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ABSTRACT

The Monitoring the Future survey of high school seniors, the Longitudinal Study of American Youth, and the National Education Longitudinal Study of 1988 were used to provide information about adolescents' time use, their risky behaviors, and the outcomes of time-use patterns in the late 1980s and the early 1990s. Spending significant portions of their discretionary time in constructive activities may develop useful skills and lessen adolescents' chances of engaging in risky behavior. Data confirmed that relatively few U.S. adolescents were spending significant portions of their free time in constructive activities. Overall, they devoted little time to homework, and, although many reported participating in noncompulsory activities at school, most spent relatively little time in such activities. In addition, relatively few spent time in organized activities not connected to the school. Findings indicated that organized youth activities can help deter risky behavior in adolescence and young adulthood, but that the effectiveness of the activity depends on the extent to which it develops skills, creates challenges, and provides fulfilling experiences for teen participants. Appendixes discuss data sources and analysis, and ecological systems theory and social control theory. (Contains 28 figures, 18 tables, and 39 references.) (SLD)

Adolescent Time Use, Risky Behavior, and Outcomes: An Analysis of National Data

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EXECUTIVE SUMMARY

Participating in positive, goal-directed activities gives teenagers a chance to develop skills, build character, and sample different fields of human endeavor. It may also lessen their chances of engaging in risky behaviors, such as drug use or delinquency, by occupying idle time, strengthening commitment to school and other conventional institutions, and exposing teens to beneficial peer and adult influences. There has been considerable debate, however, as to how effective youth programs are in preventing misbehavior. More evidence is needed as to how today's teenagers spend their time and whether constructive activities help to deter problem behavior.

The present study made use of several large-scale data bases to examine the time-use patterns of American adolescents in the late 1980s and early 1990s, compare them with those exhibited by young people 10 to 20 years ago, and test whether participation in extracurricular activities reduces the chances that young people will engage in various risky behaviors. The data analyzed came from Monitoring the Future (an annual survey of high school seniors), the Longitudinal Study of American Youth, the National Education Longitudinal Study begun in 1988, and an earlier longitudinal study called High School and Beyond. The risky behaviors studied were dropping out of school, having children while still teenagers, being delinquent, smoking, using marijuana or cocaine, and binge drinking.

The study found that U.S. teenagers have a lot of discretionary time available to them and, for most, that time is *not* being filled with activities that build their skills or characters. For example, today's 10th grade students devote on average only one half hour per day to homework. Less than 20 percent of them read for pleasure almost every day, only 15 percent work daily on hobbies, arts, or crafts, and just 5 percent routinely use personal computers for schoolwork or recreation. Less than a third attend religious activities once a week or more, about a fifth participate in youth groups or organized recreational programs that often, and a similar fraction take weekly classes outside of school in music, art, language, or dance. One in eight takes weekly sports lessons outside of school, while one in fourteen volunteers or performs community service activities.

How then do teenagers spend the considerable amounts of free time at their disposal? They watch television (two and a half hours per day, on average); they talk with other teens on the telephone (60 percent say they do so on a daily basis); and they hang out with friends in malls and other neighborhood hangouts (64 percent do this at least one or twice a week). As they get older, they work for pay at relatively low-skill jobs that do little to prepare them for the more complex and demanding jobs at which they are likely to later work. Sixty percent of U.S. 12th graders and 27 percent of 10th graders do seven or more hours of paid work per week during the school year.

When the study compared adolescent time use in the 1990s with that in the mid-1970s or early 1980s, overall patterns were surprisingly similar. The changes found were mostly in a negative direction as far as constructive use of time was concerned. For example, high school students in 1990 spent no more time doing homework than earlier cohorts did, despite taking courses that were supposedly more rigorous. Teenagers in the 1990s were less likely to read books, do household chores, or attend religious services on a regular basis than their predecessors were. Compared to the early 1980s, fewer students in the 1990s participated in band, orchestra or chorus in school, in traditional hobby clubs such as photography or chess, or in cheerleading or drill team. On the other hand, almost as many went out for varsity sports, and slightly more took part in academic clubs, such as science, computer, or foreign language clubs, math team, or debating society. Overall, however, the increased emphasis on academics that has supposedly dominated American education in recent years has not resulted in much apparent change in intellectual effort or studying behavior among American adolescents.

Not only is the time use of the average American teenager relatively unproductive, there is considerable inequality in the extent to which different groups of teens use their free time in constructive as opposed to idle or detrimental ways. Young people from families with low levels of parent education or family income, who would seem to be most in need of organized skill-building and character-nurturing activities, were found to be least likely to engage in such activities. Likewise, students whose parents were uninvolved in the PTA and other school-related activities did not participate in constructive free-time activities as often,

nor spend as much time doing homework, as students with involved parents. Students enrolled in general or vocational/technical programs in high school had much less exposure to extracurricular activities than students enrolled in academic or college-preparatory programs.

The time-use patterns of 10th graders were predictive of what they would be doing one year after high school. Those who were "homework-focused" were twice as likely to be enrolled full time in postsecondary school as those who were focused on paid employment as 10th graders. Conversely, those in the latter group were twice as likely as those in the former to be employed full time after high school. However, the link between doing more paid work as a teenager and full-time employment as a young adult was weaker than the association between doing more homework and full-time college enrollment. This indicates that the jobs that adolescents hold are not giving them the skills or experience necessary to obtain stable full-time employment after high school.

