	15.1
<i>Academic Variable</i>					
	GPA	2.93	3.18	3.12	3.02
<i>Time Use Variables</i>					
	Total # Activities	3.20	4.10	4.53	3.54
	% Work for Pay	61.2	60.6	59.1	58.9
	Hours Paid Work	6.76	7.11	6.68	6.01

Table 1.9

*Weighted Means and Proportions of Study Variables for Detailed Activity Grouping*

Means and Proportions							
Study Variables	Team Sports (n= 6920)	Individual Sports (n= 3149)	Foreign Language (n=1809)	Academic Clubs (n=2505)	School (n=2405)	Perform (n=3671)	
Total %	50.8	22.8	12.4	17.0	17.0	27.8	
<i>Demographic Variables</i>							
% Male	53.9	51.9	39.4	41.8	31.1	36.0	
% Female	46.1	48.1	60.6	58.2	68.9	64.0	
% White	68.5	67.8	66.9	63.2	66.0	72.2	
% Black	15.9	15.7	13.4	17.5	16.2	14.4	
% Hispanic	3.57	3.53	3.98	3.16	3.24	2.74	
% Asian	3.54	4.78	4.45	7.55	6.25	3.75	
% Other	8.51	8.10	11.4	8.58	8.34	6.94	
Age	15.6	15.7	16.0	15.9	15.7	15.5	
Family Income	48160	50090	49564	50447	51528	48862	
<i>School Variables</i>							
Grade	6-7 <sup>th</sup>	21.7	19.5	12.9	19.0	18.5	23.9
	8 <sup>th</sup>	19.6	19.7	15.0	18.3	21.4	19.0
	9 <sup>th</sup>	18.0	17.7	18.5	12.8	13.9	17.5
	10 <sup>th</sup>	17.1	16.1	20.6	13.3	13.1	15.0
	11 <sup>th</sup>	13.1	14.5	17.1	15.4	14.6	12.3
	12 <sup>th</sup>	10.5	12.6	15.9	21.0	18.4	12.3
Size	Small	24.1	19.4	13.5	21.6	21.9	21.0
	Medium	47.7	48.3	48.4	46.4	49.9	49.1
	Large	28.2	32.3	38.1	32.0	28.2	29.9
Urbanicity	Urban	23.5	24.4	27.9	27.5	27.1	22.0
	Suburban	56.4	56.8	52.3	54.7	54.2	58.7
	Rural	20.0	18.8	19.8	17.8	18.7	19.3
Region	West	13.6	14.4	12.6	13.4	12.7	12.8
	Midwest	30.4	34.6	28.6	21.7	26.2	31.6
	South	38.9	34.3	38.8	46.8	39.9	40.1
	Northeast	17.2	16.7	20.0	18.1	21.3	15.6
<i>Academic Variable</i>							
GPA	2.91	2.98	3.08	3.26	3.12	3.05	
<i>Time Use Variables</i>							
Total # Activities	3.29	4.23	4.65	4.43	4.53	3.62	
% Work for Pay	60.7	62.0	61.5	59.2	59.1	59.5	
Hours Paid Work	6.50	6.70	7.63	6.64	6.68	6.02	

Table 1.10

*Means and Proportions of Study Variables for Mutually Exclusive Activity Groupings*

Study Variables	Means and Proportions					
	Sports Only (n=3843)	Academic Only (n=545)	School Only (n=252)	Perform Only (n=814)	Multiple Activities (n=6093)	
Total %	28.1	3.59	1.83	6.49	44.1	
<i>Demographic Variables</i>						
% Male	66.7	40.4	29.0	35.4	43.5	
% Female	33.3	59.6	71.0	64.6	56.5	
% White	66.8	58.3	64.3	73.5	65.6	
% Black	16.8	14.4	16.1	13.3	16.7	
% Hispanic	3.95	6.83	4.67	3.04	3.86	
% Asian	3.57	7.04	8.16	4.26	4.70	
% Other	8.89	13.4	6.76	5.94	9.17	
Age	15.8	16.3	16.1	15.4	15.7	
Family Income	45666	38350	39994	42952	48868	
<i>School Variables</i>						
Grade	6-7 <sup>th</sup>	19.0	12.9	12.1	28.2	20.4
	8 <sup>th</sup>	16.9	18.3	23.0	14.2	19.3
	9 <sup>th</sup>	19.0	9.59	11.1	20.2	16.8
	10 <sup>th</sup>	18.8	13.7	12.9	14.8	15.0
	11 <sup>th</sup>	14.8	16.8	19.5	11.4	14.4
	12 <sup>th</sup>	11.5	28.8	21.3	11.2	14.1
Size	Small	21.6	20.3	11.8	18.7	19.3
	Medium	45.4	41.4	55.6	47.0	49.4
	Large	33.0	38.2	32.7	34.3	31.3
Urbanicity	Urban	22.5	29.8	27.3	18.8	25.0
	Suburban	58.3	54.0	59.1	63.1	57.0
	Rural	19.2	16.2	13.6	18.1	18.0
Region	West	14.5	18.4	11.1	15.7	13.7
	Midwest	31.2	18.5	26.4	29.5	28.3
	South	38.9	48.3	44.8	44.9	41.0
	Northeast	15.4	14.8	17.6	9.94	17.1
<i>Academic Variable</i>						
GPA	2.71	3.05	2.84	2.84	3.01	
<i>Time Use Variables</i>						
Total # Activities	1.89	1.25	1.14	1.15	3.35	
% Work for Pay	60.0	57.9	58.3	56.2	59.5	
Hours Paid Work	7.42	8.99	8.04	6.12	6.56	

Table 1.11

*Weighted Proportions of AddHealth Adolescent Activity Portfolios*

Activity Portfolio	n	Multiple Activity Group		Entire Sample	
		%	SE	%	SE
<u>2 Activity Type Portfolios</u>					
Sports/Performance	703	13.3	0.01	5.79	0.01
Sports/Academic	670	10.9	0.01	4.73	0.00
Sports/School	495	8.50	0.01	3.69	0.00
Sports/Other	401	6.53	0.01	2.84	0.00
Academic/Performance	187	3.20	0.00	1.39	0.00
Perform/Other	159	2.78	0.00	1.21	0.00
Academic/Other	175	2.75	0.00	1.19	0.00
Academic/School	176	2.64	0.00	1.15	0.00
School/Performance	148	2.42	0.00	1.05	0.00
School/Other	142	2.03	0.00	0.88	0.00
Cumulative Percentage		55.1		23.9	
<u>3 Activity Type Portfolios</u>					
Sports/Performance/School	280	5.02	0.00	2.18	0.00
Sports/Academic/School	325	5.02	0.00	2.18	0.00
Sports/Performance/Academic	303	4.92	0.00	2.13	0.00
Sports/Academic/Other	210	3.28	0.00	1.42	0.00
Sports/Performance/Other	172	3.18	0.00	1.38	0.00
Sports/School/Other	159	2.28	0.00	0.99	0.00
Academic/School/Other	114	1.69	0.00	0.73	0.00
Academic/School/Performance	97	1.52	0.00	0.66	0.00
Academic/Performance/Other	83	1.34	0.00	0.58	0.00
Performance/School/Other	68	1.13	0.00	0.08	0.00
Cumulative Percentage		29.4		12.3	
<u>4 Activity Type Portfolios</u>					
Sports/Academic/Performance/School	540	8.55	0.01	3.71	0.04
Sports/Academic/Performance/Other	133	2.27	0.00	0.99	0.00
Sports/School/Academic/Other	165	2.48	0.00	1.08	0.00
Sports/School/Performance/Other	89	1.57	0.00	0.68	0.00
Academic/Performance/School/Other	54	0.72	0.00	0.06	0.00
Cumulative Percentage		15.6		6.5	
<u>All Activity Type Portfolio</u>					
Sports/Academic/Performance/School/Other	0	0	0.00	0	0.00

Table 1.12

*Prevalence of Study Variables for the Four Most Common Participation Portfolios*

Study Variables	Sports/Academic/ Performance/ School			
	Sports/ Performance (n=703)	Sports/ Academic (n=670)	School (n=540)	Sports/School (n=495)
	<u>M</u> / %	<u>M</u> / %	<u>M</u> / %	<u>M</u> / %
<i>Demographic Variables</i>				
% Male	51.6	63.8	29.6	30.9
% Female	48.4	36.2	70.4	69.1
% White	76.8	65.5	67.4	68.1
% Black	14.0	14.0	16.3	14.9
% Hispanic	2.52	4.95	2.75	3.51
% Asian	2.40	5.72	5.91	3.83
% Other	4.30	9.87	7.59	9.66
Age	15.2	15.8	15.3	15.3
Family Income	47, 394	50,403	50,882	46,854
<i>School Variables</i>				
Grade				
6-7 <sup>th</sup>	29.1	15.6	25.8	26.8
8 <sup>th</sup>	23.5	16.3	22.2	25.2
9 <sup>th</sup>	15.9	19.1	17.6	15.2
10 <sup>th</sup>	13.3	20.6	11.5	10.2
11 <sup>th</sup>	9.72	16.3	11.2	13.2
12 <sup>th</sup>	8.54	12.2	11.7	9.45
Size				
Small	25.4	17.6	25.4	31.7
Medium	50.0	49.9	48.5	45.4
Large	24.6	32.6	26.2	22.9
Urbanicity				
Urban	20.2	26.9	31.1	28.3
Suburban	60.4	53.8	51.2	52.7
Rural	19.4	19.3	17.7	19.0
Region				
West	14.5	14.1	9.45	17.2
Midwest	40.5	26.3	28.3	28.7
South	34.1	41.5	37.1	33.3
Northeast	10.9	18.1	25.1	20.8
<i>Academic Variable</i>				
GPA	2.96	3.13	3.17	2.84
<i>Time Use Variables</i>				
Total # Activities	3.13	3.24	8.02	3.27
% Work for Pay	57.9	62.4	61.7	58.2
Hours Paid Work	5.09	6.92	6.24	6.33

Additional Activity Data  
Lists of Activities in Each Conceptual Grouping for Chapter 1



Table A1

*Traditional Activity Grouping of the AddHealth Activities*


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Sports	Academic Clubs	Performance Activities	School Involvement Activities
Baseball/Softball	Debate Team	Band	Cheerleading
Basketball	French Club	Drama	Student Council
Field Hockey	German Club	Chorus/Choir	Yearbook
Football	Latin Club	Orchestra	Newspaper
Ice Hockey	Spanish Club		
Soccer	Book Club		
Swimming	Computer Club		
Tennis	History Club		
Track	Math Club		
Volleyball	Science Club		
Wrestling	Honor Society		
Other Sport			

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Table A2

*Detailed Activity Grouping of AddHealth Activities*

Team Sports	Individual Sports	Foreign Language Clubs	Academic Clubs	Performance Activities	School Involvement Activities
Cheerleading	Swimming	French Club	Book Club	Band	Student Council
Baseball/ Softball	Tennis	German Club	Computer Club	Drama	Yearbook
Basketball	Track	Latin Club	History Club	Chorus/Choir	Newspaper
Field Hockey	Wrestling	Spanish Club	Math Club	Orchestra	
Football			Science Club		
Ice Hockey			Honor Society		
Soccer			Debate Team		
Volleyball					

Table A3

*Mutually Exclusive Grouping of AddHealth Activities*

Sports Only	Academic Clubs Only	Performance Activities Only	School Involvement Activities Only	Multiple Activity Types
Cheerleading	Debate Team	Band	Student Council	More than one activity crossing conceptual groups (sports, academic, performance, school involvement)
Baseball/Softball	French Club	Drama	Yearbook	
Basketball	German Club	Chorus/Choir	Newspaper	
Field Hockey	Latin Club	Orchestra		
Football	Spanish Club			
Ice Hockey	Book Club			
Soccer	Computer Club			
Swimming	History Club			
Tennis	Math Club			
Track	Science Club			
Volleyball	Honor Society			
Wrestling				
Other Sport				

## **Chapter Two**

### **A SOCIAL ECOLOGICAL APPROACH TO DESCRIBING SCHOOL-BASED EXTRACURRICULAR ACTIVITY PARTICIPANTS**

For quite some time researchers have been interested in the activities adolescents engage in during the after school hours. Time spent in constructive, organized activities is argued to be a better use of adolescents' time than "hanging out" with friends, watching television, or listening to music (Carnegie Corporation of New York, 1992) because it limits the time adolescents can spend in risky activities, instills competencies and prosocial values, and increases the possibility of establishing social networks that may provide positive outcomes now and in the future (Eccles & Templeton, 2003). Participation in structured, organized activities such as school-based extracurricular activities has been linked to many positive youth outcomes such as academic achievement, less engagement in problem behaviors, lower levels of depressed affect and better mental health, better self-concept, and school engagement (Barber, Eccles, & Stone, 2001; Eccles & Barber, 1999; Holland & Andre, 1987; Lamborn, Brown, Mounts, & Steinberg, 1992; Mahoney, Schweder, & Stattin, 2002; McNeal, 1995).

Much of the information in regard to participation and youth outcomes suggests these links are to participation in general (compared to non-participation), or specify sports participation (Broh, 2002; Hanson & Kraus, 1998; Perry-Burney & Takyi, 2002). In cases where different kinds of activities have been examined, it appears that not all activities are associated with the same outcomes. For example, participation in prosocial activities (church, community-service, & volunteer activities) and performing arts activities was related to reduced adolescent substance use but sports participation was

related to increased alcohol use (Eccles & Barber, 1999). Clearly, not all kinds of activity participation have the same associations with youth outcomes. Which factors are associated with participation in general and which factors are associated with certain kinds of participation?

In the present analysis of the data from the *National Longitudinal Study of Adolescent Health*, I ask which adolescent developmental contexts are associated with adolescent school-based activity participation. I ask if there are factors in these developmental contexts associated with participation in general, and with different *kinds* of adolescent school-based activity participation. And finally, are there overlaps between contexts that demonstrate variations in the types of individuals who participate, particularly for adolescents who are characteristically less likely to participate (i.e. minorities & low SES individuals)? I predict sports participation, academic club participation, school involvement participation, performance activity participation, and multiple activity type participation, in reference to non-participation, using individual, family, peer, and school factors in order to assess the associations of these other developmental contexts, and overlaps between them, in relation to activity participation.

### **Social Ecological Relations to Activity Participation**

Ecological systems theory, characterized by Urie Bronfenbrenner (1979, 1986, 1998) as a bioecological model, views an individual's heredity as joining with multiple levels of the surrounding environment to shape development. Extracurricular activities are not isolated from other developmental contexts. They are embedded in schools and communities, and influenced by families and peers. Exploring this overlap would better capture the idea of social ecology as a web of intersecting developmental contexts. For

example, the degree to which any benefits or costs of these activities vary by different types of individuals, families, peers, and schools.

The individual, family, peer, and school contexts, separately and in combination, are associated with extracurricular activity participation. These contexts are not separate from extracurricular activities. Each of these contexts act in concert with activities in that they each influence and are influenced by participation. Research that acknowledges these connections could better demonstrate how adolescents influence their own activity participation (individual factors) and how their activity participation is influenced by larger social constraints (family, peers, and schools). The factors examined in this study could be the result of either selection or causation but this study design does not attempt to make conclusions either way. This study serves as a preliminary examination of adolescents' developmental contexts and the overlap between them in order to identify the factors that may lead to variability in the types of individuals who participate in extracurricular activities and the *kinds* of activities in which they choose to participate.

### *Individual Domain*

The individual domain of adolescents' lives includes factors such as student's age, school grades, skill level and prior experience, socioeconomic status, race, and gender (Antshel & Anderman, 2000; Garton & Pratt, 1991; Larson & Kleiber, 1993; Otto & Alwin, 1977; Passmore & French, 2001; Quiroz, Gonzales, & Frank, 1996). Such factors are associated with activity participation (McNeal, 1998, 1999). The typical activity participant is a younger, White female (male in the case of athletics), of higher SES, and with better grades (McNeal, 1998). Some researchers have concluded that once controlling for factors that are confounded with race (such as SES), Blacks are almost as

likely to participate in activities as Whites (Marsh & Kleitman, 2003). Are other minority students who come from higher SES families also more likely to participate in activities? Are there certain kinds of activities in which higher SES students including minorities are more likely to participate? These kinds of questions remain to be answered.

Other researchers have looked past this basic description of participants to examine physical health and mental health in relation to participation. One study (Mahoney, Dirks, & Lord, 2003) compared the after-school contexts of children's lives, including after-school programs, parent care, and sibling care. The authors found better physical fitness and lowest body weight among children who participated in after-school programs compared to the other contexts. Another study (Colchico, Zybert, & Basch, 2000) that implemented a school exercise program for African-American females, took pre- and post-intervention measurements of body image and self-esteem. Twelve weeks after implementation, females who participated in the program reported better body images and higher self-esteem than they did prior to participation. Further examination of these variables will establish whether these factors are related to all activity participation or to which activities they may be specifically related. In the individual model participants, regardless of type, are expected to have more positive feelings about their health, self-worth, may be less delinquent, use substances less, and have better grades in school. In regard to kinds of activities, females are expected to participate in more kinds of activities than males, Hispanics are expected to be less likely to participate in most activities, and alcohol use and better physical health are expected to be related to sports participation.

### *Family Domain*

Another important sphere of adolescents' lives is the family. Theory suggests that adolescents who perceive that their parents value social attachments, either through their own school- or community-based activity involvement, or through the attachments their parents form with their friends and their friends' parents, may themselves come to value relationships with community members and participate in activities that put them into contact with others (Coleman, 1988; Elder & Conger, 2000; Fletcher & Shaw, 2000). Adolescent activity participation is also an opportunity for parents and adolescents to share their lives and stay connected as research into feelings of family connectedness has suggested. For example, one study (Broh, 2002) reported that sports participation increased the amount students talked to their parents about school issues.

Another study found a significant difference in extracurricular activity involvement dependent upon the adolescent feeling a sense of belongingness in their family (Chubb & Fertman, 1992). Adolescents who felt a stronger sense of belonging in their families participated in more school and community activities. The authors proposed that the security felt by the students who perceived themselves as belonging in their families encouraged them to explore contexts outside of the family. Additionally, adolescents who can connect with their parents around activities such as music, sports, or school activities may have a greater store of positive topics they can share with their parents than adolescents with interests more difficult for their parents to understand and feel positive about. However, it would be difficult to determine if these adolescents might be better adjusted in general which would also encourage such exploration, suggesting that measures of mental health or well-being should be included in such



analyses as a combination of the individual and family contexts. These studies point to the importance of including parent-adolescent relationships when examining extracurricular activity participation. In the family factors model, it is hypothesized that activity participants will have better relationships with their families (in terms of either more parental involvement or feelings of family connectedness), live with two parents, and come from higher SES families.

### *Peer Domain*

Several researchers have suggested the strong role of social norms in association with adolescent activity participation. These researchers have demonstrated that problematic behavior by peer participants in organized activity settings is linked to increased problem behavior by participants (Eccles, et al., 1993; Mahoney, Stattin, & Magnusson, 2001; Dishion, McCord, & Poulin, 1999). Considering the strong influence of peers during adolescence, is it also likely that peer participation in activities is related to an individual's own participation? In a qualitative study investigating adolescents' own reasons for why they participated in extracurricular activities, a common pattern of statements included "for the enjoyment of it" which was derived from "being good at it" and "having the opportunity to see friends" (Fredericks, et al., 2002).

Other studies, examining the relationship between activity participation and peer groups, found that peer groups for participants were characterized by a higher proportion of friends who planned on attending college and were doing well in school (Eccles & Barber, 1999) and that peer group participation in activities was related to decreased delinquency by participants (Mahoney, 2000). Findings from these studies lead me to expect that individuals who participate in extracurricular activities also have friends who

participate in activities, have friends with better academic achievement, and who are less delinquent. For kinds of activities, similar to the individual factors model, I expect sports participation to be related to increased friends' substance use and that friends' delinquency may not differ from non-participants'.

### *School Domain*

School factors including school structure and school context can either restrict or provide opportunities for participation. Elements of school structure include teachers and size. Teachers inadvertently serve as gatekeepers to extracurricular activities through recruitment and sponsorship. Many teachers are willing to have only a specific number of students in the activities, thereby ensuring a stable membership capacity (Quiroz, Gonzalez, & Frank, 1996) and teachers' preconceptions of their students and activities may differentially affect their selection and recruitment of members of various groups (McNeal, 1998). The sports psychology literature has documented the link between strong social support from coaches, family, and peers in sports participation (Scanlan, 2002; Scanlan & Lewthwaite, 1986). Do other activity participants report such relationships with adults, particularly teachers who sponsor their after-school activities? Adolescents who report better relationships with their teachers may also be more likely to participate in school-based activities.

In regard to size, students are found to participate at lower levels in larger schools (McNeal, 1998). Many athletic teams have a maximum number of participants, or slots, regardless of school size. For example, soccer requires 11 players on the field at a time, limiting the possible number of players on the team to about 25. In smaller schools, a greater percentage of the student-body is needed to fill such spots than in larger schools,

offering more students an opportunity to participate. In larger schools, the limited number of spots may lead to increased competition and increased skill requirements, reducing a student's ability to participate. Smaller schools have also been found to place higher prestige and enthusiasm on sports participation than larger schools (Holland & Andre, 1987) which may encourage more students to participate. These findings raise the question of whether students who are typically less likely to participate, such as minorities or lower SES students, would be more likely to participate in smaller schools where their participation is needed more.

A contextual characteristic of the school includes its social makeup. Student body composition including an increased concentration of minority students and students from single-parent households reduce participation in athletics and activities overall respectively (McNeal, 1999). Again, is participation by minority students who are typically less likely to participate actually more likely in schools with greater concentrations of minority students? In the school factors model, it is expected that activity participants will attend smaller schools, report better relationships with their teachers, and feel more school connectedness, particularly for sports participants who may receive added prestige for their participation.

### *Summary*

Results from the studies discussed above mostly come from small, non-representative samples. Their findings point to the need for analyses with large, representative datasets that can be generalized to the population of adolescents in the United States. The literature indicates there are many factors involved in who participates in activities in general, and suggests that there may be varying factors

influencing participation in different kinds of activities. Previously, most activity research has focused on single developmental contexts and single activity domains, usually sports (Bartko & Eccles, 2003). Recently however, more activity researchers have recognized the importance of examining multiple social contexts in relation to participation (Guest & Schneider, 2003). With the present study, I aim to examine four of the most salient contexts of adolescents' lives in relation to activity participation. I expect to uncover factors in each context that will predict activity participation. In general, I expect to find "healthier" or "more positive" profiles of participants compared with non-participants, and to identify factors that account for or predict participation among those individuals not characteristically likely to participate. I also expect factors to emerge that differentiate the types of activity participation (sports, academics, school involvement, etc.).

## METHOD

### *Sample*

This study utilized data from the *National Longitudinal Study of Adolescent Health* (Add Health). Add Health (Bearman, Jones, & Udry, 1997) is a large, school-based study of adolescents, their families, and their schools focusing on the effects of the multiple social and physical contexts and environments in which they live. For the purposes of this study, the first wave of Add Health including the adolescent in-school, the school administrator, the adolescent in-home, and the parent surveys, along with the contextual database will be utilized to create profiles of adolescents who participate in school-based extracurricular activities. Between September 1994 and April 1995, over 90,000 adolescents in grades 7 through 12, from 132 schools, completed an in-school survey regarding topics of the adolescent's social and demographic characteristics, education and occupation of their parents, household structure, risk behaviors, expectations for the future, self-esteem, health status, friendships, and school-year extracurricular activities. Between April and December 1995, over 20,000 of these students completed surveys during an in-home interview covering a range of topics including health status, peer networks, decision-making processes, family composition and dynamics, educational aspirations, sexual relationships, substance use, and criminal activities. Nearly 18,000 parents also completed surveys regarding parent-child relations, family income, and spouses and romantic partners. The Add Health sample is representative of schools in the United States with respect to region of country, urbanicity, school type, ethnicity, and school size. Adolescents with complete data on all variables of interest were included in this study (n=12,692).

Data were imputed by mean substitution for grade point average, family income, friend's grade point average, friend's activity participation, and friend's delinquency. Grade point average data were imputed for 1, 536 missing cases, family income data were imputed for 2,829 missing cases, friend's GPA were imputed for 2,394 missing cases, friend's activity participation for 5,321 missing cases, and friend's delinquency for 5,626 missing cases. Family income flags for imputed data were not significant in the regression models. Adolescent's GPA, friend's GPA, friend's activity participation, and friend's delinquency flags for imputation were significant for various models as indicated in the results tables.

Characteristics of the adolescents included and excluded from the analyses are provided in Table 2.1. Excluded participants bias the sample towards social advantage. They were more likely to be male ( $\chi^2 = 33.67, p < 0.001$ ), less White and Asian and slightly more Black, Hispanic, and Other ( $\chi^2 = 41.88, p < 0.001$ ), have lower family incomes ( $t = -4.22, p < 0.001$ ) and slightly older ( $t = 11.57, p < 0.001$ ). Excluded participants were also more likely to be seniors in high school ( $\chi^2 = 59.96, p < 0.001$ ), from urban schools ( $\chi^2 = 70.41, p < 0.001$ ), from the West ( $\chi^2 = 104.66, p < 0.001$ ), and from large schools ( $\chi^2 = 65.63, p < 0.001$ ).

## ***Measures***

### ***Dependent Variables***

Activity Participation. Students were presented with a list of 33 clubs, organizations, and teams found at many schools and asked to mark all those activities that they “are participating in this year, or that you plan to participate in later in the school

year”. These activities include French, German, Latin, Spanish, Book, Computer, Drama, History, Math, and Science clubs, Band, chorus or choir, orchestra, debate team, cheerleading/dance team, other club or organization, baseball/softball, basketball, field hockey, football, ice hockey, soccer, swimming, tennis, track, volleyball, wrestling, other sport, newspaper, honor society, student council, yearbook, and Future Farmers of America. Students were also asked to indicate if they “did not participate in any clubs, organizations, or teams at school.”

*Mutually Exclusive Groups.* Students who only participated in activities in one conceptual group were separated from students who participated in activities across conceptual groups. Because many students have diverse activity portfolios, this grouping style allows factors to be associated with specific types of participation rather than attributing factors that may be related to participating in several kinds of activities to one kind of activity in particular. This method also ensures that adolescents are never included more than once in a given group. This conceptual method includes Sports Activities Only, Academic Clubs Only, School Involvement Activities Only, Performance Activities Only, and Multiple Activity Types (diverse activity portfolios). For a list of activities that fall into each category see Table 2.2.

### *Independent Variables*

For the complete list of independent variables by context see Table 2.3.

#### *Individual Variables*

Age. Age at Wave 1 was calculated as a continuous variable using the interview dates and respondents’ birthdates (range=11.62-21.26 years, M=15.76, s.e.= 0.13).

Ethnicity. Ethnicity is based on adolescent self-report of the racial category that best describes them. Responses include White (67.4%), Black (15.0%), Hispanic or Latino (4.09%), Asian or Pacific Islander (4.25%), and Other including American Indian or Native American (9.23%).

Gender. The adolescent's gender was asked on the in-school survey, simply "What sex are you?" At the in-home interview, the interviewer confirmed the respondent's gender. (50.8% Male, 49.2% Female).

Achievement. Adolescents' self-reports of their most recent grades in English, Math, Social Studies, and Science were coded on a 5-point scale (A=4, B=3, C=2, D=1, and F=0). Adolescents' self-report of grades has been found to be as valid as official school records (Gonzales, Cauce, Friedman, & Mason, 1996). The average of these five grades, or their grade point average, represents student achievement ( $M=2.86$ ,  $s.e.=0.02$ ).

Depression. Adolescent responses to 19 questions, primarily drawn from the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), assessing their emotional state were summed to form the depression scale. Questions include how often adolescents felt emotions such as "you were bothered by things that usually don't bother you" and "you felt that you were too tired to do things" during the prior week. Responses on each question range from 0 (never or rarely) to 3 (most of the time or all of the time). Four questions indicating positive affect were reverse coded. ( $\alpha=0.87$ , range=0-56,  $M=10.59$ ,  $s.e.=0.14$ ).

Delinquency. Based on items from the National Longitudinal Survey of Youth (NLS-Y), 15 questions measured the extent to which adolescents engaged in delinquent behavior during the prior 12 months. The delinquency scale includes painting graffiti,



damaging property, lying to parents, stealing from a store, serious fighting, running away from home, driving a car without permission, stealing an item over \$50, robbery, threatening with a weapon, selling drugs, stealing items less than \$50, group fighting, being loud, rowdy, or unruly in a public place, and needing hospital attention. Responses range from 0 (never) to 3 (5 or more times). ( $\alpha=0.84$ , range= 0-45,  $M=4.03$ ,  $s.e.= 0.09$ ).

Physical Health. Adolescent responses to five reverse coded questions were summed to create the physical health scale. Questions include “you have a lot of energy”, “you seldom get sick”, “when you do get sick, you get better quickly”, and “you are physically fit” (responses range from 1 strongly agree to 5 strongly disagree) and “In general, how is your health?” (1 excellent to 5 poor). ( $\alpha=0.71$ , range= 5-25,  $M=19.74$ ,  $s.e.= 0.05$ ).

Feelings of Self-Worth. Adolescent responses to six reverse coded questions, ranging from 1 (strongly agree) to 5 (strongly disagree), create the feelings of self-worth scale. Questions include “you have a lot of good qualities”, “you have a lot to be proud of”, “you like yourself just the way you are”, “you feel like you are doing everything just about right”, “you feel socially accepted”, “you feel loved and wanted”. ( $\alpha=0.85$ , range= 6-30,  $M=24.82$ ,  $s.e.= 0.07$ ).

Alcohol use. Adolescents were assigned a dummy code of 1 (uses alcohol) if they reported that they drank alcohol 3-12 times or more during the past 12 months (28.9%).

Tobacco use. Adolescents were assigned a dummy code of 1 (uses tobacco) if they answered that they smoked cigarettes or that they used chewing tobacco or snuff during the past 30 days (28.2%).

Marijuana use. Adolescents were assigned a dummy code of 1 (uses marijuana) if they answered that they used marijuana during the past 30 days (12.6%).

#### *Family Variables*

Parental Educational Expectations. Each adolescent rated from 1 (low) to 5 (high) how disappointed would each parent be “if you did not graduate from high school?” and “if you did not graduate from college?” Responses were summed. The responses for mothers were used primarily and responses for father were substituted to supplement missing data. ( $\alpha=0.72$ , range= 2-10,  $M= 8.73$ ,  $s.e.= 0.03$ ).

Parental Involvement. The parental involvement scale is the summed scores of 18 questions regarding both shared activities and discussions between adolescents and their parents; 9 activities with mothers and 9 activities with fathers in the past four weeks. Activities with each parent include shopping, playing a sport, going to a religious service or church-related event, “talked about someone you’re dating or a party you went to”, “gone to a movie, play, museum, concert, or sports events”, “had a talk about a personal problem you were having”, “talked about your school work or grades”, “worked on a project for school”, “talked about other things you’re doing in school”. ( $\alpha= 0.73$ , range= 0-18,  $M= 5.56$ ,  $s.e.= 0.09$ ).

Family Connectedness. Family connectedness was constructed from four questions including “how much do you feel that your parents care about you”, “how much do you feel that people in your family understand you”, “how much do you feel that you and your family have fun together”, and “how much do you feel that your family pays attention to you”, ranging from 1 (not at all) to 5 (very much). Categories 1 and 2 (very little) were combined. ( $\alpha= 0.76$ , range= 4-20,  $M= 16.17$ ,  $s.e.= 0.06$ ).

Mother's Education. Two sources for mothers' education are available: Adolescents were asked how far their mothers went in school and mothers who filled out a parent survey were asked how far they went in school. Mother data were utilized first and adolescent responses were used to supplement missing data. Responses were recoded into 1 (less than high school including no school; 14.40%), 2 (high school including GED and business, trade, or vocational school instead of high school; 34.24%), 3 (some college including business, trade, or vocational school after high school; 29.95%), 4 (college; 13.10%), and 5 (post college; 8.31%) ( $M = 2.67$ ,  $s.e. = 0.04$ ).

Family Structure. Three dummy variables indicated whether the adolescent lives with two parents (74.14%), a single parent (22.00%), or in another living arrangement (3.86%).

#### *Peer Variables*

In the friendship section of the AddHealth in school questionnaire, the respondent was asked to nominate up to five male and five female friends from the roster of all students enrolled in the respondent's school and in the sister school. Once friends were nominated, the respondent entered each friend's identification number on the questionnaire. In the event that their friend was not listed on the roster, respondents indicated that the friend went to the school, the friend went to the sister school, or the friend did not attend either school. AddHealth makes it possible to identify both the respondent and the alters that he or she nominates as friends in order to examine the social networks in which the individuals are embedded.

Friends' substance use. Adolescents reported of their three best friends, how many drink alcohol at least once a month ( $M = 1.08$ ,  $s.e. = 0.04$ ), how many smoke at least

1 cigarette a day ( $M=0.79$ ,  $s.e.=0.03$ ), and how many use marijuana at least once a month ( $M=0.56$ ,  $s.e.=0.03$ ). Responses range from 0 (none of the adolescent's three best friends) to 3 (all three best friends).

Friend's delinquent activity. Using the social network data, the adolescents' friend's delinquent behavior was constructed in the same manner as the adolescent's delinquent behavior (range= 0-42,  $M= 4.21$ ,  $s.e.= 0.09$ ).

Friends' academic achievement. Using the social network data, the adolescents' friend's GPA was constructed in the same manner as the adolescent's GPA ( $M=2.88$ ,  $s.e.=0.02$ ).

Friends' activity participation. Using the social network data, the adolescents' friend's activity participation was constructed as a dummy variable, 1 indicating friend's activity participation (91.5%).

### *School Variables*

Relationship with Teachers. Adolescents answered "how much do you feel that your teachers care about you?" on a 5-point scale, 1 (not at all), 2 (very little), 3 (somewhat), 4 (quite a bit), 5 (very much). ( $M= 3.57$ ,  $s.e.=0.02$ ).

Relationship with other Students. Adolescents answered how often they "had trouble getting along with other students" with responses ranging from 0 (never) to 4 (everyday). The item was reversed coded so that a higher score indicates less trouble with other students ( $M= 0.90$ ,  $s.e.= 0.02$ ).

School Attachment. Adolescents answered on a scale of 1 (strongly agree) to 5 (strongly disagree) 3 questions comprising the school attachment variable (see also

Johnson, Crosnoe, & Elder, 2001). Questions include “you feel close to people at your school”, “you feel like part of your school”, and “you are happy to be at your school”. These items were reverse coded and summed so that high scores indicate more school connectedness ( $\alpha = 0.79$ , range= 3-15,  $M = 11.40$ ,  $s.e. = 0.05$ ).

School Size. School administrators indicated whether their schools were 1 (small- 1 to 400 students, 18.8%), 2 (medium- 401-1000 students, 47.1%), or 3 (large- 1001-4000 students, 34.1%).

Percentage White. The school information codebook provides high school stratification quartile percentage white as 1 (0%), 2 (1-66%), 3 (67-93%), and 4 (94-100%). These data were coded into a dummy variable, 1 indicating two-thirds of the school or more (67-100%) is white (proportion in this subsample).

## ANALYSES

First, a series of survey multinomial logistic regressions were performed through STATA to examine the associations between individual, family, peer, and school contexts and adolescent extracurricular activity participation. The categorical dependent variable was activity participation (sports only, academic clubs only, school involvement activities only, performance activities only, and multiple activity type participation) as compared to non-participation (the reference category). The four contexts of adolescents' lives were examined in four separate models, each with all predictors entered into the analyses at the same time. Descriptive statistics for all study variables and baseline percentage participation by activity are presented in Table 2.4. Odds ratios presented in Tables 2.5 and 2.6 can be converted into probabilities by subtracting 1 and multiplying by 100. A negative value indicates less likelihood (Tabachnick & Fidell, 2001).

Second, interaction terms including race by gender, race by family income, and race by percentage white in the school were included in a survey logistic regression analysis in order to determine if overlaps between contexts could identify factors associated with participation among individuals typically less likely to participate. Therefore, race was recoded into the dummy variables Black (0=White 1=Black), Hispanic (0=White 1=Hispanic), Asian, (0=White 1=Asian), and Other (0=White 1=Other) and activities were recoded into dummy variables including sports only (0=non-participation 1=sports only participation), academic clubs only (0=non-participation 1=academic club only participation), etc. All of the variables from the individual, family, peer, and school context multinomial logistic regression models were included as controls in the logistic regression analysis.

## RESULTS

The survey multinomial logistic regressions were significant for each model: individual  $F(75, 47) = 20.29, p < 0.001$ ; family  $F(30, 92) = 8.75, p < 0.001$ ; peer  $F(30, 92) = 8.53, p < 0.001$ ; and school  $F(30, 92) = 12.39, p < 0.001$ . Significant variables distinguishing participation from non-participation, the types of participation, and finally the interaction terms, will be discussed in turn.

### *Contextual Factors Stable across all Activities*

Factors from each developmental context were meaningful in distinguishing participation from non-participation. Higher grade point average, more parental involvement, friend's higher grade point averages, stronger school attachment, and smaller schools were significant factors for every type of activity participation in comparison to non-participation. Odds ratios (Table 2.5) indicate that grade point average was the most significant individual factor in distinguishing all activity participation from non-participation. A one unit increase in GPA (from a C to a B for example) was associated with an increase in the odds of being an activity participant (as compared to a non-participant) by 19% for sports participation, 124% for academic club participation, 50% for school activity participation, 36% for performance activity participation, and 103% for multiple activity participation.

The family factor parental involvement also differentiated all activity participation from non-participation (Table 2.5). A one unit increase in parental involvement (in this case 1 more shared activity or discussion with either mom or dad per week) was associated with an increase in the odds of being a sports participant (10%), an academic club participant (11%), a school activity participant (11%), a performance

activity participant (9%), and a multiple type activity participant (16%) compared to a non-participant.

In the peer context, friend's GPA was a very strong variable in differentiating all activity participants from non-participants (Table 2.6). A one unit increase in GPA was associated with an increase in the odds of sports participation (43%), academic club participation (98%), school activity participation (65%), performance activity participation (62%), and multiple type activity participation (119%) compared to non-participation.

Finally, in the school context, school attachment and school size distinguished all activity participation from non-participation (Table 2.6). A one unit increase on the school attachment scale was associated with an increase in the odds of being a sports only participant (17%), an academic club only participant (8%), a school involvement activity only participant (14%), a performance only activity participant (8%), and multiple type activity participant (18%) as compared to being a non-participant. Adolescents who attend a large school have decreased odds of being sports participants (24%), school activity participants (36%), performance activity participants (28%; marginal significance), and multiple type participants (35%). Adolescents who attend a small school have increased odds of being sports participants (65%) and academic club participants (72%; marginal significance).

Three other patterns emerged from Tables 2.5 and 2.6. With the exception of school involvement only participation, age, mother's education, and friend's activity participation were strong variables in predicting participation as opposed to non-participation. Older students were 10% less likely to be sports only participants,



marginally more likely to be academic club only participants, 17% less likely to be performance only participants, and 11% less likely to be multiple activity type participants. Mother's education was also a strong predictor of activity participation. A one unit increase in mother's education (from "high school" to "some college" for example) was associated with a 22% probability of sports only participation, marginal probability for academic club only activity participation, 35% probability of performance activity participation, and a 40% probability of multiple type activity participation as opposed to school involvement participation or non-participation.

Finally, along with GPA and friend's GPA, friend's activity participation was the strongest variable in the study for predicting participation versus non-participation. Adolescents with at least one friend who participates in school-based extracurricular activities have a 156% increase in odds of being a sports participant, a 76% increase in odds of being an academic club participant, a 105% increase in odds of being a performance activity participant, and a 157% increase in odds of being a multiple type activity participant compared to school involvement participation and non-participation.

#### *Contextual Factors Exclusive to Certain Kinds of Activity Participation*

In differentiating the kinds of activities in which adolescents participate, many factors across developmental contexts were significant in predicting sports only participation. Females, older students, individuals whose friends use tobacco and who attend larger schools had decreased odds of sports only participation. Being Black, having good grades, better physical health, more family connectedness, more parental involvement, higher mother's education, higher friends' grades, friend's participation,

higher school attachment and attending small schools increased the odds of sports participation. In fact, Blacks were 40% more likely to be sports participants than non-participants. Contrary to expectations, sports participation was not associated with better teacher-student relationships or increased alcohol use, although it was marginally related to increased alcohol use by peers.

Fewer factors were significant in predicting academic club only participation but peer factors were particularly meaningful in this case. Students with better grades, who used marijuana less, with higher parental involvement, whose friends use less tobacco and marijuana, also have better grades, and also participate in school-based activities, having better teacher-student relationships and attending schools that are less than 2/3 percent White have increased odds of participating in academic clubs only as opposed to non-participation.

The odds of school involvement only participation were increased for females (132%), better grades, higher parental involvement, higher friends' grades and stronger school attachment. Attending a large school and interestingly, a two-parent household actually decreased the odds (44% for two-parent households) of school involvement participation as compared to non-participation.

Many factors predicted performance activity participation compared to non-participation, particularly individual characteristics. Being female, having better grades, more parental involvement, higher mother's education, higher friends' grades, friends' activity participation, better teacher-student relationships, and stronger school attachment all increase the odds of being a performance activity participant over non-participation.

Being an older student, Hispanic, Other, and friends' alcohol use decreases the odds of such participation.

Similarly to sports only participation, multiple activity type participation was predicted by many factors across all contexts. Being female, Black, having better grades, higher family connectedness, higher parental involvement, higher mother's education, higher friends' grades, friends' activity participation, higher teacher-student relationship scores, and stronger school attachment all increased the odds of multiple activity type participation over non-participation. Older students, students who use tobacco and whose friends use tobacco and marijuana, and attending a large school all decrease the odds of multiple activity type participation. Interestingly, this is the only activity in which higher educational expectations by parents increased the odds of such participation, however the relationship was small (4%).