Time-use patterns of 10th graders were also predictive of whether they would engage in a variety of risky behaviors. For example, compared to those who reported spending 1-4 hours per week in extracurricular activities, students who reported spending no time in school-sponsored activities were 57 percent more likely to have dropped out by the time they would have been seniors; 49 percent more likely to have used drugs; 37 percent more likely to have become teen parents; 35 percent more likely to have smoked cigarettes; and 27 percent more likely to have been arrested. These significant negative relationships were found after controlling for related family, school, and student characteristics such as parent education and income levels, parent involvement in school-related activities, and students' grades. Up to a point, students who spent more time (5-19 hours per week) in extracurricular activities were even less likely to engage in risky behavior. However, there was not as great a deterrent effect among those who spent large amounts of time (20 or more hours per week) in extracurricular pursuits.

One behavior that proved an exception to the rule that extracurricular participation reduced risky conduct was binge drinking. After other factors were controlled, time in

extracurricular activities did not show a significant relationship with underage drinking. The difference may be due to the greater social acceptability of drinking in adult society, compared with cocaine or marijuana use, or to another finding of the study. This was that one form of extracurricular activity -- varsity sports -- actually seemed to predispose young people to binge drinking.

When data on adolescent time use and risky behavior were analyzed separately for males and females, similar relationships were found. One difference was that the deterrent effect of extracurricular participation on teen childbearing was more clearly evident among females than males. Similar relationships were also observed when the number of activities in which students participated was used as a measure of extracurricular involvement instead of hours per week.

Participation in two specific forms of extracurricular activity, varsity sports and music or drama, showed somewhat different relationships to later risky behavior. Students who participated in varsity sports were less likely than non-participants to drop out of school or become smokers by their senior years. On the other hand, student athletes were significantly *more* likely to have engaged in binge drinking, as noted above. Also, male (but not female) athletes were more likely to have become teen parents. By contrast, students who participated in band, orchestra, chorus, or in a school play or musical were significantly less likely than non-participants to engage in nearly all the problem behaviors: dropping out of school, being arrested, becoming smokers, using drugs, or engaging in binge drinking. Female (but not male) performers were also less likely than non-performers to have become teen parents.

The findings indicate that organized youth activities can help to deter risky behavior in adolescence and young adulthood. However, the effectiveness of an activity depends not just on the degree to which it occupies idle time, but also on the extent to which it develops skills, creates challenges, and provides fulfilling experiences for teen participants. It depends as well on the attitudes that other participants have about engaging in specific high-risk

behaviors. If the group code encourages some forms of risky behavior, such as binge drinking or sexual promiscuity, participation in the activity may be counterproductive.

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INTRODUCTION

Adolescence is a period of growth and vulnerability. Although the majority of young people successfully navigate the path between childhood and adulthood, a substantial minority do not. Some portion of youth drop out of school; become involved with drugs; become parents while still in their teens; or engage in other risky behaviors such as binge drinking and smoking that put their futures in jeopardy. Research has shown that youth who are involved in one risky behavior are more likely to be engaged in others and this combination of activities further jeopardizes their futures. Moreover, many behaviors that are begun during adolescence will extend into adulthood (Willard and Schoenborn, 1995; Csikszentmihalyi and Larson, 1984).

Much research has been done on drop out, drug use, and delinquency (Elliott, Huizinga, and Ageton, 1985; Rutter and Giller, 1983). But a great deal remains to be learned about why youth become involved in risky behaviors and what steps could be taken to deter their involvement. There is considerable controversy about how effective youth programs are at promoting positive development and preventing misbehavior.

One way to better understand young people's development and their involvement in risky behaviors is to look at how they spend their time (Medrich et al., 1982; Carnegie Corporation, 1992). Information on adolescent time use is relatively meager, however, and often based on small, unrepresentative samples (Medrich, 1991). Definitive answers are lacking to questions such as the following:

- How do adolescents spend their time?
- How have adolescent time-use patterns changed in the last two decades, as society has changed in many ways that affect the lives of children and youth?
- How do adolescent time-use patterns vary across demographic groups?
- Does involvement in organized activities like school sports deter youth from engaging in risky behaviors?

This project sought to provide more information on these issues by analyzing data from three national data sets. These were Monitoring the Future (MTF), an annual survey of U.S. high school seniors, the Longitudinal Study of American Youth (LSAY), and the National Educational Longitudinal Study of 1988 (NELS:88). The latter two are panel studies that follow cohorts of young people from middle school through high school, college, and beyond. The data sources and analysis methods are described in more detail in Appendix A.

Data from all three studies were used to provide a composite picture of adolescent time-use patterns in the late 1980s and early 1990s. MTF was used to examine whether high school seniors' involvement in selected activities had changed over the 16-year period between 1976 and 1992. Information on change over time was also obtained by comparing findings from the NELS with results of High School and Beyond, a similar panel study conducted by the U.S. Department of Education a decade earlier. The LSAY and NELS were used to examine how activity participation patterns and levels vary across demographic groups. They were also used to determine associations between participation in activities such as homework, working for pay, and extracurricular activities in school, and criterion measures such as school achievement, dropping out of school, becoming a school-aged parent, drinking large quantities of alcohol, and smoking cigarettes.