Some interesting findings from these analyses involve the factors that differentiate the types of activity participation. Better teacher-student relationships were not associated with sports only or school involvement only participation over non-participation. Clearly not all school-based extracurricular activity is associated with better relationships with teachers. Depression and delinquency were also not at all directly related to any kind of activity participation over non-participation. However, the means for depression indicate higher depression among non-participants compared to each of the activity groups and the means for delinquency would suggest higher delinquency among sports participants and non-participants compared to the other activity groups. Although most adolescents who participate in multiple types of activities participate in at least one sport, the only activity type physical health related to was sports

participation. Although parental involvement was related to all activity participation, family connectedness was only related to sports and multiple type activity participation.

#### *Interactions among Variables and Contexts*

Results for the interaction terms race by gender, race by family income, and race by schools' percentage of White students are presented in Table 2.7. Significant interactions were found for school involvement only, performance only, and multiple activity type participation in regard to all three moderators. The gender by race interaction term indicated that females were more likely than males to participate in performance activities but that Hispanic females were more likely than White females (59.58% probability to 43.44%) to participate while White males were more likely than Hispanic males (33.80% compared to 20.33%).

The race by family income interactions revealed a similar pattern of minority inclusion in activities. Regardless of family income, Asians are almost as likely as Whites to participate in school involvement only activities and performance activities. The relationship of multiple activity type participation to Other race however was driven by family income. Regardless of race, Others and Whites from low income families are less likely to participate than those from high income families. However, Others are slightly more likely to participate overall than Whites. The race by percentage White in the school interactions indicate that Whites, Hispanics, and Others are more likely to participate in school involvement activities in schools that are less than 2/3 White. Contrary to previous findings (McNeal, 1999), these findings would suggest that schools that have a high concentration of Whites, present more competition for available spots for all students, not only minorities.

## DISCUSSION

This study involving participants of the National Longitudinal Study of Adolescent Health addressed three research questions. The first was which factors from adolescent developmental contexts (individual, family, peer, and school) differentiate school-based extracurricular activity participation and non-participation. The second question asked whether factors from these contexts could differentiate types of activity participation. And finally, are combinations of factors between contexts related to participation for individuals characteristically less likely to participate? Factors across all developmental contexts were hypothesized to differentiate participation from non-participation in general and participants were expected to have more “positive” profiles than non-participants. Individual and family factors were hypothesized to differentiate types of activity participation, and female minorities, minorities of higher SES, and minorities in schools with lower percentages of White students were hypothesized to have higher probabilities of participation than minority males, with lower SES, and in schools with higher percentages of White students.

As expected, factors from all four developmental contexts were associated with activity participation. At least one factor from each developmental context differentiated all activity participation from non-participation. Adolescents’ GPA (individual), parental involvement (family), friend’s GPA (peer), and school attachment and school size (school) were associated with each type of activity participation over non-participation. As expected, these profiles are more “positive” than non-participant profiles. Specifically, adolescents with better grades, who have more shared activities with their parents, have friends with better grades, who feel more of a connection to their schools,

and do not attend large schools, are more likely to be activity participants across all activity types, consistent with more recent work on adolescent activity participation (Eccles & Barber, 1999; Marsh & Kleitman, 2003; McNeal, 1998).

The individual and peer factors had the strongest links to activity participation (odds ratios furthest from 1) in general, and in differentiating the types of participation. That friends' GPA and friends' participation (except in the case of school involvement) were so strongly related to participation, and in some cases friends' substance use is more related to participation than the individual's own substance use, lends support to suggestions of the strong role of social norms in adolescent activity participation. Family variables had weaker associations with participation than the individual and peer variables, which may be due to family variables having a more indirect relation to participation. Parents shape the individuals their children become through their decisions regarding their development and the values they impart. Parents choose the neighborhoods their children live in and thereby the schools they attend, which in turn provide the pool of friends children can choose from, which they do influenced by the values their parents have instilled in them. Given that participation is related to factors that cut across several contexts, path models that examine both indirect and direct relations to participation will be helpful in determining the magnitude of influence different contexts have in adolescent activity participation.

Contrary to previous research findings, for the most part individual factors including depression, delinquency, self-worth, and substance use did not differentiate activity participants and non-participants in this study. A possible explanation for these results is a relationship between these factors and factors from the other models. For

example, the relationship between these individual variables may be moderated by parental involvement or friends' participation. These two variables were consistent across activity types in differentiating participants and non participants and variations in the participation levels of an individual's friends or their parents' levels of involvement may reveal variations in depression, delinquency, self-worth, and substance use by activity type. Mahoney's (2000) work has already suggested that friend's participation moderates delinquent behavior and further research into moderators is needed to better understand the role of activity participation in adolescent development.

Other variables not captured in this study may also explain the non-significant relationship between depression, delinquency, self-worth, and substance use. Erikson's Psychoanalytic Theory of development holds that the major task of adolescence is identity versus identity diffusion (Miller, 2002). During this period of identity formation, adolescents are considering a variety of roles and try them out in peer groups, clubs, etc. Adolescents' mental health and behaviors may be more related to identification with an activity or identification with fellow activity participants than participation in the activity itself. For example, a soccer player who performs poorly during matches or is a back up player without much playing time may not feel she is cut out to be an athlete or may feel less valued by the team. From a stage-environment fit perspective (see Eccles, et al., 1993), such a situation could be particularly detrimental to an adolescent's development at a time when they need the acceptance of and identification with their peer group.

The *AddHealth* survey did not ask students to indicate which of their activities they identify with the most. Other research (Barber, Eccles, & Stone, 2001; Guest & Schneider, 2003; Hansen, Larson, & Dworkin, 2003) has suggested that adolescent

identity is influenced by participation in specific activities and that identifying with certain activities influences the experiences of those activities. Further research focusing on possible moderating and mediating factors associated with activity participation may prove very meaningful in understanding the mechanisms through which positive developmental outcomes occur.

Only a few factors from the contextual models in this study cut across all activity types and many more factors were related to different types of participation. These findings suggest not all activity participation will have similar developmental outcomes and, the mechanisms through which these outcomes occur may also vary by type of participation. The costs or benefits of activity participation cannot be attached to all types of participation. Most studies examine participation in general or participation in one activity or one kind of activity. Other studies like this one and like the work of Eccles and her colleagues (Barber, Eccles, & Stone, 2001; Eccles & Barber, 1999) and Hansen (Hansen, Larson, & Dworkin, 2003) that compare and contrast activity types will be particularly useful in understanding the value of participation in different types of activities and for different types of adolescents.

Race, gender, family income, and percentage of Whites in the school were included as moderator variables in order to determine if combinations of variables between contexts were related to participation for those adolescents less likely to participate. Indeed, the variables once considered characteristic of non-participants do not apply generally, rather they must be examined in concert with other contexts. For example, family income was not related to participation by Asian adolescents, who were almost as likely as Whites to participate in activities regardless of family income. This



relationship of family income to race was somewhat different for Others and Whites however. Others participate at higher rates than Whites in multiple activity types, but both are slightly less likely to participate if from lower income families, indicating that family income has more of an impact on Whites and Other races than Asians.

The finding for race by gender in performance activities is particularly interesting in that Hispanic females were most likely to participate, followed by White females, White males, and then Hispanic males. This result points to the importance of examining both race and gender, in that aggregating race and/or gender would lead to incorrect assumptions, particularly if there is such a discrepancy between the genders of one race. Minority males may be at increased risk of non-participation than minority females and future research paying careful attention to both race and gender will be needed. Finally, the finding that several races are more likely to participate in schools with lower concentrations of White students deserves further attention. What is it about these schools that encourage more participation? Could these schools place greater emphasis on success outside the classroom than schools with high concentrations of Whites? These findings point to the importance of examining the structural characteristics of schools along with the individual's characteristics and activity participation.

Certain limitations of this study should be taken into consideration. First, the activities included in this study are solely school-based extracurricular activities and the list provided to the students was certainly not exhaustive. While students were able to mark whether they participated in other activities, they were not provided an opportunity to indicate which other activities these might be. While the study was not designed to capture community activities, certainly no conclusions can be drawn in regard to what

determines participation in community-sponsored activities or private activities and lessons. However, it is possible that some of the “non-participants” in this study are involved with activities outside of school. If that were the case, I would expect that separating true non-participants from other kinds of non-school-based participation would only serve to make the differences between participants and non-participants even more apparent.

Finally, two methodological limitations of this study must be considered. All analyses were conducted using survey commands in the STATA software in order to control for the AddHealth sample design. Survey multinomial logistic regression performs pseudo maximum likelihood estimations, and therefore cannot provide a pseudo R squared as you would have in regular multinomial logistic regression. Therefore, we cannot know the approximate variance accounted for by these models. Additionally, due to the number of parameters that would be estimated and the number of primary sampling units (schools) available in this data, I was not able to analyze a cumulative model including all of the variables from each context. It is possible that some of the variables in one developmental context are mediated by variables in another developmental context. Future analyses with the power to examine a cumulative model could help us better understand the combination of contextual factors that are related to activity participation.

### *Conclusions*

The results from the present study point to the importance of considering the other developmental contexts of adolescents’ lives when examining extracurricular activities. The four contexts considered in this study each included characteristics that were

associated with participation in general and the individual and family contexts were particularly useful in differentiating the specific kinds of participation. These results lend support to my earlier statement that extracurricular activities are another developmental context for adolescents and that they are embedded in the larger social ecology and by exploring development and activity participation with multiple contexts, the idea of social ecology is better captured. Indeed, the degree of any benefits or costs of participation will vary by different types of adolescents, families, peers, schools, and activities. Key policy implications from this study are that combinations of school characteristics (school attachment, percentage White), individual (gender, race, grades), and family characteristics (family income) may restrict activity access to certain kinds of individuals and the elimination of some activities could be particularly detrimental to the development of specific subgroups of adolescents.

Table 2.1

*Sample Characteristics of Participants Included in Multinomial Logistic Regression Analyses of Extracurricular Activity Participation (non-weighted data)*

		Included Participants ( <u>n</u> = 12692)		Excluded Participants ( <u>n</u> = 8053)		$\chi^2$
		<u>n</u>	%	<u>n</u>	%	
Gender						33.67***
	Male	6076	47.87	4187	32.99	
	Female	6616	52.13	3864	30.44	
Race						41.88***
	White	6561	51.69	3894	30.68	
	Black	2651	20.89	1811	14.27	
	Hispanic	929	7.32	682	5.37	
	Asian	1009	7.95	557	4.39	
	Other	1539	12.13	1091	8.60	
Grade in School						59.96***
	6-7 <sup>th</sup>	1738	13.69	1026	8.08	
	8 <sup>th</sup>	1686	13.28	1028	8.10	
	9 <sup>th</sup>	2304	18.15	1334	10.51	
	10 <sup>th</sup>	2553	20.12	1427	11.24	
	11 <sup>th</sup>	2436	19.19	1405	11.07	
	12 <sup>th</sup>	1882	14.83	1458	11.49	
School Urbanicity						70.41***
	Urban	3596	28.33	2488	19.60	
	Suburban	6881	54.22	4144	32.65	
	Rural	2215	17.45	1046	8.24	
School Region						104.66***
	West	2822	22.23	2115	16.66	
	Midwest	3001	23.64	1792	14.12	
	South	4845	38.17	2828	22.28	
	Northeast	2024	15.95	939	7.40	
School Size						65.63***
	Small	1858	14.64	1016	8.01	
	Medium	4853	38.24	2595	20.45	
	Large	5981	47.12	4067	32.04	
		<u>M</u>	<u>SE</u>	<u>M</u>	<u>SE</u>	<u>T</u>
Age		16.05	0.01	16.34	0.02	11.57***
Family Income		47.04	0.53	43.37	0.66	-4.22***

\*\*\*p &lt; 0.001

Table 2.2

*Mutually Exclusive Grouping of AddHealth Activities*

Sports Only	Academic Clubs Only	Performance Activities Only	School Involvement Activities Only	Multiple Activity Types
Cheerleading	Debate Team	Band	Student Council	More than one activity crossing conceptual groups (sports, academic, performance, school involvement)
Baseball/Softball	French Club	Drama	Yearbook	
Basketball	German Club	Chorus/Choir	Newspaper	
Field Hockey	Latin Club	Orchestra		
Football	Spanish Club			
Ice Hockey	Book Club			
Soccer	Computer Club			
Swimming	History Club			
Tennis	Math Club			
Track	Science Club			
Volleyball	Honor Society			
Wrestling				
Other Sport				

Table 2.3

*Independent Variables by Developmental Context*

Individual Factors	Family Factors	Peer Factors	School Factors
Age	Parental Educational Expectations	Substance Use	Relationship with Teachers
Ethnicity	Parental Involvement	Delinquency	Relationship with Students
Gender		Academic Achievement	
Achievement	Family Connectedness	Activity Participation	Attachment
Depression	Mother Education		Size
Delinquency	Family Income		
Physical Health	Family Structure		
Self-Worth			
Substance Use			

Table 2.4

*Descriptive Statistics of all Study Variables by Activity Type*

Survey Means and Standard Errors						
	Sports Only (n=3,524)	Academic Only (n=502)	School Involvement Only (n=231)	Performance Only (n=754)	Multiple Activities (n=5,624)	Non- Participation (n=2057)
<i>Individual Variables</i>						
Gender (female)	.34 (.01)	.60 (.03)	.71 (.04)	.65 (.03)	.58 (.01)	.51 (.02)
Age	15.8 (.13)	16.2 (.20)	16.1 (.21)	15.4 (.16)	15.6 (.13)	16.1 (.14)
Black	.16 (.02)	.15 (.03)	.17 (.04)	.13 (.03)	.16 (.02)	.13 (.02)
Hispanic	.04 (.01)	.07 (.02)	.04 (.02)	.02 (.01)	.04 (.01)	.05 (.01)
Asian	.04 (.01)	.06 (.02)	.05 (.02)	.04 (.01)	.05 (.01)	.04 (.01)
Other	.09 (.01)	.14 (.03)	.07 (.03)	.06 (.01)	.09 (.01)	.12 (.02)
GPA	2.73 (.02)	3.02 (.05)	2.86 (.06)	2.85 (.05)	3.01 (.02)	2.61 (.03)
Depression	10.1 (.20)	10.4 (.50)	10.8 (.68)	10.7 (.39)	10.2 (.18)	12.5 (.27)
Delinquency	4.49 (.16)	3.03 (.23)	3.73 (.47)	3.16 (.21)	3.75 (.11)	4.66 (.19)
Physical health	20.2 (.07)	19.2 (.22)	18.8 (.31)	18.8 (.15)	20.0 (.07)	18.7 (.11)
Self-worth	25.1 (.09)	24.5 (.23)	24.8 (.31)	24.4 (.20)	25.0 (.09)	24.0 (.12)
Tobacco use	.30 (.02)	.24 (.03)	.32 (.05)	.24 (.02)	.24 (.01)	.38 (.02)
Alcohol use	.30 (.02)	.21 (.03)	.28 (.05)	.21 (.02)	.28 (.01)	.35 (.01)
Marijuana use	.14 (.01)	.07 (.01)	.15 (.03)	.08 (.01)	.11 (.01)	.18 (.01)
<i>Family Variables</i>						
Educational expectations	8.94 (.05)	8.99 (.13)	8.70 (.19)	8.82 (.09)	9.03 (.04)	8.77 (.08)
Family connectedness	16.2 (.07)	16.0 (.17)	16.4 (.23)	16.1 (.14)	16.3 (.07)	15.7 (.09)
Parental involvement	5.48 (.10)	5.33 (.18)	5.30 (.26)	5.34 (.17)	6.07 (.11)	4.44 (.11)
Mother's education	2.62 (.04)	2.51 (.08)	2.52 (.12)	2.71 (.05)	2.82 (.05)	2.34 (.05)
Two-parent household	.75 (.02)	.69 (.03)	.63 (.05)	.74 (.02)	.76 (.01)	.70 (.02)

Table 2.4 Continued...

Survey Means and Standard Errors						
	Sports Only (n=3,524)	Academic Only (n=502)	School Involvement Only (n=231)	Performance Only (n=754)	Multiple Activities (n=5,624)	Non- Participation (n=2057)
Family income	45,669 (1632)	40,268 (1674)	41,875 (4546)	43,677 (1781)	48,693 (1679)	40,584 (1352)
<i>Peer Variables</i>						
Alcohol use	1.15 (.05)	.91 (.07)	1.04 (.13)	.87 (.07)	1.01 (.04)	1.28 (.05)
Tobacco use	.77 (.04)	.70 (.06)	.82 (.11)	.78 (.06)	.68 (.03)	1.13 (.05)
Marijuana use	.60 (.04)	.39 (.05)	.49 (.08)	.49 (.05)	.49 (.03)	.77 (.04)
Delinquency	4.23 (.11)	3.95 (.19)	4.13 (.24)	4.14 (.23)	4.16 (.12)	4.39 (.10)
GPA	2.85 (.02)	2.94 (.03)	2.87 (.05)	2.88 (.04)	2.96 (.02)	2.71 (.03)
Activity participation	.93 (.01)	.91 (.02)	.88 (.03)	.92 (.01)	.94 (.01)	.83 (.01)
<i>School Variables</i>						
Teacher-student relationship quality	3.54 (.03)	3.67 (.07)	3.62 (.08)	3.61 (.05)	3.66 (.03)	3.34 (.04)
Student-student relationship quality	.89 (.03)	.92 (.08)	.81 (.08)	.91 (.05)	.87 (.02)	1.01 (.03)
School attachment	11.6 (.06)	11.2 (.16)	11.5 (.25)	11.2 (.15)	11.7 (.06)	10.3 (.10)
Small School	.22 (.04)	.21 (.05)	.12 (.04)	.17 (.05)	.20 (.04)	.12 (.03)
Large School	.33 (.05)	.38 (.06)	.34 (.06)	.34 (.06)	.31 (.05)	.44 (.06)
2/3 Percent White	.63 (.05)	.47 (.06)	.57 (.07)	.69 (.05)	.59 (.05)	.60 (.06)



Table 2.5

*Results of Weighted Multinomial Logistic Regression Analyses of Activity Participation as a Function of Individual and Family Variables*

	Odds Ratio				
	Sports Only (n=3,524)	Academic Only (n=502)	School Only (n=231)	Performance Only (n=754)	Multiple Activity (n=5,624)
<i>Individual Variables</i>					
Gender (female)	0.56***	1.25	2.32***	1.58**	1.32**
Age	0.90**	1.11+	1.02	0.83***	0.89***
Black	1.40*	1.51	1.30	0.91	1.43**
Hispanic	0.75+	1.67	0.86	0.41**	0.80
Asian	0.95	1.51	1.43	0.89	1.17
Other	0.79	1.57+	0.60	0.42**	0.87
GPA imputation Flag	0.87	0.72+	0.88	0.80	0.80*
GPA	1.19**	2.24***	1.50**	1.36**	2.03***
Depression	0.99+	0.98+	0.98	0.98+	0.99
Delinquency	1.01	0.98	1.00	0.97+	1.00
Physical Health	1.14***	1.01	0.96	0.97	1.11
Self Worth	0.98	0.98	1.07+	1.00	1.01
Tobacco Use	0.90	0.99	1.08	0.83	0.80**
Alcohol Use	1.03	0.69+	0.80	0.77	1.07
Marijuana Use	0.92	0.59*	1.07	0.77	0.95
F Value	20.29***				
<i>Family Variables</i>					
Educational Expectations	1.03	1.04	0.96	0.99	1.04*
Family Connectedness	1.04**	1.01	1.08+	1.02	1.03*
Parental Involvement	1.10***	1.11***	1.11**	1.09***	1.16***
Mother's Education	1.22***	1.15+	1.16	1.35***	1.40***
Two-parent household	1.03	0.82	0.56**	0.99	0.93
Family Income	1.00	1.00	1.00	1.00	1.00
F Value	8.75***				

Note: Non-participation is reference category (n= 2,061)

\*\*\*p ≤ 0.001 \*\* p ≤ 0.01 \*p ≤ 0.05 +p ≤ .10

Table 2.6

*Results of Weighted Multinomial Logistic Regression Analyses of Activity Participation as a Function of Peer and School Variables*

	Odds Ratio				
	Sports Only (n=3,524)	Academic Only (n=502)	School Only (n=231)	Performance Only (n=754)	Multiple Activity (n=5,624)
<i>Peer Variables</i>					
Alcohol use	1.08+	0.94	1.00	0.81***	1.02
Tobacco use	0.75***	0.85*	0.88	0.91	0.76***
Marijuana use	0.96	0.80*	0.84	0.94	0.90*
Delinquency imputation flag	0.55***	0.72+	0.80	0.60***	0.50***
Delinquency GPA imputation Flag	1.01	0.98	1.00	1.00	1.01
GPA	0.62***	0.88	0.63+	0.47***	0.59***
Participation imputation flag	1.43***	1.98***	1.65**	1.62***	2.19***
Activity participation	0.52***	0.72+	0.73	0.56***	0.46***
F Value	2.56***	1.76**	1.29	2.05**	2.57***
<i>School Variables</i>					
Teacher-student relationship quality	8.53***				
Student-student relationship quality	1.03	1.27**	1.16	1.21**	1.16***
School attachment	1.00	1.00	0.92	0.98	0.99
Small School	1.17***	1.08**	1.14**	1.08***	1.18***
Large School	1.65*	1.58+	0.73	1.26	1.29
2/3 Percent White	0.76*	0.92	0.64*	0.75+	0.65**
F Value	1.18	0.64*	0.88	1.39+	1.01
	12.39***				

Note: Non-participation is reference category (n= 2,061)

\*\*\*p ≤ 0.001 \*\* p ≤ 0.01 \*p ≤ 0.05 +p ≤ .10

Table 2.7

*Coefficients and Probabilities for Interaction Terms by Activity Participation*

	School						Multiple Activity Types
	Sports Only		Academic Clubs		Involvement		
	b		Only	b	Only	b	
<i>Gender x Race</i>							
Gender x Black	-.31		-.18		.07	-.26	
Gender x Hispanic	-.65		.38		-.15	-1.87***	
Gender x Asian	-.21		.95		.93	-.25	
Gender x Other	.31		-.46		.26	1.07+	
<i>Race x Family Income</i>							
Black x Family income	.06		.84+		.08	-.06	
Hispanic x Family income	.18		-.97		.17	.09	
Asian x Family income	-.22		-.36		4.30***	-1.35*	
Other x Family income	-.38		.01		-.78	.20	
<i>Race x School's Percentage White</i>							
Black x % Whites	-.51		.06		-.06	-.62	
Hispanic x % Whites	-.23		1.64		-2.35*	.28	
Asian x % Whites	.34		1.27		1.02	.31	
Other x % Whites	.13		.25		-2.93**	1.00+	
***p ≤ 0.001 **p ≤ 0.01 *p ≤ 0.05 +p ≤ .10							

\*\*\*p ≤ 0.001 \*\* p ≤ 0.01 \*p ≤ 0.05 +p ≤ .10

## **Chapter 3**

### **THE ROLE OF SCHOOL-BASED EXTRACURRICULAR ACTIVITY PARTICIPATION ON SUBSTANCE USE, EMOTIONAL WELL-BEING AND DELINQUENCY IN THE TRANSITION TO ADULTHOOD**

The adolescent years represent a critical period in human development when individuals work towards establishing independence and during which, contexts outside of the family become more important. The choices adolescents make and opportunities made available to them during this critical period may have lifelong implications for their emotional and physical well-being. Researchers have documented that patterns of behaviors started in adolescence often carry through into adulthood (Maggs, Schulenberg, & Hurrelmann, 1997). Thus, the environments adolescents experience are critical in that they provide opportunities for maintaining or changing behaviors that may influence their development, both for better or for worse.