Why Adolescent Time Use Is Important

There are several theories that provide systematic ways of thinking about why adolescent time use may be important for youth development and the prevention of detrimental behaviors. Two of the more useful theories are the ecological systems theory of youth development (Bronfenbrenner, 1979, 1986), which has helped shape a great deal of research on the family and child development (Berk, 1993), and social control theory (Hirschi, 1969), which has been widely used in studies of delinquency (Rutter and Giller, 1983). (The main tenets of both of these theories are summarized in Appendix B).

Ecological systems theory posits that a young person's development is the result of a complex interplay between the youth's own natural endowment and environmental factors that range from immediate influences such as parents and peers to more distal influences such as the community. The theory recognizes that the types of activities and interactions that youths have available to them depend on family resources and the wealth and political organization of the community. *Social control theory* assumes that without restraining forces, most people would engage in some forms of behavior proscribed by society. The restraining forces that keep most people from deviating are *attachment* (or a bond) to conventional society usually through attachment to one or more persons or to an institution such as a school, *commitment* to conventional goals, *involvement* in conventional activities, and *belief* in a conventional value system. The following discussion of adolescent time use grows out of both of these theoretical perspectives.

How adolescents spend their time when they are not in school can make a difference for their development in several ways. Spending significant portions of their discretionary time in constructive activities, whether on their own or in organized groups, gives teenagers a chance to develop skills, build character, and sample different fields of human endeavor. It may also lessen their chances of engaging in risky behavior.

Skill Development

When young people take part in activities like music or art lessons, drama or dance, competitive sports, photography or computer clubs, restoring old cars, and so on, they learn skills that are rarely taught in their regular classrooms. Other activities, such as science or foreign language clubs, math team, debating society, school newspaper, yearbook, or literary magazine, apply, strengthen, and extend academic skills. Some of what they learn in these activities may be of use to them in their later careers. But even if the skills are not of practical benefit, getting better at something is inherently rewarding to humans of all ages and helps to foster a sense of competence and control over one's destiny (Csikszentmihalyi, 1990). The need to feel a sense of self-worth may be particularly important for adolescents,

who are striving to establish their adult identities and who, as they enter the teen years, tend to have low levels of self-esteem (Harter, 1990).

Character Building

Not only do goal-directed activities help to develop skills in young people, they may also foster positive character traits. Both individual and group activities can teach the importance of vigilance, hard work, attention to detail, repeated practice, patience, and persistence in the face of setbacks. Group activities encourage cooperation and teamwork, sacrificing personal convenience for group goals, seeing the other's viewpoint, and learning how to follow and lead. All of these qualities can be of benefit to young people in their studies, their jobs, and their personal lives, as well as help them to become responsible and successful adults.

Sampling Different Fields

Voluntary activities (including different kinds of paid work) are important because they enable young people to "try out" different fields of endeavor. From this they may learn what working conditions are like in each field, whether they enjoy participating in the activity, and how good they are at it. This may open up career possibilities previously not thought of by the youth, and help him or her to make wiser choices as to future course work and employment. Activity sampling may be done not only by direct participation, but also by reading works of fiction or non-fiction that depict a given vocation or enterprise fully and accurately.

Having the opportunity to do this kind of activity sampling seems especially important for young people who are not doing well in conventional academic studies. Such sampling may enable these young people to discover a field in which they <u>can</u> be successful, or at least give them a fuller sense of what their options are. Furthermore, after they experience the drudgery associated with many unskilled jobs, or the often harsh realities of athletic or

artistic competition, some previously indifferent students may return to their schoolwork with renewed interest.

Preventing Risky Behavior

There are at least three ways in which adolescents' time-use patterns might affect their chances of avoiding risky behaviors like dropping out, bearing children as an unmarried teen, engaging in delinquency, smoking, or abusing drugs or alcohol. The mechanisms can be called time displacement, commitment building, and group pressure. *Time displacement* is the widely-held notion that if a young person spends a great deal of time in beneficial or harmless activities, he or she will not have much time left to get into mischief. Time displacement is referred to as "involvement in conventional activities" in Hirschi's social control theory (Hirschi, 1969, pp. 21-23).

Commitment building refers to the argument that participation in constructive activities, by developing skills, creating aspirations, and providing rewarding experiences, strengthens young people's commitment to conventional institutions (like school) and traditional career pathways (like becoming a professional musician or athlete rather than a drug dealer). This, in turn, makes it less likely that the young persons involved will engage in behavior (like dropping out) that would mean they can no longer participate in the enjoyable activity and might endanger their chances of fulfilling the aspirations they have acquired (Hirschi, 1969, pp. 20-21).

Group pressure is the idea that participation in teams, clubs, or other group activities promotes a sense of membership or belonging. With this comes a reluctance to disappoint adult leaders or other youthful members of the team or club by engaging in behaviors that are frowned on by the group or might be detrimental to its success. Of course, this mechanism can be counterproductive if the group code actually encourages some forms of risky behavior, like use of performance-enhancing drugs, postgame binge drinking, or sexual promiscuity (Hirschi, 1969, pp. 16-19; Rutter and Giller, 1983, pp. 248-251).

These presumed mechanisms are not necessarily contradictory to one another, but they do lead to somewhat different hypotheses about which aspects of activity participation are most important for preventing (or promoting) high-risk behavior. These are discussed below in the section called, *Does Participation In Constructive Activities Prevent Risky Behavior?*

How Many Use Their Free Time Productively?

Given all these reasons why it might be beneficial for young people to engage in positive, goal-directed activities during the hours when they are not in school, the first research question asked in this study is:

- How many of today's adolescents in the United States do, in fact, spend significant portions of their free time in constructive activities?

Based on previous research on adolescent time use, the answer to this question has to be: Not many. For example, one study based on 24-hour recall time diaries found that American children and youth had plenty of discretionary time (40 percent of weekday hours and 50 percent of weekend hours), but comparatively little of it was spent studying, working in the labor market, playing sports, doing other outside activities, reading, participating in hobbies, or doing art activities (Timmer et al., 1985).[1] According to their diaries, on weekdays, youth aged 12-17 spent an average of about 33 minutes studying, about 14-28 minutes working, about 10-12 minutes reading, and 40-46 minutes playing sports. By contrast, they spent about two hours per weekday watching TV. On weekends, youth spent more time working at jobs (an average of 29-48 minutes per day), doing outdoor activities (about 25 minutes), and watching TV (over 2.5 hours) and less time studying (15-30 minutes). Visiting with friends also tended to increase during the weekend, especially among

[1] The study collected data about 492 children and youth aged 3-17. It was based on a 1981-82 follow-up to a 1975-76 national time-use survey. Because of problems relocating families and a relatively low completion rate, the sample could not be regarded as fully representative of U.S. households with children and youth (Juster & Stafford, 1985, pp. 515-518).

older adolescents. Nearly an hour (56 minutes) per weekend day was spent socializing with friends by youth aged 15-17 years.

Another national time-diary study conducted in 1985 by John Robinson at the University of Maryland produced similar results (Robinson, 1991).[2] It found that American adolescents aged 12-17 spent an average of two-and-a-half hours per day watching television, but only 27 minutes a day doing homework, 11 minutes a day reading for curiosity or pleasure, and 9 minutes a day pursuing hobbies or arts and crafts. (All these averages are for weekday and weekend days combined). Activities that occupied significant portions of teenagers' free time included visiting with friends (38 minutes a day), playing sports (28 minutes a day), playing cards or board games (24 minutes), talking with friends in person or on the telephone (22 minutes a day), and social travel (18 minutes).

A different technique, the "Experience Sampling Method," was used to study the time use patterns of a diverse sample of 75 adolescents from a community on the outskirts of Chicago (Csikszentmihalyi and Larson, 1984).[3] This study, like the ones by Timmer and Robinson, found that about 60 percent of the adolescents' time was taken up by productive (e.g., studying, working, or being at school) or maintenance activities. Approximately 40 percent of the adolescents' waking hours was leisure or discretionary time, and a large portion of this time (approximately 40 percent) was spent socializing. Another substantial segment (nearly 20 percent) was spent watching television. Relatively little time was spent reading for pleasure, playing sports or games, listening to music, or doing art or hobbies.

These earlier studies provide fascinating insights into youthful time use in the United States. However, they are based on limited and not fully representative samples of the

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[2] The 1985 Americans' Use of Time Project collected 24-hour recall time diaries from 418 respondents aged 12 to 17. The teens were part of a larger national sample that included adult respondents as well.

[3] To learn how adolescents spent their waking hours, how they felt about the activities they were involved in, and whom they were with, teen participants were asked to carry electronic pagers for a week and to record what they were doing and how they felt about it whenever they were beeped. The participants were randomly beeped throughout their waking hours, with each person being beeped approximately 40 to 50 times during the study week.

adolescent population. Furthermore, the portrait of adolescent activities they provide is now a decade or more old. Although the data analyzed in the present study do not provide as richly detailed a picture of teenage time use, the picture is based on large, probability samples of the youth population. Moreover, the picture these data provide is fresher, dating from the early 1990s. But based on the earlier studies, the first hypothesis to be tested with these data is that *only a relatively small minority of U.S. adolescents spend significant portions of their free time in constructive activities.*

Why Youthful Time Use May Have Changed

The second major research question addressed in this study is:

- How have youthful time-use patterns changed over the last decade-and-a-half (that is, between the mid-1970s and the early 1990s)?

Major changes have occurred in U.S. society, in American family life, and in the nation's schools during the last three decades. These include:

- demographic changes, such as the growing racial and ethnic diversity of the youth population, declines in average family size, and a shrinking of the adolescent and young adult segments of the population, relative to other segments, as a result of the "birth dearth" of the 1970s (U.S. Department of Education, 1993b, pp. 12-15 and 22-23);

- family life changes, such as increases in divorce, unmarried childbearing, and maternal employment (U.S. Department of Education, 1993b, pp. 18-19, 24-25, 42-43), but also a rise in parent education levels, especially among African-Americans (Select Committee on Children, 1989, pp. 62-63);

- economic changes, such as stagnant or declining wage rates, especially for young workers with limited skills, a smaller payoff for having a high school diploma and a bigger payoff for a college degree, greater income inequality, and increases in child poverty (Zill and Nord, 1994);

- cultural changes, such as the feminist movement, and a shift in the traits that parents value in their children, with parents nowadays placing more emphasis on independence and autonomy, whereas parents in the past placed more emphasis on conformity (Alwin, 1988); also, a general weakening of societal pressures to

conform to prescribed behaviors and greater tolerance for a variety of lifestyles (Nord and Zill, 1991);

- educational changes, such as the "back to basics" movement, increases in the expectations of both parents and youth themselves as to how far they will go in school (U.S. Department of Education, 1993b, pp. 136-137; Zill and Nord, 1994), greater numbers of high school students in college-preparatory programs (U.S. Department of Education, 1993b, pp. 60-61); higher college attendance rates but not college completion rates (Zill and Robinson, 1995; U.S. Department of Education, 1993b, pp. 64-65); and,

- technological changes like the spread of home video players and cable TV, personal computers, and video games (U.S. Bureau of the Census, 1993, Tables 900 and 1281).