Researchers investigating extracurricular activities have long been interested in the social characteristics and academic achievement outcomes associated with participation, stemming from decades of investigation by sociologists. This line of inquiry has uncovered mostly positive associations between participation and adolescent outcomes. More recent literature from psychologists has focused on the developmental aspects of activity participation which has continued to reveal many positive associations in the areas of substance use, emotional health, and delinquency. Given the abundance of research demonstrating the relationship between activity participation and adolescent developmental outcomes, one of the next directions for activity research is to examine

whether these relationships exist over time. Are the associations between adolescent activity participation and these outcomes also seen later, after participation has ended? In other words, does activity participation have a lasting relationship with developmental outcomes into young adulthood? In the present analysis of the data from the *National Longitudinal Study of Adolescent Health*, I examine whether adolescent activity participation is related to substance use, emotional health, and delinquency in the transition to adulthood, one year and six years into the longitudinal study controlling for other factors related to both participation and the outcomes. I also examine whether the relationship between activity participation and these outcomes varies by type of activity, using a mutually exclusive grouping of activities, and by types of individuals, including individual, peer, and school characteristics.

#### *Substance Use*

In terms of behavioral outcomes, adolescent research in general has focused much attention on substance use such as alcohol and tobacco. Research on substance use includes pathways into, and family and peer influences on, substance use (Petratis, Flay, & Miller, 1995; Windle, 2000). However, only recently has literature investigated the association between extracurricular activity participation and alcohol and tobacco use. Unfortunately, a clear picture has not yet emerged due to the differential outcomes reported by the studies. Several studies have found a link between extracurricular activity participation and reduced rates of substance use (Shilts, 1991; Youniss, Yates, & Su, 1997) while others have associated increased rates of substance use with participation

(Borden, et al., 2001; Eccles & Barber, 1999). The discrepant findings appear to vary with moderators such as gender, type of activity, and peers.

Some studies have found that sports participation decreased the likelihood of females using drugs or alcohol (Perry-Burney & Takyi, 2002) while others have found that sports participation was related to increased alcohol use for both genders (Borden, et al., 2001; Eccles & Barber, 1999). In an effort to tease out the influence of sports participation on substance use levels, Crosnoe (2001) examined gender as a moderator of these associations. Crosnoe found that gender did not moderate tobacco use in regard to sports participation. Athletes and non-athletes did not differ in tobacco use, nor did boys and girls. Alcohol use however, is moderated by gender. Alcohol use increases over time for boys in general (both athletes and non-athletes) and for female athletes. The author suggested that boys (both athlete and nonathlete) may engage in such behavior in order to maintain social standing. For girls, participating in sports compared to non-participating girls, is thought to draw female athletes closer into the peer world and break down prior protective mechanisms such as adult-orientation. However, the author found that alcohol use more negatively affected females' academic performance than it did for males.

Examining participation in activities other than sports, researchers have found that substance use varies by type of activity. Eccles and Barber (1999) found that while participation in prosocial activities (church, community-service, & volunteer activities) was related to reduced alcohol use for both genders, performing arts participation was related to a reduced likelihood of drinking alcohol for boys, but not for girls. In another

study, even though both school-based and non-school-based extracurricular activities were generally related to less alcohol use net of controls, peer influence was the strongest of the controls in explaining the variance in substance use (Borden, et al., 2001).

In one of the only studies linking adolescent activity participation to young adult outcomes, Barber, Eccles, and Stone (2001) examined alcohol use and activity participation. Tenth grade participation in activities was linked to higher or lower levels of alcohol use depending on the activity. Sports and performing arts activity participation in tenth grade was related higher levels of drinking in young adulthood. Prosocial activity participation (church, community-service, & volunteer activities) in 10<sup>th</sup> grade, compared to non-participation, was related to lower levels of drinking alcohol in young adulthood. School involvement activities were unrelated to both initial levels and increases in drinking.

Given the mixed results of extracurricular activity participation and alcohol use, as well as the traditional focus on the role of athletic participation, continued investigation is needed of the associations between activity participation and substance use. For example, what role does gender play in the alcohol use of female students involved in activities other than sports? Because other activities may not typically be associated with more socially active friendships as in the case of sports (Crosnoe, 2001), and because it has been suggested that female athletes are pulled more into the social world of males. I hypothesize that substance use of female participants in non-athletic activities will be lower than for female athletes. I also expect friends' activity

participation to moderate the relationship between activity participation and substance use.

### *Emotional Well-being & Delinquency*

Only a few studies link activity participation to emotional health and delinquent behavior. Much of the work on emotional health has focused on self-concept and self-esteem in relation to school size. Activity participation in smaller schools was predictive of self-esteem, especially for males. This relationship was moderated by athletic performance in that more successful males had increased self-esteem but less successful males in small school, as opposed to large schools, suffered the largest reduction in self-esteem as well as alienation (Holland & Andre, 1987). More recent literature linking extracurricular involvement to adolescent well-being has reported mixed findings depending on gender. One study reported that sports participation between 10<sup>th</sup> and 12<sup>th</sup> grade increased self-esteem and an internal locus of control (Broh, 2002) while another study found sports participation to be unrelated to psychological well-being for girls (Melnick, et al., 1988).

In a study extending beyond sports participation, Mahoney et al. (2002) examined the role of structured extracurricular activity involvement in moderating the relationship between detached parent-adolescent relationships and depressed mood. Adolescents with detached relationships with their parents, reported lower levels of depressed mood when participating in structured extracurricular activities than non-participants, particularly for participants who perceived high support from their activity leader. Support from after-school activity leaders was particularly important for youth characterized by highly



detached relations with their parents. While girls reported higher levels of depressed mood than boys did, and boys reported closer relationships with their activity leaders than girls did, results were consistent across genders. In regard to young adult emotional well-being, activity participation has been linked to less feelings of worry in regard to family finances, finding a job in the future, and feeling discouraged about the future for all types of activities except for performing arts and school involvement (Barber, et al., 2001). Participation however was unrelated to depressed mood. Clearly, further research on the links between extracurricular activity participation and psychological adjustment are warranted to establish more conclusive results.

While the research on activity participation and delinquency is as limited as emotional well-being, there is some evidence to suggest such a relationship exists. Two early studies noted that participation in athletic or service activities was related to lower incidence of delinquent acts, particularly for low-achieving and blue-collar males (Holland & Andre, 1987). More recently, participation in other highly structured activities including band, orchestra, chorus, school plays, or musicals were also associated with lower levels of delinquency (Zill, Nord, & Loomis, 1995). The authors suggested the benefits of an activity depend upon the attitudes that the other participants have about engaging in certain high-risk behaviors, such that if the group encourages some forms of risky behavior, participation in that activity may be detrimental. Mahoney's studies have supported this theory of the strong role of peers in the relationship between activity participation and delinquency.

Mahoney (2000; Mahoney & Stattin, 2000) specifically examined the influence of social networks and activity context in relation to delinquency. Mahoney reported a participation-social network interaction effect whereby a reduction in criminal arrest among high-risk boys and girls was dependent on whether the individuals' social network (at least 50% of the network) also participated in school extracurricular activities. Mahoney pointed out that the more delinquent individuals were participants in unstructured activities and characterized by deviant peer relationships, poor parent-child relationships, and low support from their activity leaders pointing to the possible importance of a close relationship with an adult as an important influence on adolescent delinquent activity.

Activities such as sports that put members in close, consistent contact with an adult coach may be related to lower levels of delinquent behavior as opposed to other kinds of activities that may not meet as often or provide such adult supervision. Activity participation has not been linked to young adult delinquency as of yet but Mahoney has suggested that increases in emotional well-being and reductions in problem behaviors should occur through the assets gained through participation, namely membership in prosocial peer groups and emotional connections to school. Thus it is expected that activity participation will be related to both emotional well-being and delinquency in young adulthood and that these relationships may be moderated by friends' activity participation and attachment to school.

### *Summary*

Extracurricular activity participation is predominantly associated with positive outcomes for adolescents in the areas of substance use, emotional well-being, and delinquency. Additionally, one of the only studies of activity participation and the transition to adulthood indicates a continuing fairly positive relationship to these outcomes. The present study examined a large, nationally representative dataset that makes it possible to study outcomes over time (3 waves) in order to explore whether activity experiences matter as individuals make the transition to young adulthood or whether these associations with activity participation are limited to adolescence. Additionally, relationships to substance use, emotional well-being, and delinquency by activity types were examined in order to determine if these relationships vary by type of participation. While the activity literature provides a good deal of information regarding associations with participation, there is little discussion as to the mechanisms that might be related to some of the relationships found in prior studies (Eccles & Templeton, 2003). Therefore the present study tests moderators of activity participation including gender, parental involvement, school attachment, school size, and friends' participation in relation to these outcomes.

## METHOD

### *Sample*

This study utilized data from the *National Longitudinal Study of Adolescent Health* (Add Health; Bearman, Jones, & Udry, 1997), a large, school-based study of adolescents, their families, and their schools focusing on the effects of the multiple social and physical contexts and environments in which they live. For the purposes of this study, Waves I, II, and III of Add Health including the adolescent in-school, the school administrator, the adolescent in-home, and the parent surveys, along with the contextual database were utilized to investigate the influence of adolescent school-based extracurricular activity participation on well-being, delinquency, and substance use over time.

The Add Health study is longitudinal, representative of schools in the United States with respect to region of country, urbanicity, school type, ethnicity, and school size, and re-interviewed adolescents for a second time at a one-year interval and a third time at a six-year interval. Between September 1994 and April 1995, over 90,000 adolescents in grades 7 through 12, from 132 schools, completed an in-school survey regarding topics of the adolescent's social and demographic characteristics, education and occupation of their parents, household structure, risk behaviors, expectations for the future, self-esteem, health status, friendships, and school-year extracurricular activities. Between April and December 1995, over 20,000 of these students completed surveys during an in-home interview covering a range of topics including health status, peer networks, decision-making processes, family composition and dynamics, educational

aspirations, sexual relationships, substance use, and criminal activities. Nearly 18,000 parents also completed surveys regarding parent-child relations, family income, and spouses and romantic partners. Together, these data collection periods comprise Wave I of AddHealth.

Between April and August 1996, over 14,000 adolescents completed Wave II of AddHealth. The in-home interview was similar to that at Wave I for adolescents however parents were not re-interviewed at Wave II. Finally, between August 2001 and April 2002, over 15,000 of the original Wave I adolescents were re-interviewed, creating Wave III when the respondents were between 18 and 26 years of age. This wave was designed to collect data helpful in analyzing the transition between adolescence and young adulthood. To better understand this transition, the emphasis in Wave III was on the multiple domains of young adult life that individuals enter during the transition to adulthood, and their well-being in these domains: labor market, higher education, relationships, parenting, and community involvement.

Data were imputed by mean substitution for family income, ability, friend's activity participation, and friend's delinquency. Family income data were imputed for 1,736 missing cases, ability data for 342 missing cases, friend's activity participation data for 3,189 missing cases, and friend's delinquency for 3,381 missing cases. Family income flags and friend's delinquency flags for imputed data were not significant in the regression models. Friend's activity participation and ability flags for imputation were significant for various models as indicated in the results tables.

Characteristics of the adolescents included and excluded from the analyses are provided in Table 3.1. Excluded participants biased the sample slightly towards social advantage. They were more likely to be male ( $\chi^2 = 50.54$ ,  $p < 0.001$ ), have lower family incomes ( $t = -2.82$ ,  $p < 0.01$ ), to be less White and slightly more Hispanic and Other ( $\chi^2 = 50.83$ ,  $p < 0.001$ ), and slightly older ( $t = 11.57$ ,  $p < 0.001$ ). Excluded participants were also more likely to be from urban schools ( $\chi^2 = 130.94$ ,  $p < 0.001$ ), from the West ( $\chi^2 = 26.43$ ,  $p < 0.001$ ), and from large schools ( $\chi^2 = 178.70$ ,  $p < 0.001$ ).

### *Measures*

#### *Controls*

Gender. The adolescent's gender was asked on the in-school survey, simply "What sex are you?" At the in-home interview, the interviewer confirmed the respondent's gender. (49.3% Male, 50.7% Female).

Age. Age at Time 2 and age at Time 3 were calculated as a continuous variable using the interview dates and respondents' birthdates (Time 2 age: range= 11-21 years,  $M = 15.83$ ,  $s.e. = 0.13$ ; Time 3 age: range=18-26 years,  $M = 21.29$ ,  $s.e. = 0.12$ ).

Ethnicity. Ethnicity is based on adolescent self-report of the racial category that best describes them. Responses include White (59.8%), Black (16.1%), Hispanic or Latino (10.3%), Asian or Pacific Islander (4.6%), and Other including American Indian or Native American (9.2%).

Ability. Ability is the adolescent's score on the Peabody Vocabulary Test (range=14-130,  $M = 102.18$ ,  $s.e. = 0.57$ ).

Mother's Education. Two sources for mothers' education are available: Adolescents were asked how far their mothers went in school and mothers who filled out a parent survey were asked how far they went in school. Mother data were utilized first and adolescent responses were used to supplement missing data. Responses were recoded into 1 (less than high school including no school; 14.0%), 2 (high school including GED and business, trade, or vocational school instead of high school; 33.6%), 3 (some college including business, trade, or vocational school after high school; 19.1%), 4 (college; 24.7%), and 5 (post college; 8.5%) ( $M =$  ,  $s.e. =$  ).

Family Income. Parental income was created from the parent survey using the following question: "how much total income before taxes did your family receive in 1994?" (range= \$0-\$999,000,  $M = \$45,839$ ,  $s.e. = \$1,385$ ).

Parental Involvement. The parental involvement scale is the summed scores of 18 questions; 9 activities shared with mothers and 9 activities shared with fathers in the past four weeks. Activities to be shared with each parent include shopping, playing a sport, going to a religious service or church-related event, "talked about someone you're dating or a party you went to", "gone to a movie, play, museum, concert, or sports events", "had a talk about a personal problem you were having", "talked about your school work or grades", "worked on a project for school", "talked about other things you're doing in school". ( $\alpha = 0.73$ , range= 0-18,  $M = 5.64$ ,  $s.e. = 0.09$ ).

Parent-Adolescent Conflict. Parent-adolescent conflict was measured using adolescents' reports of whether or not they argued with their mothers or fathers. It included the following items: "which of the things listed on this card have you done with

your mother in the past 4 weeks: had a serious argument about your behavior” and “which of the things listed on this card have you done with your father in the past 4 weeks: had a serious argument about your behavior.” The items were scored as either “0” (no) or “1” (yes) (range= 0-14, M= 2.55, s.e.= 0.09).

School Size. School size was coded 1 for small schools (1-400 students, 19.7%) or 0 for larger schools (80.3%).

School Attachment. Adolescents answered on a scale of 1 (strongly agree) to 5 (strongly disagree) 3 questions comprising the school attachment variable (see also Johnson, Crosnoe, & Elder, 2001). Questions include “you feel close to people at your school”, “you feel like part of your school”, and “you are happy to be at your school”. These items were reverse coded and summed so that high scores indicate more school attachment ( $\alpha = 0.79$ , range= 3-15, M= 11.43, s.e.= 0.06).

Time 1 & Time 2 Outcome Behavior. Time 1 depression, delinquency, alcohol use, and tobacco use were included in the models predicting Time 2 outcomes and Time 2 behaviors were included in the models predicting Time 3 outcomes. These measures were constructed in the same manner as the dependent variables described below.

#### *Additional Control Variables*

In the friendship section of the AddHealth in-school questionnaire, the respondent was asked to nominate up to five male and five female friends from the roster of all students enrolled in the respondent’s school and in the sister school. Once friends were nominated, the respondent entered each friend’s identification number on the questionnaire. In the event that their friend was not listed on the roster, respondents



indicated that the friend went to the school, the friend went to the sister school, or the friend did not attend either school. AddHealth makes it possible to identify both the respondent and the alters that they nominate as friends in order to examine the social networks in which the individuals are embedded.

Friends' substance use. Adolescents reported of their three best friends, how many drink alcohol at least once a month ( $M=1.00$ ,  $s.e.=0.04$ ) and how many smoke at least 1 cigarette a day ( $M=0.74$ ,  $s.e.=0.04$ ). Responses range from 0 (none of the adolescent's three best friends) to 3 (all three best friends).

Friend's delinquent activity. Using the social network data, the adolescents' friend's delinquent behavior was constructed in the same manner as the adolescent's delinquent behavior (range= 0-37,  $M= 4.19$ ,  $s.e.= 0.10$ ).

Friends' activity participation. Using the social network data, the adolescents' friend's activity participation was constructed as a continuous variable indicating the total number of activities in which the adolescents' friends participate (range= 0-31,  $M= 2.67$ ,  $s.e.= 0.06$ ).

### *Predictor Variables*

Activity Participation. Students were presented with a list of 33 clubs, organizations, and teams found at many schools and asked to mark all those activities that they "are participating in this year, or that you plan to participate in later in the school year". These activities include French, German, Latin, Spanish, Book, Computer, Drama, History, Math, and Science clubs, Band, chorus or choir, orchestra, debate team, cheerleading/dance team, other club or organization, baseball/softball, basketball, field

hockey, football, ice hockey, soccer, swimming, tennis, track, volleyball, wrestling, other sport, newspaper, honor society, student council, yearbook, and Future Farmers of America. Students were also asked to indicate if they “did not participate in any clubs, organizations, or teams at school.”

*Mutually Exclusive Groups.* Students who only participated in activities in one conceptual group were separated from students who participated in activities across conceptual groups. Because many students have diverse activity portfolios, this grouping style allows factors to be associated with specific types of participation rather than attributing factors that may be related to participating in several kinds of activities to one kind of activity in particular. This method also ensures that adolescents are never included more than once in a given group. This conceptual method includes Sports Activities Only, Academic Clubs Only, School Involvement Activities Only, Performance Activities Only, and Multiple Activity Types (diverse activity portfolios). For a list of activities that fall into each category see Table 3.2. Descriptive statistics for the study variables by activity group are presented in Table 3.3.