A number of these developments might be expected to have impacts on the daily lives and time-use patterns of U.S. adolescents. The problem is that different developments seem to have varying or even conflicting implications for youthful time use, and there is no grand theory that would enable one to combine the disparate influences into one integrated hypothesis about how adolescent activity patterns have evolved. There are, however, two contrasting hypotheses that seem to emerge from some of the educational developments enumerated above. One is that *today's high school students should be spending more time studying, doing homework and participating in academic clubs, than their counterparts of ten or fifteen years ago*. The reasons for predicting this are the higher educational aspirations of today's youth (and their parents), the fact that more of them are enrolled in college-preparatory programs and taking challenging courses like intermediate algebra (U.S. Department of Education, 1995a), and a supposed commitment on the part of schools to require pupils to demonstrate at least minimal competence in core academic subjects before they are promoted or graduate from high school.

On the other hand, there are reasons to question the argument that time in academic pursuits is increasing. Because today's college-age cohort is smaller than in the past, many colleges are aggressively recruiting students to fill their freshman classes. The consequence is that it is relatively easy for a high school graduate to get into some college nowadays; demonstrated high achievement is not a prerequisite (though it still is at the most prestigious

and selective universities). Indeed, many colleges now give remedial courses to freshmen, teaching skills that were once thought to be mandatory for high school graduates.

There has also been grade inflation in American high schools, with many more students getting A's and B's than did so in the past (Astin et al., 1988). With the expectation that nearly everyone should complete high school, school administrators are reluctant to flunk anyone out. One result is that students in many high schools can get away with not doing all their homework. Further, with more young people in single-parent families, stepfamilies, and homes in which both parents are employed, parental supervision of their adolescent's homework completion may be less extensive than it was in the past (Muller, 1993; Muller and Kerbow, 1993). Or so the counterargument goes. Thus, the contrasting hypothesis is that *the average amount of time high school students spend doing homework and studying has not have increased*, even if teachers are assigning more homework now.

Another expectation is that *today's adolescents should be spending less time in school-sponsored extracurricular activities that are not academically oriented*, like band or chorus and art, drama, or hobby clubs. It is widely believed that many school systems have cut back on these activities due to budgetary constraints and a relatively narrow vision of what "the basics" of education should be. On the other hand, there is survey evidence that a variety of extracurricular activities remains available to almost all students in public high schools in the U.S. (O'Brien and Rollefson, 1995). The problem may really be that fewer students are choosing to become involved in nonacademic activities (U.S. Department of Education, 1993a, 1995b, pp. 30-31).

With more young people coming from single-parent and dual-career families households, it might be expected that greater numbers of adolescents would be participating in organized activities outside of school. However, unless these activities were community sponsored, they would only be available to families that could afford them. Many urban communities have cut back on their youth recreation programs due to the same kind of budgetary pressures that have affected the schools.

Why Adolescent Time Use May Vary With Family Characteristics

Hypotheses about how adolescent time use varies by socioeconomic (SES) level and by other family, school, and youth characteristics, were derived from ecological systems theory and previous research on leisure activities of adults and youth. Ecological systems theory points out that characteristics of the family and community resources shape the types of activities that youths have available to them. Youths living in low-income urban and rural areas, for example, often have fewer community programs available to them and their parents lack the financial resources to pay for privately run programs (Carnegie Corporation, 1992). Thus, youths in such areas may be more likely to report "hanging out" and other forms of non-productive time use than youth from wealthier settings.

But it is not merely a matter of money. Previous research on leisure activity patterns has found that education level is often a stronger predictor of adult time use than family income or community wealth (Robinson, 1977). Parents with more education are more likely to take advantage of the programs and facilities for young people that do exist in a given school and community. Also, they are more likely than parents with limited schooling to encourage their children to participate in skill-building activities and teach them how to take advantage of what is available in their schools and neighborhoods. Thus, compared to youth from lower-SES families, those from middle-class and upper-SES families benefit from greater informational and financial resources within the family itself, greater school and community resources, on average, and from behavior patterns that take maximum advantage of the programs and facilities that are available to them.

Socioeconomic Level of Family and Student Participation In Extracurricular Activities and Paid Work

The first hypothesis about variations in time use is, then, that *students from higher-SES families will be more likely than those from lower-SES families to spend significant portions of their discretionary time in constructive activities of various sorts*: doing homework, reading, participating in extracurricular activities at school, and taking various lessons or participating in clubs and teams outside of school. The same sort of relationship should be seen with family characteristics that help to define socioeconomic status, such as parent education level and family income.