### *Dependent Variables*

Substance Use. At all three waves, adolescents were asked about alcohol and tobacco use. Alcohol use was captured in the question “During the past 12 month, on how many days did you drink alcohol?” Values are 0 (never), 1 (once a month or less), 2 (1 or 2 days in the last month), 3 (2 or 3 days a month), 4 (1 or 2 days a week), 5 (3 to 5 days a week), and 6 (everyday or almost every day) and treated as a continuous variable

(Time 1:  $M = 0.93$ ,  $s.e. = 0.04$ ; Time 2:  $M = 1.08$ ,  $s.e. = 0.04$ ; Time 3:  $M = 2.28$ ,  $s.e. = 0.06$  ).

Tobacco was captured in the questions “During the past 30 days, on how many days did you smoke cigarettes?” (Time 1: range= 0-30,  $M = 3.61$ ,  $s.e. = 0.35$ ; Time 2: range= ,  $M = 5.11$ ,  $s.e. = 0.38$ ; Time 3: range=0-30,  $M = 8.63$ ,  $s.e. = 0.34$ ).

Emotional well-being. At all three waves, adolescents were asked questions primarily drawn from the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), assessing their emotional state. Nine of the same questions were asked at all three waves and will be summed to form the depression scale. Questions include how often adolescents felt emotions such as “you were bothered by things that usually don’t bother you” and “you could not shake off the blues, even with help from your family and your friends” during the prior week. Responses on each question range from 0 (never or rarely) to 3 (most of the time or all of the time). Two questions indicating positive affect were reverse coded. (Time 1: range= 0-26,  $M = 5.57$ ,  $s.e. = 0.09$ ; Time 2: range= 0-26,  $M = 8.04$ ,  $s.e. = 0.05$ ; Time 3: range= 0-27,  $M = 7.89$ ,  $s.e. = 0.05$ ).

Delinquency. Based on items from the National Longitudinal Survey of Youth (NLS-Y), 7 questions at all three waves measured the extent to which adolescents engaged in delinquent behavior during the prior 12 months. The delinquency scale includes damaging property, going into a home or building to steal, stealing an item over \$50, threatening with a weapon, selling drugs, stealing items less than \$50, group fighting. Responses range from 0 (never) to 3 (5 or more times). Responses are 0 (not marked) and 1 (marked). All values were summed for a total delinquency score (Time 1:

range= 0-21, M= 1.12, s.e.= 0.05; Time 2: range= 0-21, M= 0.92, s.e.= 0.04; Time 3:  
range= 0-21, M= 0.64, s.e.= 0.03).

## ANALYSES

Zero-order correlations between the study variables are presented in Table 3.3. Several hierarchical regression analyses were conducted to identify possible main-effect or moderating relations between activity participation and the study variables. The analyses were separated into three phases. Phase 1 was devoted to obtaining an R squared statistic for all of the control variables in predicting alcohol use, tobacco use, depression, and delinquency. A core set of control variables associated with the outcomes and activity participation were included in each of the models including gender, age, race, ability, mother's education, family income, parental involvement, parent-adolescent conflict, school size, school attachment, friends' participation, and the outcome behavior from the previous data collection time point (Time 1 behavior in the Time 2 models and Time 2 behavior in the Time 3 models. Friends' behavior on the outcomes were included for the alcohol, tobacco, and delinquency models.

Phase 2 was devoted to testing the relation between activity participation (sports only, academics only, school involvement activities only, performance activities only, and multiple activity types) and the dependent variables over and above the control variables and whether any significant results here increased the R squared. Finally, Phase 3 was devoted to testing the moderating relationship between the types of activity participation and gender, parental involvement, school size, school attachment, and friends' participation, and the dependent variables. Only significant interactions are presented in the Phase 3 portions of the data tables. After the first set of analyses were performed, an additional analysis of the relationship between activity participation and

the 10% of alcohol use (5-6 days/week or almost everyday) using logistic regression was performed with the same controls from the other model to determine if activity participation was related to the most extreme levels of alcohol use.

## RESULTS

### *Activity Participation and Substance Use*

Alcohol Use. Age, Black, Hispanic, Asian, Other, ability, Time 1 alcohol use, and friends' alcohol use were significantly associated with Time 2 alcohol use (Table 3.5). The control variables accounted for 33% of the variance. Performance activity participation was associated with Time 2 alcohol use in the main effects model ( $\beta = -.17$ ,  $p \leq .05$ ), negatively predicting alcohol use. The variance accounted for did not change with the addition of the participation variables. When the interaction terms were included in the model, performance activity participation was no longer significant and sports participation became significantly positively associated with Time 2 alcohol use ( $\beta = .15$ ,  $p \leq .05$ ). Two interaction terms were marginally significant in the Time 2 alcohol use model including school attachment by sports ( $\beta = .06$ ,  $p \leq .10$ ) and parental involvement by sports ( $\beta = .04$ ,  $p \leq .10$ ). The interaction terms indicate that sports participants use alcohol as frequently regardless of school attachment (high or low) and regardless of parental involvement (high or low). Both school attachment and parental involvement drive the relationship between non-sports participants however, adolescents who do not participate in sports drink much more frequently when they have low school attachment, and much less than even sports participants when they have high school attachment (Figure 3.1). Adolescents with low parental involvement drink more frequently than those with high parental involvement but neither as frequently as sports participants (Figure 3.2). The addition of interaction terms did not significantly increase the variance accounted for from the main-effect models.

Gender, Black, Asian, ability, mother's education, family income, school size, school attachment, Time 2 alcohol use, and friends' alcohol use were significantly associated with Time 3 alcohol use accounting for 21% of the variance (Table 3.6). Both sports and multiple activity type participation were associated with Time 3 alcohol use in the main effects and interaction models. Several interaction terms were significant in predicting Time 3 alcohol use particularly regarding school size. They including female by school involvement participation ( $\beta = 1.08, p \leq .001$ ), school size by sports ( $\beta = -.43, p \leq .05$ ), school size by academic club participation ( $\beta = -1.03, p \leq .001$ ), school size by performance activity participation ( $\beta = -.57, p \leq .05$ ), and school size by multiple activity type participation ( $\beta = -.36, p \leq .05$ ). The gender by school involvement activity participation term indicates that females drink similarly regardless of school involvement participation. Participation drives the relationship for male drinking however in that males in school involvement activities drink the least of all four groups while males not in school involvement activities drink the most. The school size interaction terms suggest an interesting pattern. Adolescents who attend large schools drink more than adolescents who attend small schools. However, adolescents who do not participate in academic clubs or performance activities in large schools drink the most frequently, adolescents in sports or multiple activity types in large schools also drink the most frequently. This pattern among the activities holds for small schools as well. Examples of the relationship between non-academic club and non-performance activities to Time 3 drinking and sports and multiple activity type participation to Time 3 drinking are



presented in Figures 3.3 and 3.4. The addition of the moderators increased the variance explained from the main-effect model, but not significantly.

Gender, age, Black, Asian, mother's education, school size, Time 2 alcohol use, and friends' alcohol use were significantly related to the top 10% of alcohol use at Time 3 ( $F=12.12, p<.001$ ). Sports participation ( $\beta = .46, p \leq .01$ ) and multiple activity type participation ( $\beta = .39, p \leq .05$ ) were both positively related to extreme alcohol use (Table 3.7).

Tobacco Use. Black, Asian, ability, family income, parent-adolescent conflict, school attachment, Time 1 tobacco use, and friends' tobacco use were significantly associated with Time 2 tobacco use as shown in Table 3.8. The control variables accounted for 48% of the variance. In the second phase of the model, participation in performance activities ( $\beta = -1.29, p \leq .01$ ), and multiple activity types ( $\beta = -.96, p \leq .05$ ), was associated with less tobacco use at Time 2, again accounting for 48% of the variance together with the control variables. There were no significant interaction terms for Time 2 tobacco use.

Gender, age, Black, Hispanic, Time 2 tobacco use, and friends' tobacco use were significantly associated with Time 3 tobacco use (Table 3.9). The control variables accounted for 25% of the variance. No type of activity participation was associated with Time 3 tobacco use in the main effects model nor did the variance accounted for change with the addition of the participation variables. Two interaction variables were significant in the third phase of the analysis. Gender by school involvement activities only ( $\beta = -.96, p \leq .05$ ) and friends' activity participation by academic club only

participation ( $\beta = -.96, p \leq .05$ ) were significantly related to Time 3 tobacco use and increased the variance explained from the main-effect model but not significantly. The pattern for tobacco use by gender is the same pattern as Time 3 drinking by gender and school involvement activity participation. Females smoke with similar frequency regardless of participation, males however who participate in school involvement activities smoke the least and males not in these activities smoke the most, as much as girls in school involvement activities (see Figure 3.5). In regard to friends' participation and academic club participation, adolescents whose friends participate in more activities smoke less than adolescents whose friends participate in fewer activities. However, adolescents who are in academic clubs and have friends who participate in more activities, smoke the least frequently of the groups (see Figure 3.6).

#### *Activity Participation and Emotional Well-being (Depression)*

Gender, age, Black, ability, parent-adolescent conflict, and Time 1 depression were significantly related to Time 2 depression. The control variables accounted for 17% of the variance. There were no main effects of activity participation for Time 2 depression and no increase in the variance accounted for. There were three significant interaction effects including small school by performance activity participation ( $\beta = -1.00, p \leq .05$ ), school attachment by multiple activity type participation ( $\beta = .10, p \leq .10$ ), and parental involvement by multiple activity type participation ( $\beta = -.08, p \leq .10$ ) as demonstrated in Table 3.10. In each case, adolescents who attend larger schools, have low school attachment, and low parental involvement have higher levels of depression

(see Figures 3.7-3.9). However, participation in performance activities in small schools is related to low levels of depression while multiple activity type participation among adolescents with high school attachment and among adolescents with high parental involvement is still related to higher levels of depression (although not as high as adolescents scoring low on school attachment and parental involvement). The addition of the interaction terms did not significantly increase the variance explained from the main effects models.

Gender, age, Other, and Time 2 depression were significantly related to Time 3 depression, accounting for 7% of the variance (Table 3.11). There were no main effects of activity participation for Time 3 depression and no increase in the variance accounted for. Again, there were three significant interaction effects regarding school size including small school by sports participation ( $\beta = 0.63, p \leq .05$ ), small school by academics only participation ( $\beta = 1.39, p \leq .01$ ), and small school by multiple activity type participation ( $\beta = 0.66, p \leq .05$ ). As opposed to Time 2, at Time 3, having attended a small school was related to higher depression levels than having attended a large school. Prior participation in academic clubs and multiple activity types in small schools is related to the highest level of Time 3 depression (see Figures 3.10 & 3.11), however prior sports participation in small schools was related to lower depression levels and sports participation in larger schools was related to the lowest level of depression (see Figure 3.12). The addition of the interaction terms did not significantly increase the variance explained from the main effects models.

### *Activity Participation and Delinquency*

Gender, age, ability, parent-adolescent conflict, Time 1 delinquency, and friends' delinquency were significantly associated with Time 2 delinquency as shown in Table 3.12. The control variables accounted for 28% of the variance. Academic club only and performance activity only participation were also significantly related to Time 2 delinquency although the variance explained did not change with their addition to the model. Adolescents who reported participating in academic clubs ( $\beta = -.30, p \leq .01$ ) or in performance activities ( $\beta = -.25, p \leq .05$ ) also reported less delinquency, accounting for 28% of the variance together with the control variables. Three interactions were significantly related to Time 2 delinquency including school attachment by performance activities only participation ( $\beta = .08, p \leq .05$ ), parental involvement by sports only participation ( $\beta = .07, p \leq .05$ ), and parental involvement by academic club only participation ( $\beta = .10, p \leq .05$ ). A similar pattern emerges for school attachment and parental involvement in regard to activity participation. Non-performance activity and non-academic club participation is related to higher levels of delinquency regardless of level of school attachment and parental involvement. However, low school attachment and low parental involvement coupled with non-performance and non-academic participation is related to the highest levels of delinquent behavior (see Figures 3.13 & 3.14). In the other interaction, sports participation is related to higher levels of delinquency and particularly in the presence of low parental involvement (see Figure 3.15). The regression equation including interaction terms accounted for 29% of the

variance in delinquent behavior, which was not a significant increase from the variance accounted for by the main effect only models.

Gender, age, ability, mother's education, Time 2 delinquency, and friends' delinquency were significantly related to Time 3 delinquency accounting for 10% of the variance (Table 3.13). There were no main effects of activity participation for Time 3 delinquency and no increase in the variance explained. One interaction term, parental involvement by school involvement only participation was significantly related to Time 3 delinquency ( $\beta = .06, p \leq .05$ ). Specifically, prior non-school involvement activity participation regardless of parental involvement, and prior school involvement participation in a high parental involvement context, is related to high Time 3 delinquency. Prior school involvement participation with low parental involvement is related to the lowest Time 3 delinquency (Figure 3.16). The addition of the interaction terms did not increase the variance accounted for by the main effects models.

## **DISCUSSION**

The goal of this chapter was to examine whether adolescent activity participation is related to substance use, emotional well-being, and delinquency in the transition to adulthood, one year and six years into the longitudinal study, controlling for other factors related to both participation and the outcomes and whether the relationship between activity participation and these outcomes varies by type of activity. Activity participation was significantly related to the outcomes at Time 2 with the exception of depression and not directly related to the outcomes at Time 3 with the exception of alcohol use. As expected, activity participation was related to all outcomes at both time points through moderator variables including school size, school attachment, and parental involvement. Relationships varied by activity type.

The findings from this study suggest a dynamic role of activity participation in the transition to adulthood. At Time 2, while the adolescents are still in school and may still be participating in their extracurricular activities, the relationship of participation to the outcomes is more direct, activities significantly relate to the outcomes above other controls. At Time 3, when the once adolescents are now adults, the relationship of prior activity participation to current behavioral and emotional well-being vary according to the contexts in which participation took place and the type of activity. The relationship between activity participation and trajectories into young adulthood are far too complex to untangle in the scope of this study, however some important relationships have been discovered. The current study exposed the importance of school structure and family

characteristics for their roles in shaping the experience of adolescents' activity participation which together, are related to young adult outcomes.

School size and school attachment are particularly important factors to consider in examining activity participation given their moderation of several of the activity types. Sports and multiple activity type participation were related to more drinking in large schools compared with small schools. Multiple activity type and academic club participation was related to increased depression in small schools while sports participation was related to less depression in both size schools, but particularly in large schools. Clearly school characteristics are influential in how adolescents experience activity participation. Small schools may provide high achievers such as academic club and multiple activity participants more opportunities to excel, however, once these adolescent become adults there may not be as many opportunities or they may not receive the prestige they had in smaller schools which may lead to higher levels of young adult depression.

Sports participants on the other hand are said to associate with more socially-active friends (Crosnoe, 2001). Therefore athletes may have more resources to draw upon for countering depressed mood, particularly those that attended larger schools and may have larger social networks as young adults. While some researchers have suggested the value of examining participation in the context of school factors (Hanks & Eckland, 1976; Lareau, 1987; McNeal, 1999; Otto, 1975, 1976; Spady 1970, 1971; Snyder, 1969) little attention has been focused on this line of inquiry thus far. Future research incorporating school-level variables such as these, as well as school-level

participation and school-levels of the outcome variables will be particularly meaningful in really informing the field of adolescent development.

Sports participation and multiple activity type participation were related to higher levels of drinking at both time points, and to the highest levels of drinking at Time 3. Sports participants drank very frequently regardless of school attachment or parental involvement, factors which in combination with other types of activity participation were protective against depression and delinquent behaviors (at Time 2). These findings suggest that the trajectories of sports participants are quite different from those of other kinds of activity participants. While both sports participation and multiple activity type participation are related to higher frequencies of alcohol use, sports participants are not as depressed in young adulthood as multiple activity participants are. This finding is somewhat surprising given that these two groups have very similar behaviors in regard to substance use outcomes but their emotional health is quite different in the transition to adulthood. Thus, activity participation for certain groups may be related to similar outcomes in one aspect of young adults' lives but very different outcomes in other areas.

Contrary to my expectations, friends' participation was not a strong moderator of participation. These findings may be due to the variable used, total friends' activity participation rather than friends' participation in the target adolescent's activity. Mahoney's work (2000) has related friends' participation in general to an individual's behavior but it is possible that a stronger factor is friends' participation in the adolescent's own activity. Other researchers have linked an individual's behavior to friends' participation in the same activities (Dishion, McCord, & Poulin, 1999). Such



data might provide a better examination of the relations studied here. Another explanation for the lack of moderation may be the strong direct relationship of friends' participation and friends' behavior in each of the adolescent's outcomes. These findings support the theory of strong social norms in association with adolescent activity participation and demonstrate the importance of considering the peer context in activity examinations.

The findings from this study also suggest a dual nature of activity participation in regard to its relation to gender and has implications for social norms. The interaction between gender and school involvement activity participation indicated that participation was related to high levels of tobacco and alcohol use among females and very low levels of tobacco and alcohol use among males. The finding suggests that activity participation may be a protective factor for males but may draw females into more problematic behaviors. While gender-participation interactions in this study were not significant for other types of activities, examination of the genders separately in relation to activity participation may uncover useful findings about the developmental significance of participation by group.

Finally, this study provides evidence that the developmental significance of participation differs by activity type. Additional evidence to very different nature of activity participation is the different factors related to different activities. Parental involvement and school attachment are protective factors for multiple activity type participants in regard to depression while parental involvement is a protective factor for sports participants in regard to delinquency. These factors have no relationship to sports

participants' levels of drinking but do for non-participants. In fact, parental involvement, school attachment, and school size were all fairly protective factors for substance use, depression, and delinquency outcomes of non-participants. High parental involvement for school involvement activity participants however, was related to much higher delinquency than low parental involvement at Time 3. While it could be argued that more parental involvement is a function of the delinquency, these individuals are now young adults. They are no longer participating in school involvement activities and their parents are probably not as likely to intervene in their delinquent behavior at this point as they were during adolescence. Clearly, the same contextual factors affect different activities in developmentally significant yet different ways.

In summary, the role of school-based extracurricular activity participation in the transition to adulthood is quite complicated and much more research is needed to untangle the complexities. Whether a result of selection or causation, and this study is not equipped to address such issues, the trajectories of activity participants differ by type of participation, type of individual, and the context of such participation. Certain kinds of activity participation were directly related to Time 2 outcomes and the relationship of participation to Time 3 outcomes was mostly moderated through school and family factors. Friend's participation and friend's own substance use and delinquent behavior were related to individual's outcomes during the transition to adulthood. This study emphasizes the importance of examining activity participation in concert with other developmental contexts.

Table 3.1

*Sample Characteristics of Participants Included in Multinomial Logistic Regression Analyses of Extracurricular Activity Participation (non-weighted data)*

		Included Participants ( <u>n</u> = 7998)		Excluded Participants ( <u>n</u> = 12,747)		$\chi^2$
		<u>n</u>	%	<u>n</u>	%	
Gender						50.54***
	Male	3708	46.4	6555	51.4	
	Female	4290	53.6	6190	48.6	
Race						50.83***
	White	4211	52.7	6244	49.0	
	Black	1653	20.7	2809	22.1	
	Hispanic	545	6.82	1066	8.37	
	Asian	649	8.12	905	7.11	
	Other	936	11.7	1706	13.4	
School Urbanicity						130.94***
	Urban	2160	27.0	3924	31.7	
	Suburban	4286	53.6	6738	54.5	
	Rural	1551	19.4	1710	13.8	
School Region						26.43***
	West	1804	22.6	3137	25.4	
	Midwest	1983	24.8	2810	22.7	
	South	3063	38.3	4609	37.3	
	Northeast	1147	14.3	1816	14.7	
School Size						178.70***
	Small	1346	16.8	1528	12.4	
	Medium	3148	39.4	4300	34.8	
	Large	3503	43.8	6544	52.9	
		<u>M</u>	<u>SE</u>	<u>M</u>	<u>SE</u>	<u>T</u>
Age		15.72	1.55	16.44	1.76	30.60***
Family Income		\$47,147	\$634	\$44,750	\$551	-2.828**

\*\*\*p< 0.001 \*\*p< 0.01

Table 3.2

*Mutually Exclusive Grouping of AddHealth Activities*

Sports Only	Academic Clubs Only	Performance Activities Only	School Involvement Activities Only	Multiple Activity Types
Cheerleading	Debate Team	Band	Student Council	More than one activity crossing conceptual groups (sports, academic, performance, school involvement)
Baseball/Softball	French Club	Drama	Yearbook	
Basketball	German Club	Chorus/Choir	Newspaper	
Field Hockey	Latin Club	Orchestra		
Football	Spanish Club			
Ice Hockey	Book Club			
Soccer	Computer Club			
Swimming	History Club			
Tennis	Math Club			
Track	Science Club			
Volleyball	Honor Society			
Wrestling				
Other Sport				

Table 3.3

*Descriptive Statistics of all Study Variables by Activity Type*

Variables	Weighted Means and Standard Errors				
	School				Non-Participation (n=1231)
	Sports Only (n=2208)	Academic Only (n=288)	Involvement Only (n=127)	Performance Only (n=509)	Multiple Activities (n=3635)
Gender (female)	0.34 (0.01)	0.57 (0.04)	0.68 (0.06)	0.63 (0.03)	0.57 (0.01)
Wave 2 Age	15.92 (0.13)	16.08 (0.21)	15.95 (0.27)	15.53 (0.15)	15.75 (0.13)
Wave 3 Age	21.36 (0.13)	21.51 (0.22)	21.45 (0.22)	20.97 (0.16)	21.19 (0.12)
Black	0.17 (0.03)	0.17 (0.04)	0.14 (0.04)	0.14 (0.03)	0.16 (0.02)
Hispanic	0.10 (0.02)	0.18 (0.04)	0.08 (0.03)	0.06 (0.01)	0.10 (0.01)
Asian	0.04 (0.01)	0.08 (0.02)	0.09 (0.04)	0.04 (0.01)	0.05 (0.01)
Other	0.09 (0.01)	0.13 (0.03)	0.04 (0.02)	0.05 (0.01)	0.09 (0.01)
Ability	100.3 (0.70)	101.2 (1.50)	102.9 (1.61)	104.2 (0.90)	103.8 (0.65)
Mother's education	2.72 (0.05)	2.49 (0.11)	2.72 (0.17)	2.89 (0.07)	2.97 (0.05)
Family income	45841(1467)	38845(2021)	39455(2734)	42500 (1663)	48762 (1837)
Parental involvement	5.50 (0.11)	5.34 (0.21)	5.23 (0.33)	5.37 (0.19)	6.12 (0.12)
Parent-adolescent conflict	2.50 (0.12)	2.80 (0.28)	2.62 (0.41)	2.69 (0.21)	2.38 (0.11)
School size (small)	0.23 (0.04)	0.22 (0.06)	0.12 (0.04)	0.18 (0.05)	0.20 (0.04)
School attachment	11.58 (0.08)	11.27 (0.22)	11.24 (0.34)	10.98 (0.17)	11.78 (0.06)
Wave 1 alcohol use	1.03 (0.08)	0.75 (0.10)	1.00 (0.17)	0.63 (0.06)	0.88 (0.05)
Wave 2 alcohol use	1.21 (0.07)	0.79 (0.10)	1.00 (0.16)	0.69 (0.07)	1.05 (0.05)
Wave 3 alcohol use	2.83 (0.07)	2.63 (0.17)	3.33 (0.24)	3.07 (0.13)	2.99 (0.06)
Wave 1 tobacco use	3.66 (0.51)	2.44 (0.48)	4.53 (1.22)	3.64 (0.66)	2.79 (0.26)
Wave 2 tobacco use	5.20 (0.54)	4.05 (0.72)	5.03 (1.21)	4.81 (0.77)	4.12 (0.30)
Wave 3 tobacco use	8.84 (0.63)	7.20 (0.95)	7.18 (1.47)	9.01 (0.74)	7.86 (0.39)
					11.01 (0.65)

Table 3.3 Continued...