On the other hand, *students from lower-SES families will be more likely to spend significant portions of their out-of-school time working for pay*. The reason for this is that lower-SES families have greater financial need and are less able or willing to have their sons and daughters invest time in skill-building activities that may have a greater value in the long term, but less payoff in the short run.

Parent Involvement as a Predictor of Activity Participation

A third hypothesis is that, no matter what their family's socioeconomic level might be, *adolescents whose parents are highly involved in school-related activities will tend to participate in extracurricular activities in and out of school more than students whose parents are relatively uninvolved*. This hypothesis derives from the principle that student involvement in constructive activities tends to mirror that of parents (Zill and Nord, 1994). The hypothesis also stems from a repeated finding in previous research on time use and activity participation, what John Robinson (1977) has called the principle of "the more, the more." That is, individuals and families who are active in one area of leisure or cultural activity tend to be *more*, not less active in other areas. Individual differences in energy or activity level, or in learned behavior patterns, seem to be far more important and predictive of activity participation than constraints growing out of the fact that there are only so many hours in the day.

All three of these hypotheses lead one to the rather gloomy conclusion that those students who are most in need of constructive free-time activities are least likely to be engaging in those activities. This is not to say that efforts to provide disadvantaged students with constructive activities are having no effect. Rather, despite these efforts, it is to be expected that inequalities in participation levels still exist, and these inequalities tend to favor students who come from advantaged and involved families.

Does Time Spent on Homework and Paid Work Help Prepare Adolescents for Higher Education and Adult Employment?

School work and employment are often viewed as fundamental for preparing adolescents for adulthood. Homework is not only necessary for reinforcing what is learned in school and for success in school, but it can also encourage the development of time management skills, discipline, responsibility, and personal interests for future educational or employment pursuits. It may also be a reflection of the extent to which students perceive the work they do in school as being important for their future success. That is, it may be a sign of their commitment to their educational and ultimately occupational goals.

Adolescents' experience with the world of work can be seen through two separate lenses. From one perspective, it can lead to the development of important skills. Even though most adolescents are working at non-skilled jobs to earn some spending money, to contribute to their family's income, or to save money for the future, they are also learning about responsibility, how to interact with others in a business setting, and the types of jobs or industries in which they would like to be employed as adults. From a different perspective, time spent on work is competing with time that could be spent studying or honing academic skills. Students who spend more time working for pay than studying may be expressing their disaffection for school as well as their attraction to paid employment.

Given the patterns of association between students' characteristics and the amount of time they spend on homework and paid work, it is important to learn whether the amount of time spent on these activities makes any significant difference for adolescents as far as post-

high school enrollment and employment are concerned. This issue is examined with longitudinal data from the LSAY. The hypothesis tested is that *students who spend more time studying than working will be more likely than other students to be enrolled in postsecondary education after high school, whereas students who spend more time working than doing homework will be less likely to be enrolled in school and more likely to be working full-time after high school.*

Does Participation In Constructive Activities Prevent Risky Behavior?

The availability in two of the data sets analyzed for this study of information on the same individual adolescents over a multiyear period make it possible to examine the relationship between activity participation in mid-adolescence and the occurrence or non-occurrence of several risky behaviors in later adolescence. The major hypothesis tested is that *adolescents who participated in constructive activities during their sophomore years in high school are less likely to have engaged in various risky behaviors, such as dropping out, having a child, smoking, drinking heavily, using drugs, or engaging in delinquent conduct, by their senior years in high school*, (or, for dropouts, the years in which they would have been seniors had they stayed in school and progressed at the usual pace). Not only should this inverse relationship be observed, it should also hold up after controlling for related factors, such as the socioeconomic level of the family, the degree of parental involvement in school-related activities, and the student's prior academic performance. These factors relate positively to participation in constructive activities and negatively to high-risk behavior, and so could be responsible for an apparent inverse relationship between activity participation and risky behavior.

Understanding How Prevention May Be Occurring

In addition to testing *whether* participation in constructive activities seems to prevent risky behavior, the analyses sought to gain some insights into *how* activity participation might be working to deter such behavior. Three possible mechanisms were mentioned earlier: time displacement, commitment building, and group pressure. Although specific hypotheses

based on these hypothetical mechanisms were not formulated and tested, comparisons were made that shed some light on whether each of the mechanisms was operating and on their relative importance. The following paragraphs briefly describe some of these comparisons and the reasons for making them.

Total time spent in activities versus specific types of activities undertaken. If time displacement is the mechanism by which risky behavior is being prevented, then the amount of time the adolescent spends in activities should be more important than the specific activities in which he or she participates (provided the activities are positive or at least neutral in character). The more time the youth spends in such pursuits, the less should be his or her chances of engaging in risky behavior, according to the time displacement theory. However, if some activities are more effective than others at deterring risky behavior, or if the likelihood of risky behavior does not decline steadily as time in constructive activities increases, that would indicate that other mechanisms are at work instead of, or in addition to, time displacement.

Comparisons among different types of activities. If the prevention of risky behavior depends on the adolescent's commitment to conventional institutions and career pathways, then the amount of time spent in constructive activities is less important than the extent to which those activities develop skills, nurture aspirations, and bolster the youth's sense of self-worth and self-efficacy. Activities that lead to these kinds of personal development should be more of a deterrent to high-risk behavior than those that do not.