Weighted Means and Standard Errors						
Variables	School					Non- Participation (n=1231)
	Sports Only (n=2208)	Academic Only (n=288)	Involvement Only (n=127)	Performance Only (n=509)	Multiple Activities (n=3635)	
Wave 1 depression	5.37 (0.13)	5.08 (0.35)	6.15 (0.46)	5.74 (0.21)	5.30 (0.13)	6.77 (0.18)
Wave 2 depression	7.77 (0.08)	7.73 (0.24)	8.92 (0.41)	8.06 (0.15)	8.09 (0.07)	8.36 (0.13)
Wave 3 depression	7.82 (0.08)	7.76 (0.22)	7.74 (0.31)	8.08 (0.15)	7.91 (0.07)	7.96 (0.14)
Wave 1 delinquency	1.33 (0.09)	0.83 (0.13)	0.96 (0.23)	0.87 (0.10)	0.94 (0.05)	1.39 (0.11)
Wave 2 delinquency	1.04 (0.07)	0.55 (0.12)	0.80 (0.25)	0.61 (0.07)	0.86 (0.04)	1.14 (0.10)
Wave 3 delinquency	0.78 (0.05)	0.45 (0.12)	0.29 (0.14)	0.55 (0.14)	0.62 (0.04)	0.57 (0.05)
Friends' alcohol use	1.06 (0.06)	0.76 (0.09)	1.01 (0.14)	0.78 (0.07)	0.93 (0.05)	1.21 (0.05)
Friends' tobacco use	0.70 (0.05)	0.70 (0.09)	0.74 (0.13)	0.72 (0.08)	0.63 (0.03)	1.15 (0.05)
Friends' activity participation	2.66 (0.08)	2.61 (0.14)	(2.59 (0.15)	2.45 (0.10)	2.87 (0.07)	2.18 (0.09)

Table 3.4

*Pair-wise Correlations for All Study Variables (non-weighted data)*

Variable	1.	2.	3.	4.	5.	6.	7.	8.
Gender (female)	1.00							
Age	-.07***	1.00						
Black	.05	-.01	1.00					
Hispanic	-.02	.08***	-.19***	1.00				
Asian	-.03**	.06***	-.14***	-.08***	1.00			
Other	.01	.05***	-.11***	.54***	-.08***	1.00		
Ability	-.07***	-.06***	-.23***	-.18***	-.03**	-.13***	1.00	
Mother's education	.03**	-.01	.12***	.05***	-.04***	.04***	-.16***	1.00
Family income	-.00	.01	-.10***	-.09***	.03*	-.05***	.22***	-.18***
Parental involvement	.05***	-.09***	-.09***	-.04***	-.02	-.03**	.13***	-.13***
School size (small)	.03**	-.20***	.01	-.12***	-.12***	-.06***	.01	.03**
School attachment	-.03*	-.09***	-.05***	-.01	-.01	-.04***	.03**	-.04***
Friends' alcohol use	-.03*	.28***	-.06***	.01	.01***	.04***	.01	.02+
Friends' tobacco use	-.02*	.18***	-.13***	-.01	-.01***	.03*	-.07***	.07***
Friends' delinquency	-.03*	.02*	-.01	.06***	.06+	.08***	-.04***	.02+
Friends' activity participation	-.04*	-.13***	-.02	-.10***	-.10**	-.05***	.11***	-.06***

Table 3.4 continued...

Variable	9.	10.	11.	12.	13.	14.	15.	16.
Family income	1.00							
Parental involvement	.15***	1.00						
School size (small)	.02	.03*	1.00					
School attachment	.03*	.19***	.07***	1.00				
Friends' alcohol use	.03**	-.09***	-.05***	-.13***	1.00			
Friends' tobacco use	-.04**	-.13***	-.04***	-.17***	.51***	1.00		
Friends' delinquency	-.02	-.04***	-.07***	-.05***	.08***	.10***	1.00	
Friends' activity participation	.08***	.09***	.09***	.06***	-.06***	-.09***	-.03**	1.00



Table 3.5

*Weighted Hierarchical Regression Analyses Predicting Time 2 Alcohol Use*

Predictor Variable	$\beta$ (SE B)	$\beta$ (SE B)	$\beta$ (SE B)
Phase 1			
Gender (female)	-0.03 (0.04)	-0.01 (0.04)	-0.01 (0.04)
Age at Time 2	0.06 (0.01)***	0.06 (0.01)***	0.01 (0.02)***
Black	-0.28 (0.06)***	-0.29 (0.05)***	-0.28 (0.05)***
Hispanic	0.13 (0.07)*	0.14 (0.07)*	0.15 (0.07)*
Asian	-0.16 (0.07)*	-0.16 (0.06)*	-0.14 (0.06)*
Other	-0.17 (0.08)*	-0.17 (0.07)*	-0.17 (0.07)*
Ability	0.00 (0.00)**	0.00 (0.00)**	0.0 (0.00)**
Mother's education	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Family income	0.00 (0.00)	- 0.00 (0.00)	0.00 (0.00)
Parental involvement	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Parent-adolescent conflict	0.01 (0.01)	0.01 (0.01)+	0.01 (0.01)+
School size (small)	0.02 (0.11)	0.02 (0.06)	0.02 (0.06)
School attachment	-0.02 (0.01)	0.00 (0.01)	0.00 (0.01)
Time 1 alcohol use	0.46 (0.03)***	0.46 (0.03)***	0.46 (0.03)***
Friends' alcohol use	0.23 (0.03)***	0.23 (0.03)***	0.23 (0.03)***
Friends' participation	0.01 (0.02)	0.01 (0.01)	0.01 (0.01)
Phase 2			
Sports only		0.07 (0.06)	0.15 (0.06)*
Academics only		-0.15 (0.11)	-0.05 (0.11)
School only		-0.16 (0.13)	-0.12 (0.12)
Performance only		-0.17 (0.08)*	-0.10 (0.08)
Multiple types		0.01 (0.06)	0.08 (0.06)
Phase 3			
School attachment x sports			0.06 (0.03)+
Parental involvement x sports			0.04 (0.02)+
$R^2=$	0.33	0.33	0.34
$F=$	94.10***	79.90***	45.41***
$df=$	16 , 106	21 , 101	47 , 75
+p $\leq$ 0.10 *p $\leq$ 0.05 **p $\leq$ 0.01 ***p $\leq$ 0.001			

Table 3.6

*Weighted Hierarchical Regression Analyses Predicting Time 3 Alcohol Use*

Predictor Variable	$\beta$ (SE B)	$\beta$ (SE B)	$\beta$ (SE B)
Phase 1			
Gender (female)	-0.52 (0.05)***	-0.49 (0.05)***	-0.49 (0.05)***
Age at Time 3	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)
Black	-0.59 (0.08)***	-0.60 (0.08)***	-0.59 (0.08)***
Hispanic	-0.09 (0.09)	-0.08 (0.09)	-0.07 (0.09)
Asian	-0.33 (0.11)**	-0.33 (0.11)**	-0.33 (0.11)**
Other	-0.06 (0.09)	-0.06 (0.09)	-0.06 (0.09)
Ability	0.02 (0.00)***	0.02 (0.00)***	0.02 (0.00)***
Mother's education	0.11 (0.02)***	0.12 (0.02)***	0.11 (0.02)***
Family income	0.00 (0.00)***	0.00 (0.00)***	0.00 (0.00)***
Parental involvement	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Parent-adolescent conflict	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
School size (small)	-0.39 (0.10)***	-0.40 (0.10)***	-0.38 (0.09)***
School attachment	0.02 (0.01)*	0.02 (0.01)+	0.02 (0.01)*
Time 2 alcohol use	0.28 (0.02)***	0.28 (0.02)***	0.28 (0.02)***
Friends' alcohol use	0.09 (0.03)**	0.09 (0.03)**	0.09 (0.03)***
Friends' participation flag	-0.22 (0.05)*	-0.21 (0.05)***	-0.20 (0.05)***
Friends' participation	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)
Phase 2			
Sports only		0.31 (0.08)***	0.34 (0.08)***
Academics only		-0.08 (0.15)	-0.05 (0.15)
School only		-0.15 (0.14)	-0.20 (0.15)
Performance only		0.20 (0.12)	0.23 (0.12)+
Multiple types		0.21 (0.08)**	0.23 (0.08)**
Phase 3			
Female x school			1.08 (0.32)***
School attachment x school involvement			0.09 (0.04)*
School size x sports			-0.43 (0.20)*
School size x academic clubs			-1.03 (0.31)***
School size x performance activities			-0.57 (0.28)*
School size x multiple activity types			-0.36 (0.17)*
$R^2=$	0.21	0.21	0.22
$F=$	62.58***	49.24***	30.28***
$df=$	17, 105	22, 100	47, 75
+ $p \leq 0.10$ * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$			

Table 3.7

*Weighted Logistic Regression Analyses Predicting Top 10% Alcohol Use at Time 3*

Predictor Variable	$\beta$ (SE B)
Phase 1	
Gender (female)	-1.02 (0.14)***
Age at Time 3	-0.06 (0.14)***
Black	-0.35 (0.17)*
Hispanic	-0.25 (0.25)
Asian	-0.67 (0.30)*
Other	-0.06 (0.20)
Ability	0.01 (0.01)+
Mother's education	0.11 (0.05)*
Family income	0.00 (0.00)+
Parental involvement	0.00 (0.02)
Parent-adolescent conflict	-0.01 (0.02)
School size (small)	-0.35 (0.14)*
School attachment	-0.02 (0.02)
Time 2 alcohol use	0.29 (0.03)***
Friends' alcohol use	0.14 (0.05)**
Phase 2	
Sports only	0.46 (0.16)**
Academics only	-0.18 (0.38)
School only	-0.60 (0.56)
Performance only	0.23 (0.27)
Multiple types	0.39 (0.17)*
<i>F</i> =	12.12***
+ $p \leq 0.10$ * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$	

Table 3.8

*Weighted Hierarchical Regression Analyses Predicting Time 2 Tobacco Use*

Predictor Variable	$\beta$ (SE B)	$\beta$ (SE B)
Phase 1		
Gender (female)	0.22 (0.27)	0.33 (0.28)
Age at Time 2	0.15 (0.08)+	0.14 (0.08)
Black	-1.87 (0.29)***	-1.83 (0.29)***
Hispanic	-0.66 (0.46)	-0.64 (0.46)
Asian	-1.12 (0.30)***	-1.08 (0.30)***
Other	-0.19 (0.44)	-0.23 (0.45)
Ability	0.02 (0.01)*	0.02 (0.01)*
Mother's education	-0.13 (0.10)	-0.10 (0.10)
Family income	-0.01 (0.00)**	-0.01 (0.00)**
Parental involvement	0.03 (0.04)	0.04 (0.04)
Parent-adolescent conflict	0.08 (0.04)*	0.08 (0.04)*
School size (small)	0.32 (0.36)	0.33 (0.36)
School attachment	-0.12 (0.04)**	-0.11 (0.05)
Time 1 tobacco use	0.66 (0.02)***	0.65 (0.02)***
Friends' tobacco use	1.61 (0.19)***	1.59 (0.19)***
Friends' participation	0.02 (0.11)	0.03 (0.11)
Phase 2		
Sports only		-0.41 (0.39)
Academics only		-0.83 (0.74)
School only		-1.59 (0.98)
Performance only		-1.29 (0.48)**
Multiple types		-0.96 (0.41)*
$R^2=$	0.48	0.48
$F=$	209.65***	160.88***
$df=$	16 , 106	21 , 101
+p $\leq$ 0.10 *p $\leq$ 0.05 **p $\leq$ 0.01 ***p $\leq$ 0.001		

Table 3.9

*Weighted Hierarchical Regression Analyses Predicting Time 3 Tobacco Use*

Predictor Variable	$\beta$ (SE B)	$\beta$ (SE B)	$\beta$ (SE B)
Phase 1			
Gender (female)	-1.58 (0.34)***	-1.58 (0.36)***	-1.61 (0.36)***
Age at Time 3	-0.81 (0.11)***	-0.81 (0.11)***	-0.81 (0.11)***
Black	-3.00 (0.57)***	-2.99 (0.57)	-3.05 (0.56)***
Hispanic	-2.20 (0.91)*	-2.19 (0.91)*	-2.23 (0.94)*
Asian	-1.17 (0.96)	-1.15 (0.96)	-1.15 (0.91)
Other	-0.25 (0.78)	-0.26 (0.78)	-0.22 (0.79)
Ability	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)
Mother's education	-0.15 (0.18)	-0.14 (0.19)	-0.14 (0.19)
Family income	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.00)
Parental involvement	-0.09 (0.06)	-0.09 (0.06)	-0.08 (0.06)
Parent-adolescent conflict	0.07 (0.06)	0.07 (0.06)	0.08 (0.06)
School size (small)	0.64 (0.58)	0.66 (0.58)	0.76 (0.56)
School attachment	-0.09 (0.08)	-0.08 (0.09)	-0.08 (0.09)
Time 2 tobacco use	0.55 (0.02)***	0.55 (0.02)***	0.54 (0.02)***
Friends' tobacco use	0.89 (0.23)***	0.88 (0.23)***	0.89 (0.22)***
Friends' participation flag	-0.68 (0.35)+	-0.69 (0.34)*	-0.71 (0.34)*
Friends' participation	-0.05 (0.11)	-0.05 (0.11)	-0.05 (0.11)
Phase 2			
Sports only		-0.35 (0.81)	-0.76 (0.72)
Academics only		-0.66 (1.02)	-1.35 (1.06)
School only		-1.23 (1.56)	-3.03 (1.38)
Performance only		-0.02 (0.84)	-0.58 (0.87)
Multiple types		-0.36 (0.70)	-0.87 (0.67)
Phase 3			
Gender x school			6.64 (2.70)*
Friends' participation x academics			-1.18 (0.54)*
$R^2=$	0.25	0.25	0.26
$F=$	74.12***	65.16***	31.01***
$df=$	17 , 105	22 , 100	47 , 75
+p $\leq$ 0.10 *p $\leq$ 0.05 **p $\leq$ 0.01 ***p $\leq$ 0.001			

Table 3.10

*Weighted Hierarchical Regression Analyses Predicting Time 2 Depression*

Predictor Variable	$\beta$ (SE B)	$\beta$ (SE B)	$\beta$ (SE B)
Phase 1			
Gender (female)	0.59 (0.09)***	0.56 (0.09)***	0.55 (0.09)***
Age at Time 2	0.12 (0.03)***	0.12 (0.03)***	0.13 (0.03)***
Black	0.49 (0.11)***	0.49 (0.11)***	0.48 (0.11)***
Hispanic	-0.19 (0.18)	-0.20 (0.18)	-0.21 (0.17)
Asian	0.05 (0.18)	0.03 (0.18)	0.03 (0.18)
Other	0.17 (0.18)	0.17 (0.18)	0.18 (0.18)
Ability	0.01 (0.00)**	0.01 (0.00)**	0.01 (0.00)**
Mother's education	0.02 (0.03)	0.02 (0.03)	0.02 (0.03)
Family income	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Parental involvement	0.03 (0.02)+	0.03 (0.02)+	0.03 (0.02)+
Parent-adolescent conflict	0.04 (0.02)*	0.04 (0.02)*	0.04 (0.02)*
School size (small)	-0.11 (0.11)	-0.10 (0.11)	-0.09 (0.11)
School attachment	-0.03 (0.02)	-0.03 (0.02)	-0.02 (0.02)
Time 1 depression	0.26 (0.01)***	0.26 (0.01)***	0.26 (0.01)***
Friends' participation flag	0.18 (0.09)+	0.18 (0.09)+	0.15 (0.09)+
Friends' participation	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
Phase 2			
Sports only		-0.13 (0.14)	-0.14 (0.16)
Academics only		-0.32 (0.27)	-0.31 (0.27)
School only		0.56 (0.37)	0.78 (0.45)+
Performance only		-0.15 (0.17)	-0.13 (0.19)
Multiple types		0.04 (0.14)	0.03 (0.16)
Phase 3			
School attachment x multiple activity types			0.10 (0.05)+
Parental involvement x multiple activity types			-0.08 (0.04)+
Small school x performance			-1.00 (0.47)*
$R^2=$	0.17	0.17	0.18
$F=$	57.20***	44.52***	23.28***
$df=$	16 , 106	21 , 101	46 , 76
+p $\leq$ 0.10 *p $\leq$ 0.05 **p $\leq$ 0.01 ***p $\leq$ 0.001			

Table 3.11

*Weighted Hierarchical Regression Analyses Predicting Time 3 Depression*

Predictor Variable	$\beta$ (SE B)	$\beta$ (SE B)	$\beta$ (SE B)
Phase 1			
Gender (female)	0.43 (0.08)***	0.44 (0.08)***	0.45 (0.08)***
Age at Time 3	-0.09 (0.03)**	-0.09 (0.03)**	-0.09 (0.03)**
Black	0.04 (0.12)	0.04 (0.12)	0.04 (0.12)
Hispanic	-0.11 (0.15)	-0.10 (0.15)	-0.10 (0.15)
Asian	-0.03 (0.14)	-0.02 (0.14)	-0.00 (0.13)
Other	0.33 (0.15)*	0.32 (0.15)*	0.33 (0.16)*
Ability flag	-0.37 (0.18)*	-0.37 (0.18)*	-0.38 (0.18)*
Ability	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Mother's education	-0.03 (0.04)	-0.04 (0.04)	-0.04 (0.04)
Family income flag	-0.38 (0.10)***	-0.38 (0.10)***	-0.39 (0.10)***
Family income	-0.00 (0.00)+	-0.00 (0.00)+	-0.00 (0.00)*
Parental involvement	0.01 (0.02)	0.01 (0.02)	0.02 (0.02)
Parent-adolescent conflict	0.02 (0.02)	0.03 (0.02)	0.02 (0.02)
School size (small)	0.08 (0.11)	0.08 (0.11)	0.06 (0.11)
School attachment	-0.04 (0.02)+	-0.04 (0.02)	-0.03 (0.02)+
Time 2 depression	0.20 (0.01)***	0.20 (0.01)***	0.21 (0.01)***
Friends' participation	-0.00 (0.02)	-0.00 (0.02)	-0.01 (0.02)
Phase 2			
Sports only		0.07 (0.15)	0.20 (0.15)
Academics only		-0.11 (0.25)	-0.04 (0.25)
School only		-0.41 (0.32)	-0.31 (0.27)
Performance only		0.08 (0.21)	0.15 (0.21)
Multiple types		0.03 (0.16)	0.15 (0.16)
Phase 3			
Small school x sports			0.63 (0.29)*
Small school x academics			1.39 (0.49)**
Small school x multiple activity types			0.66 (0.28)*
$R^2=$	0.07	0.07	0.08
$F=$	21.68***	16.28***	8.23***
$df=$	17, 105	22, 100	47, 75
+p $\leq$ 0.10 *p $\leq$ 0.05 **p $\leq$ 0.01 ***p $\leq$ 0.001			

Table 3.12

*Weighted Hierarchical Regression Analyses Predicting Time 2 Delinquency*

Predictor Variable	$\beta$ (SE B)	$\beta$ (SE B)	$\beta$ (SE B)
Phase 1			
Gender (female)	-0.19 (0.05)***	-0.18 (0.06)***	-0.18 (0.06)**
Age at Time 2	-0.08 (0.02)***	-0.08 (0.02)***	-0.08 (0.02)***
Black	-0.05 (0.08)	-0.04 (0.08)	-0.03 (0.08)
Hispanic	-0.05 (0.11)	-0.05 (0.11)	-0.05 (0.11)
Asian	-0.03 (0.10)	-0.02 (0.10)	-0.00 (0.10)
Other	0.25 (0.13)+	0.25 (0.13)+	0.26 (0.13)*
Ability flag	-0.21 (0.07)**	-0.21 (0.07)**	-0.20 (0.07)**
Ability	0.00 (0.00)*	0.00 (0.00)*	0.00 (0.00)*
Mother's education	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)
Family income	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Parental involvement	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Parent-adolescent conflict	0.04 (0.01)***	0.04 (0.01)***	0.04 (0.01)***
School size (small)	0.04 (0.09)	0.04 (0.08)	0.05 (0.09)
School attachment	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Time 1 delinquency	0.46 (0.04)***	0.46 (0.04)***	0.46 (0.03)***
Friends' delinquency	0.03 (0.01)**	0.03 (0.01)***	0.03 (0.01)**
Friends' participation	-0.03 (0.01)+	-0.03 (0.01)+	-0.02 (0.01)+
Phase 2			
Sports only		-0.08 (0.11)	-0.01 (0.11)
Academics only		-0.30 (0.11)**	-0.25 (0.12)*
School only		-0.07 (0.21)	-0.04 (0.26)
Performance only		-0.25 (0.10)*	-0.23 (0.10)*
Multiple types		-0.07 (0.09)	-0.03 (0.09)
Phase 3			
School attachment x performance			0.08 (0.03)*
Parental involvement x sports			0.07 (0.03)*
Parental involvement x academics			0.10 (0.05)*
$R^2=$	0.28	0.28	0.29
$F=$	25.67***	23.19***	18.34***
$df=$	17, 105	22, 100	47, 75
+p $\leq$ 0.10 *p $\leq$ 0.05 **p $\leq$ 0.01 ***p $\leq$ 0.001			



Table 3.13

*Weighted Hierarchical Regression Analyses Predicting Time 3 Delinquency*

Predictor Variable	$\beta$ (SE B)	$\beta$ (SE B)	$\beta$ (SE B)
Phase 1			
Female	-0.61 (0.06)***	-0.60 (0.06)***	-0.60 (0.06)***
Age at Time 3	-0.10 (0.02)***	-0.10 (0.02)***	-0.10 (0.02)***
Black	0.15 (0.08)+	0.15 (0.08)+	0.15 (0.08)
Hispanic	0.02 (0.08)	0.02 (0.08)	0.03 (0.08)
Asian	-0.10 (0.11)	-0.09 (0.11)	-0.09 (0.11)
Other	-0.00 (0.08)	-0.00 (0.08)	-0.00 (0.08)
Ability	0.01 (0.00)**	0.01 (0.00)**	0.01 (0.00)*
Mother's education	0.07 (0.02)**	0.07 (0.02)**	0.07 (0.02)**
Family income	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Parental involvement	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Parent-adolescent conflict	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
School size (small)	-0.06 (0.06)	-0.06 (0.06)	-0.07 (0.06)
School attachment	-0.02 (0.01)	-0.02 (0.01)	-0.02 (0.01)
Time 2 delinquency	0.16 (0.02)***	0.16 (0.02)***	0.16 (0.02)***
Friends' delinquency	0.01 (0.01)*	0.01 (0.01)*	0.01 (0.01)+
Friends' participation	0.01 (0.01)	0.01 (0.01)	0.01 (0.02)
Phase 2			
Sports only		0.07 (0.07)	0.11 (0.07)
Academics only		-0.01 (0.11)	0.06 (0.13)
School only		-0.15 (0.16)	-0.12 (0.17)
Performance only		0.02 (0.14)	0.10 (0.17)
Multiple types		0.05 (0.06)	0.09 (0.06)
Phase 3			
Parental involvement x school			0.06 (0.03)*
$R^2=$	0.10	0.10	0.10
$F=$	15.47***	12.37***	7.85***
$df=$	16 , 106	21 , 101	46 , 76
+p $\leq$ 0.10   *p $\leq$ 0.05   **p $\leq$ 0.01   ***p $\leq$ 0.001			

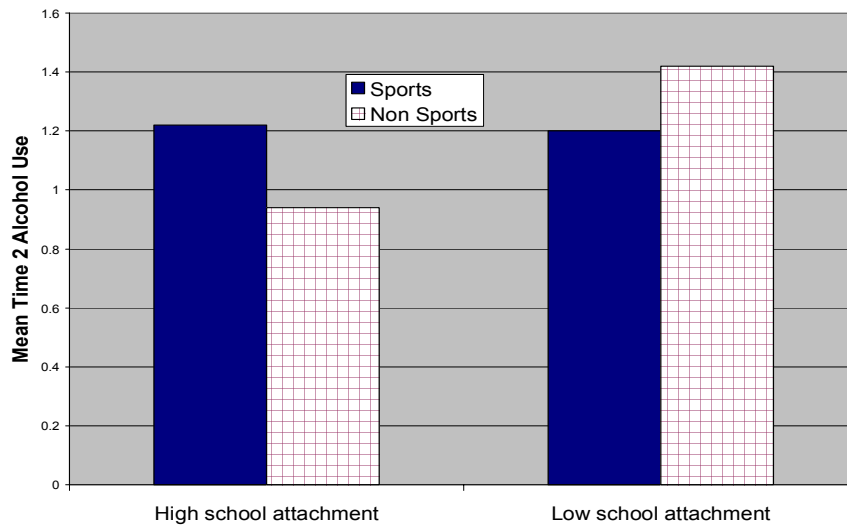


Figure 3.1. Interaction between school attachment and sports participation in predicting Time 2 alcohol use.

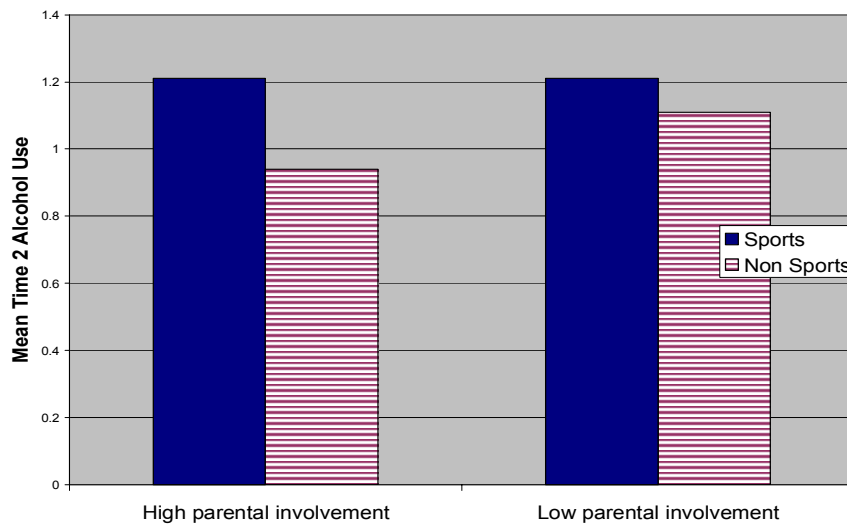


Figure 3.2. Interaction between parental involvement and sports participation in predicting Time 2 alcohol use.

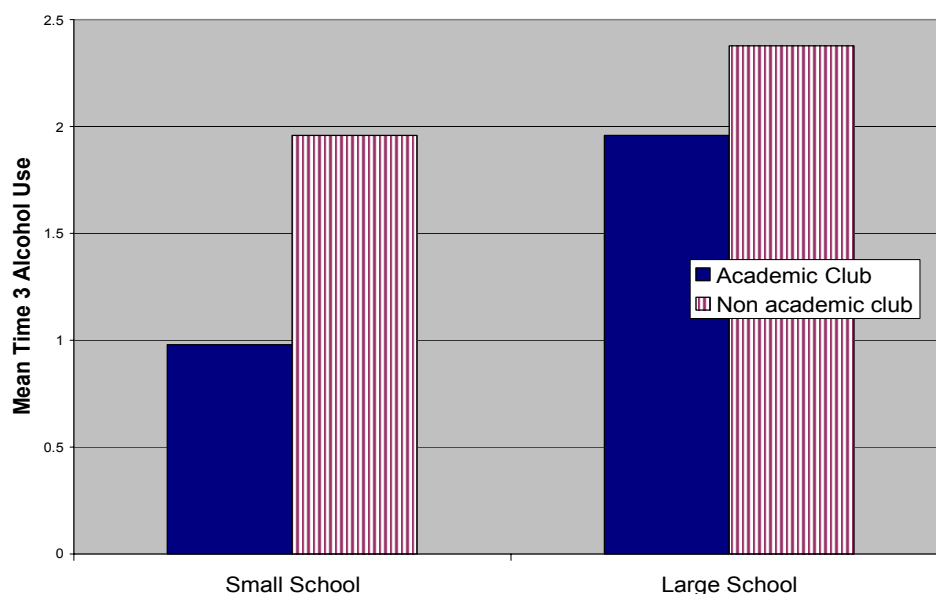


Figure 3.3. Interaction between school size and academic club in predicting Time 3 alcohol use (pattern applies to performance activities).

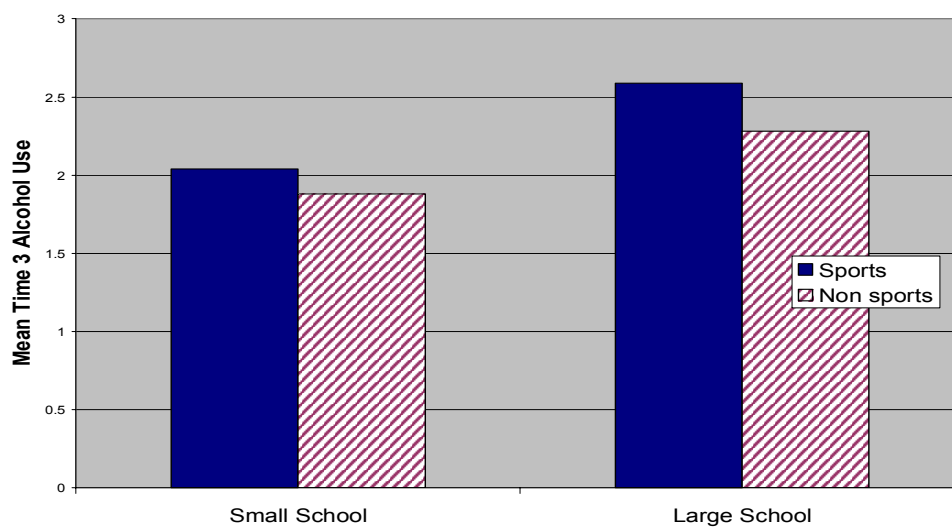


Figure 3.4. Interaction between school size and sports participation in predicting Time 3 alcohol use (pattern applies to multiple activity type participation).

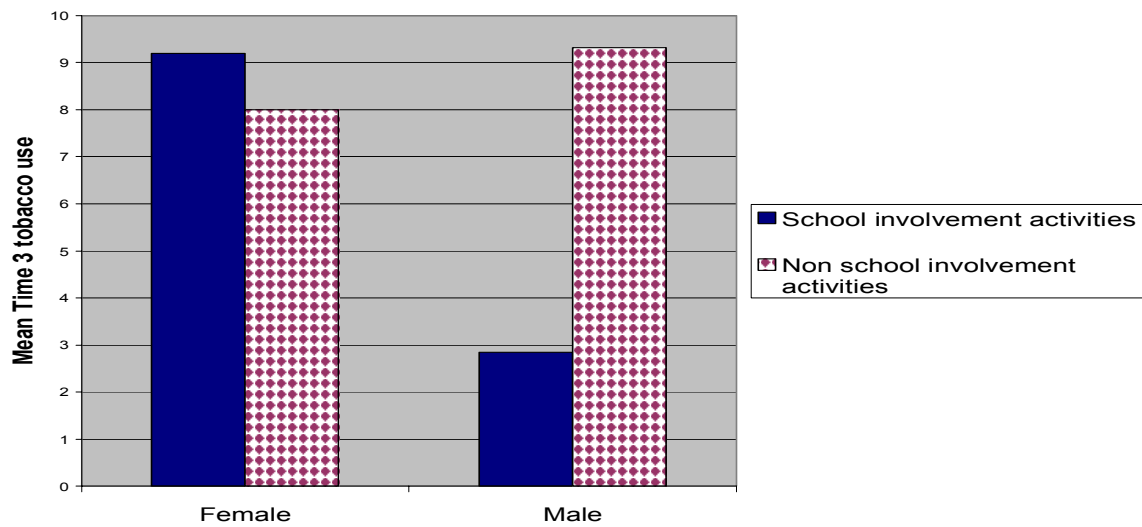


Figure 3.5. Interaction between gender and school involvement activity participation in predicting Time 3 tobacco use.

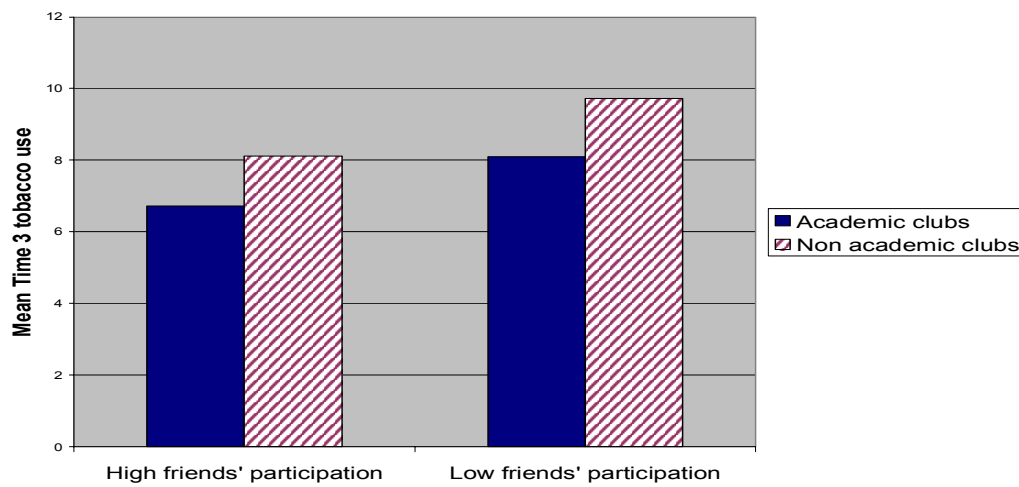


Figure 3.6. Interaction between friends' participation and academic club participation in predicting Time 3 tobacco use.

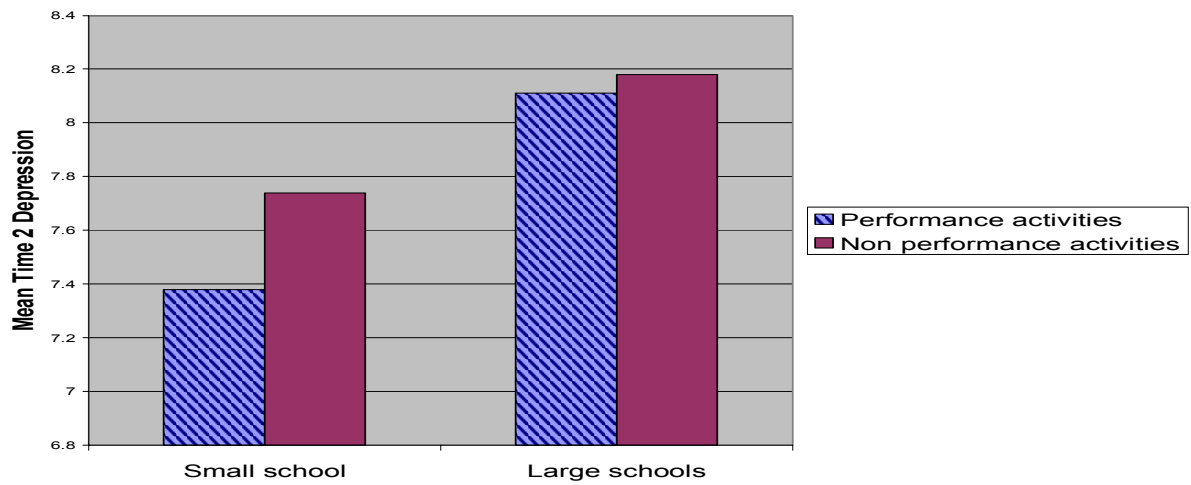


Figure 3.7. Interaction between school size and performance activity participation in predicting Time 2 depression.

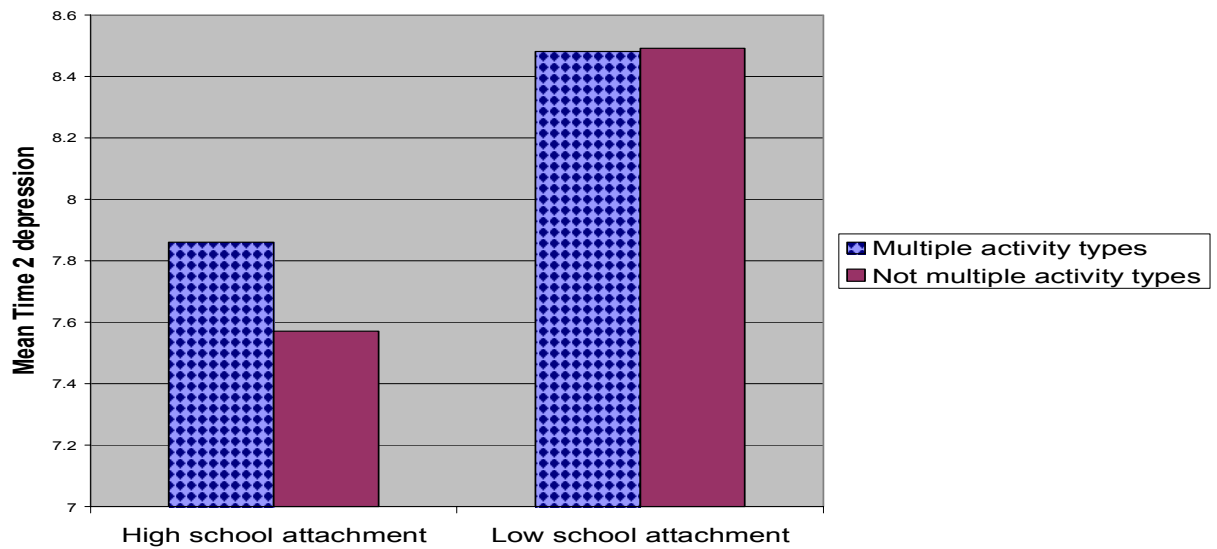


Figure 3.8. Interaction between school attachment and multiple activity type participation in predicting Time 2 depression.

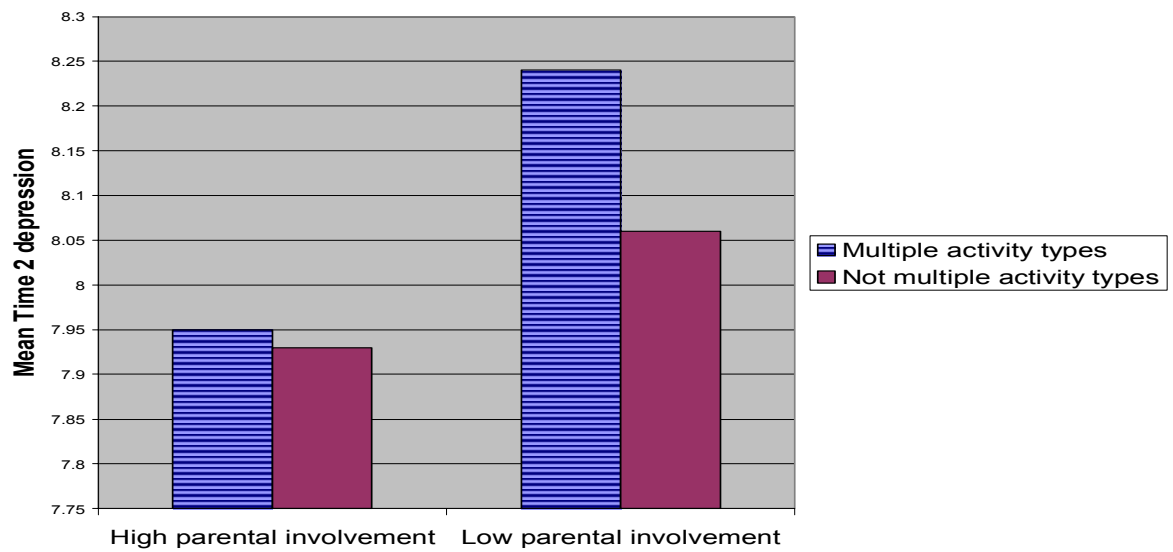


Figure 3.9. Interaction between parental involvement and multiple activity type participation in predicting Time 2 depression.