Comparisons among different forms of risky behavior. According to the presumptions underlying the group pressure mechanism, the important thing about an activity is the sense of group belonging it engenders, and the beliefs held by group leaders and members. If the group code opposes a specific form of risky behavior, like smoking or illegal drug use, then participation in the activity will act as a deterrent to that risky behavior. If, on the other hand, group members do not disapprove of the risky behavior, or worse, have favorable attitudes toward it, then participation will not prevent the behavior and may actually encourage it.

Unfortunately, the large-scale data sets containing measures of youth time use provide little information about the attitudes and values of the other group members. Thus, it is not possible to directly examine the relationship of member beliefs to the deterrence of risky behavior. Some indirect evidence is provided, though, by comparing how much deterrence occurs with respect to different forms of risky behavior.

We know, for example, that the consumption of alcohol is generally considered an acceptable form of adult behavior in U.S. society, and that American adolescents view drinking as less harmful than use of cocaine or marijuana or tobacco (Johnston, O'Malley, and Bachman, 1984, p. 93). Thus, if participation in organized youth activities has less of an effect on binge drinking than it does on using marijuana or cocaine or smoking tobacco, that result would lend credence to the notion that group pressures are important in enabling group activities to deter risky behavior.

Summary of Hypotheses About Adolescent Time Use

In summary, here is a list of the hypotheses about adolescent time use that were tested with data from the three national studies:

1) Based on the results of previous research, relatively few U.S. adolescents are spending significant portions of their free time in constructive activities.

2) Because more of them are enrolled in college-preparatory programs, high school students in the 1990s are spending more time studying and participating in academic clubs than did students in the 1970s and 1980s. However, a competing hypothesis is that because it is relatively easy to get into college and high schools are reluctant to flunk anyone out, high school students in the 1990s are not spending any more time studying than did students in the 1970s and 1980s.

3) Because of the "back to basics" movement and decreased emphasis on arts and crafts, high school students in the 1990s are spending less time in non-academic

extracurricular activities, like band or chorus and art, drama, or hobby clubs than students in the 1970s and early 1980s did.

4) Students from families with higher socioeconomic statuses are more likely to spend significant portions of their free time in constructive activities of various sorts than students from families with lower socioeconomic statuses.

5) Students from families with lower socioeconomic statuses are more likely to spend significant portions of their free time working for pay than are students from families with higher socioeconomic statuses.

6) Students whose parents are highly involved in school-related activities are more likely to participate in constructive extracurricular activities in and out of school than students whose parents display low levels of involvement.

7) High school students who spend more time studying than working will be more likely than other students to be enrolled in postsecondary education after high school, whereas those who spend more time working than doing homework will be less likely to be enrolled in school and more likely to be working full-time after high school.

8) High school students who participate in extracurricular activities are less likely to engage in various risky behaviors, such as dropping out, having a child, smoking, binge drinking, using drugs, or engaging in delinquent conduct, by the time they are (or, for dropouts, would have been) in twelfth grade.

FINDINGS

The description of adolescent time use in the United States and the results of the hypothesis tests are presented in four sections. The first part is an overall profile of teenage activity patterns, based on data from all three national studies. The second uses data from the National Education Longitudinal Study, an earlier study called High School and Beyond, and Monitoring the Future to document how adolescent time-use patterns have changed (or remained the same) during the last two decades. Differences in time use across socioeconomic groups and by parent involvement and student achievement levels are presented in the third section. The fourth and final part presents findings on the relationship of adolescent activity patterns to postsecondary school enrollment and employment, and to later risky behaviors.

How American Adolescents Spend Their Time

Today's teenagers have a lot of discretionary time available to them. For most teens, that free time is not being filled with activities that build their skills or characters. American high school students go to school about six hours a day five days a week (U.S. Department of Education, 1994, p. 316). They are not doing a great deal of homework: less than half an hour a day. They spend relatively little time in school-sponsored extracurricular activities or in lessons, classes, or organized group activities outside of school. Their parents do not demand much of them in the way of household chores. Few work for pay outside the home until they are in their junior or senior year of high school.

How then are teenagers spending the considerable amounts of free time at their disposal? They are watching television. They are talking with friends on the telephone or hanging out with them in malls and other neighborhood hangouts. For the most part, they are <u>not</u> reading for pleasure or to satisfy their curiosity about the world. They are <u>not</u> pursuing hobbies or spending a lot of time working on computers. As they get older, they are working for pay at relatively low-skill jobs that do little to prepare them for the more complex and demanding jobs at which they are later likely to work.

In short, the data from the three large-scale studies done in the late 1980s and early 1990s confirm the hypothesis derived from smaller-scale, more intensive studies of adolescent time use done in the early and middle 1980s (Csikszentmihalyi and Larson, 1984; Timmer et al., 1985: Robinson, 1991): relatively few U.S. adolescents are spending significant portions of their free time in constructive activities. The following sections describe specific findings about leisure-time activities, time spent in homework and work for pay, involvement in school-sponsored extracurricular activities, and participation in organized activities outside of school.

Relative frequency of various leisure-time activities

Data from the 1990 round of the National Education Longitudinal Study (NELS) show the frequency with which 10th graders engage in various leisure time activities. According to the students' own reports, socializing with friends and watching television are daily pursuits of most 10th graders, whereas relatively few read for pleasure, work on hobbies or crafts, or interact with adults on a daily basis (Figure 1). Sixty percent of 10th graders report talking with friends on the telephone almost every day, while only 18 percent report reading for pleasure almost every day and 15 percent report working on hobbies, art, or crafts that often.