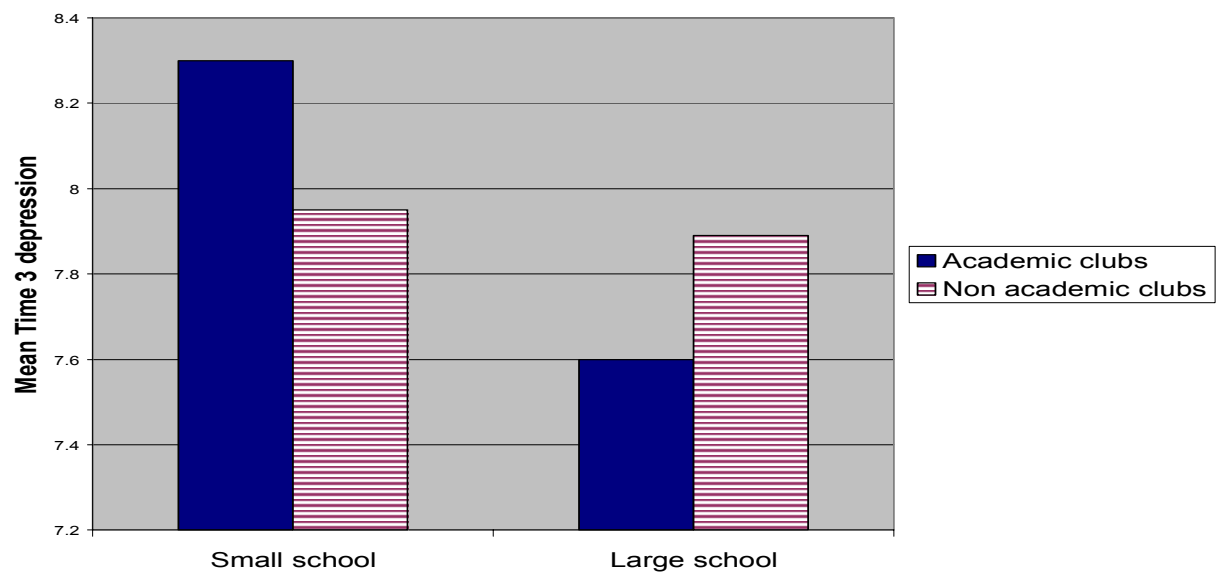


Figure 3.10. Interaction between school size and academic club participation in predicting Time 3 depression.

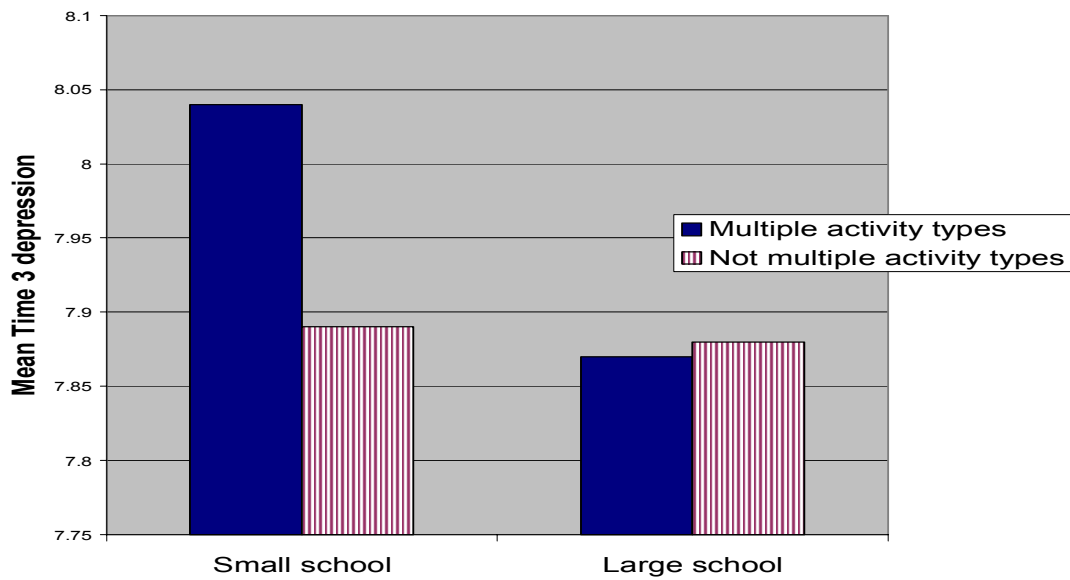


Figure 3.11. Interaction between school size and multiple activity type participation in predicting Time 3 depression.

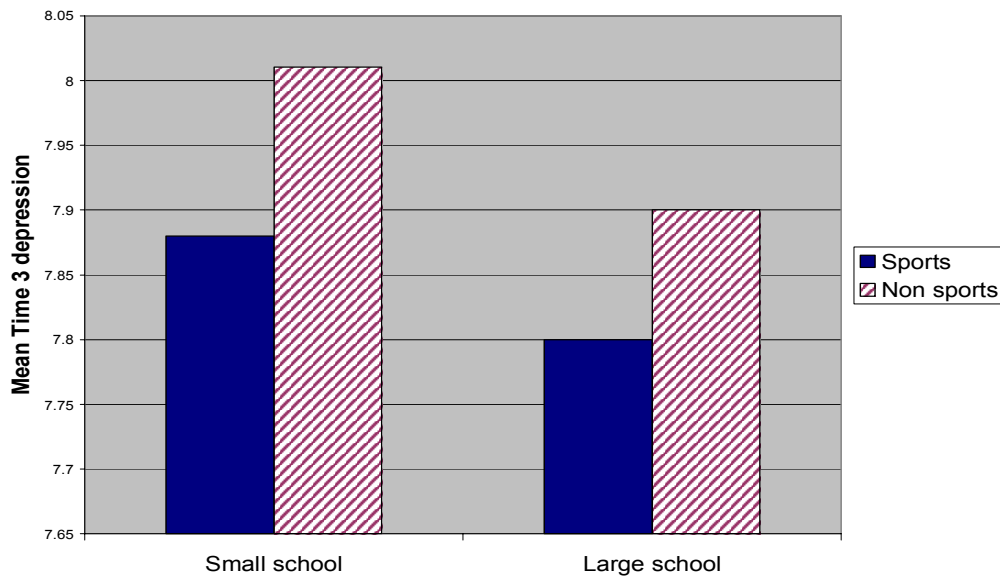


Figure 3.12. Interaction between school size and sports participation in predicting Time 3 depression.

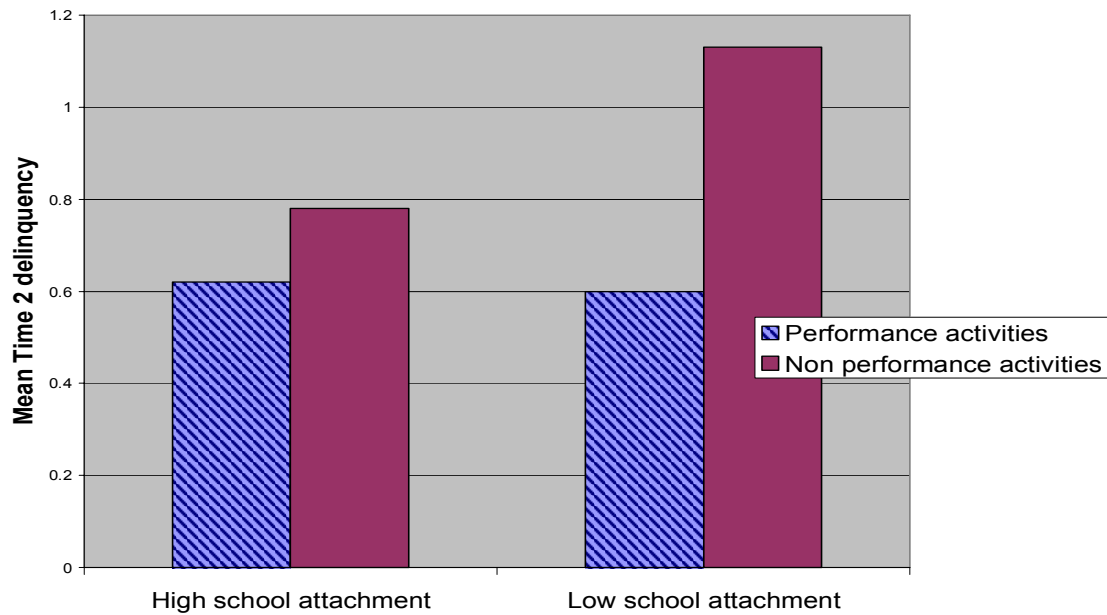


Figure 3.13. Interaction between school attachment and performance activity participation in predicting Time 2 delinquency.

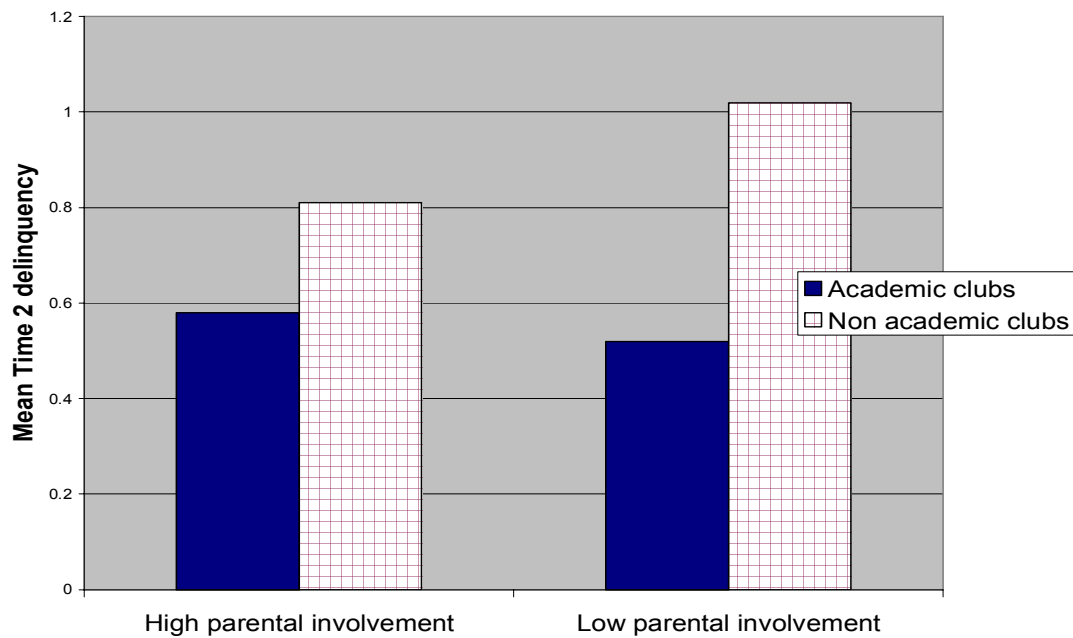


Figure 3.14. Interaction between parental involvement and academic club participation in predicting Time 2 delinquency.



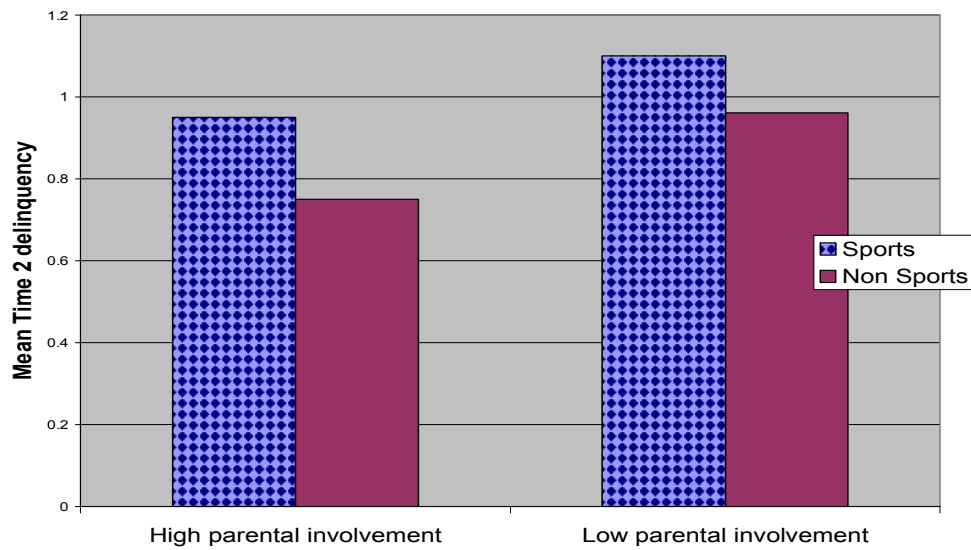


Figure 3.15. Interaction between parental involvement and sports participation in predicting Time 2 delinquency.

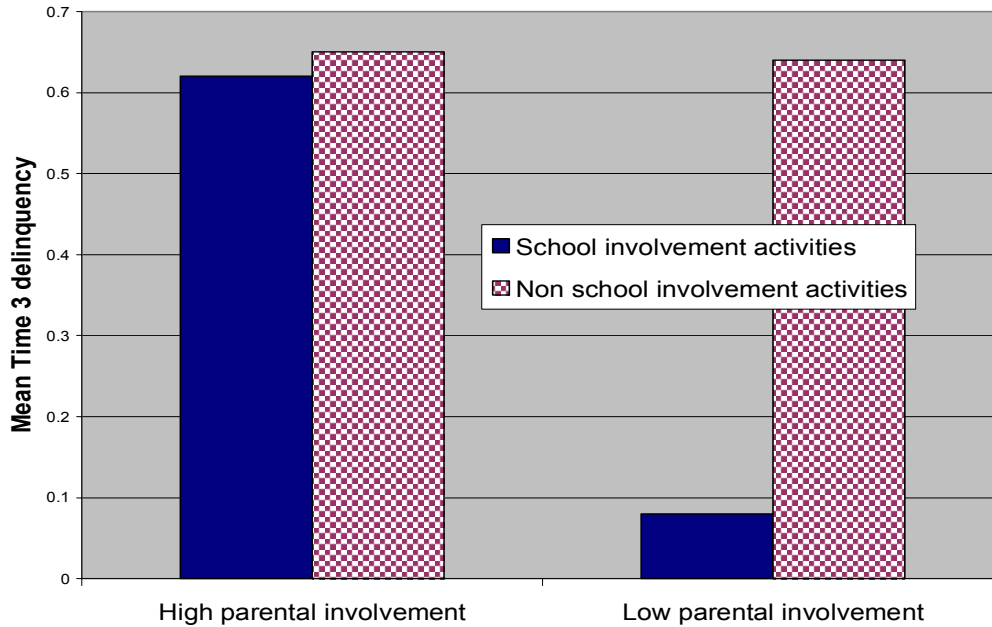


Figure 3.16. Interaction between parental involvement and school involvement activity participation in predicting Time 3 delinquency.

## CONCLUSIONS

The aim of this three-part dissertation was to examine the links between school-based extracurricular activity participation and adolescent development stemming from an increasing focus on the possibility that participation promotes positive youth and young adult development. The findings from these chapters have implications for school and social policy when examining who is more likely to participate in activities. The role of such participation in the transition to young adulthood depends on the type of activity the adolescent is involved in but unfortunately, does not add much explanation for the outcomes after controlling for background variables. These results may be due to limitations of the activity measure but certainly point the way to areas of research that smaller studies could next undertake.

The findings from this study in regard to non-participants are of particular concern and have implications for educational and social policy in terms of the availability of activities in certain schools and exclusion from participation. My findings support previous activity research findings on non-participants (McNeal, 1998; Zill, Nord, & Loomis, 1995) in that they are older, come from families with lower incomes, have lower grades, and are from medium or large size schools. Given that this sample is biased towards social advantage, I suspect the discrepancy between participants and non-participants is more drastic than these analyses can uncover. As many junior-high and middle schools feed into fewer high schools there is less availability of participation spots in many activities.

Availability of activities is of particular concern for those who would otherwise choose to participate in activities but are excluded due to a reduction of available spots. For example, many athletic teams have a maximum number of participants, or slots, regardless of school size. For example, soccer requires 11 players on the field at a time, limiting the possible number of players on the team to about 25 or 30. Depending on the number of schools that feed into one high school, the availability of athletic positions drops drastically. The same could be true for chorus, orchestra, and band. Fewer spots could mean more competition and greater skill requirements to participate, thereby increasing the number of non-participants over time, especially in larger schools where there is more competition. Examining the number of feeder schools into each high school, the availability of similar community-based activities that may require less skill and have less competition for spots, and providing a larger variety of activities in high schools may help to include these adolescents who would otherwise be participants.

On the other hand, there may be adolescents who are excluded from participation based on social disadvantage. Students whose families have lower incomes may have other responsibilities to their families making them unable to participate in after school activities. For example, these students may take on child care responsibilities for younger siblings so their parents can work or because daycare is not affordable. Another possible explanation for the higher family income of participants is that activity participation may impose a cost on participants so that only those students who could afford to help with uniforms, equipment, instruments, and travel costs could participate. These school-based activity non-participants may also be taking advantage of activities in

their communities such as the neighborhood pool, basketball courts, and community centers which could possibly impose less of a cost to the adolescents personally.

Unfortunately, community-based activity involvement cannot be measured with this data.

Finally, no pass/no play restrictions may exclude adolescents who would like to be participants but are of lower ability, have poor time-management skills, or who simply don't have the time to devote to obtaining better grades. Identifying alternative outlets that have benefits similar to school-based extracurricular activities may be particularly advantageous for this group.

The investigation of the influence of adolescent school-based extracurricular activity participation on substance use, well-being, and delinquency in Chapter Three revealed quite puzzling findings that are contrary to both popular notion and existing literature that participation is related to positive youth outcomes. While certain activities were related to Time 2 substance use and delinquency, most activity participation was not related to Time 3 outcomes. Only sports and multiple activity type participation were consistently related to alcohol use at both time points in a positive direction. Adolescents drank more if they were currently or had previously participated in these activities. These types of participation were also related to the highest rates of young adult drinking. However, including activities in the analysis did not add any significant explanation to the models over and above background variables and variables related to participation.

These models included factors related to participation including peer factors- friends' substance use, participation, and delinquency, family factors- parental involvement and parent-adolescent conflict, and a school factor-school attachment.

These factors could quite possibly be mechanisms through which activity participation influences such outcomes and therefore the significance of participation alone was masked. Testing these factors in mediational models would help to uncover the true relationship of participation to the outcomes in this study. Additionally, limitations of the activity measure itself may have contributed to the lack of findings in this chapter.

The activity measure in the *Add Health* study is a fairly dirty measure, particularly for sports participation. The question on the survey simply asks: “Here is a list of clubs, organizations, and teams found at many schools. Darken the oval next to any of them that you are participating in this year, or that you plan to participate in later in the school year”. Students could mark activities that they plan to go out for but may not make and could mark activities that they participate in outside of school, during gym class, or during pick up games after school. In other words, we can’t know for sure whether the student is really participating in the activity they marked nor the extent or intensity of that participation.

The benefit of using a large dataset is the ability to parcel out data. This particular study did not reveal large findings but has pointed to areas for other, smaller studies to investigate. Measures of peer, family, and school characteristics were significantly related to both participation and the outcomes of interest in this dissertation. Studies that can measure these factors more qualitatively than available in the particular dataset used in this study will greatly add to the activity literature. For example, studies that can determine how many hours a week a student participates in activities, which activities they most identify with, the intensity of their role in the activity (i.e, team

captain or executive board of a club), their parents' activities or parents' involvement in their activities, and finally, the role of the school such as teacher involvement or activity prestige will help us to better understand adolescent development in the context of activity participation.

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## VITA

Amy Florence Feldman was born in Washington, D.C. on December 29, 1973, the daughter of Martha Jean Ellington Feldman and James Gary Feldman. After completing her work at Thomas S. Wootton High School, Rockville, Maryland, in 1991, she entered the University of Maryland in College Park, Maryland. She received the degree of Bachelor of Science from the University of Maryland in May 1995. She entered the University of Chicago, Chicago, Illinois in the Fall of 1998 and received the degree of Master of Arts in June 1999. In August 2000 she entered the Graduate School of The University of Texas.

Permanent Address: 14006 Loblolly Terrace, Rockville, Maryland 20850

This dissertation was typed by the author.