It is also interesting to note that only 30 percent of 10th graders report talking or doing things with their mothers or fathers almost every day (compared to the 60 percent who talk with their friends almost every day). However, two-thirds of 10th graders talk or do things with their parents at least once or twice a week. Only 11 percent report talking or doing things with other adults on a daily basis, and less than half (41 percent) interact with other adults as much as once or twice a week or more (Figure 1).

For those who believe that technological advances and the world of computers are offering young people more stimulating activities for their free time, the NELS data offer a less rosy view. Only 5 percent of the 10th graders report using personal computers almost

every day, and not many more (15 percent) use computers at least once or twice a week. In general, adolescents do not spend their leisure time learning new skills.

A similar time-use profile is obtained from the reports of high school seniors in the 1992 round of the Monitoring the Future (MTF) survey (Figure 2). Majorities of seniors report watching television, getting together with friends, engaging in sports or exercise, working around the house, yard, or car, and riding around in cars for fun at least once a week. But only minorities of seniors report playing an instrument or doing arts or craft work or creative writing that often. While a majority say they read books, magazines, or newspapers at least once a week, less than half do so on a daily basis.

Time spent doing homework and working for pay

Despite their high educational aspirations, American youth devote very little time to homework. The survey data do not reveal whether this is because teachers do not assign much homework or because many students do not bother to do all that is assigned. Probably both play a part. In the Longitudinal Study of American Youth (LSAY), well over half of junior high and high school students reported spending less than 7 hours per week on homework (Figure 3). In a typical week in 1987-1989, two-thirds of 7th and 9th graders, and approximately 60 percent of 10th and 12th graders, spent less than one hour per day on homework. Less than 10 percent of the junior high school students and less than 15 percent of the high school students spent as much as two hours per day on homework. These figures parallel those found by Timmer and her colleagues (1985) and Robinson (1991) in the early and middle 1980s. They are also generally consistent with student reports on homework in the NELS and MTF. Indeed, as described below in the section on changes over time in adolescent activity patterns, the NELS data depict students as spending even less time on homework -- about 3 hours per week for the average 10th grader -- than the LSAY data do.

Interestingly, the difference in the amount of time spent on homework between the younger and older students is quite small. One might expect high school seniors to spend substantially more time on homework than freshmen or sophomores, but the LSAY data

indicate this is not the case. The percentage of students spending at least 1 hour per day doing homework increases only from 30 percent in 7th grade to 35 percent in 9th grade, to around 40 percent in 10th and 12th grades.

In contrast, the LSAY data show that the amount of time students spend working for pay changes substantially as they get older (Figure 3). Nearly three-quarters of 10th graders are working less than 7 hours per week, and most of these are not working for pay at all. However, by 12th grade, more than half -- 60 percent -- of 12th graders are working at least 7 hours per week. The percentage of students working 14 or more hours per week increases dramatically from 16 percent in 10th grade to 49 percent in 12th grade. As noted earlier, however, many of the jobs that occupy the time of adolescents are low-skilled ones that involve little interaction with adults.

Participation in extracurricular activities at school

Although a majority of high school students report participating in noncompulsory activities at school, most spend relatively little time in such activities. According to data from the National Education Longitudinal Study (NELS), in 1990 the typical 10th grade student in the U.S. spent less than an hour a week in school-sponsored extracurricular activities. Forty percent of the students said they spent no time in these activities in an average week, and 35 percent reported spending 4 or fewer hours. One-quarter reported spending a total of 5 or more hours per week in various teams or clubs. Only 2 percent said they participated 20 hours or more in school-sponsored activities (Figure 4).

Participation in activities increases by the time students reach their senior year in high school, but not by much. In 1992, the NELS found that the typical 12th grade student in the U.S. spent about two hours per week in extracurricular activities. Almost a third spent no time. About a third participated between one and four hours per week. More than a third (36 percent) spent 5 or more hours in these activities. Five percent of seniors were very heavy participators, devoting 20 hours or more per week to the clubs or teams of their choice.

Number of activities. Although 40 percent of 10th graders in the NELS said they spend no time in club or team activities in a typical week, when given a list of specific activities, all but 20 percent reported that they had taken part in at least one of the types of activity on the list during the current academic year. Nearly a third said they had taken part in just one type activity, while nearly a quarter reported taking part in two different activities. Another quarter report involvement in three or more activities (Figure 4).

Specific activities. Sports were the most popular type of extracurricular activity, with a surprisingly high 46 percent of 10th grade students in the NELS reporting that they took part in at least one interscholastic sport at the varsity, junior varsity, or freshman team level.[4] Nearly 14 percent reported participating in intramural sports, making a total of 52 percent who reported some form of athletic involvement. Just over 30 percent of 10th grade students reported involvement in some form of academic club, such as ones focused on art, science, math, computers, debating, or a foreign language. More than a quarter were involved in a musical or dramatic activity, such as the school band, orchestra, or chorus, or the production of a school play or musical.

About 12 percent of 10th grade students reported that they participated in a service club, such as AFS or Key club, and a similar number were members of a vocation education or professional club, such as Future Farmers, Homemakers, or Teachers of America. Nine percent worked on the school yearbook, newspaper, or literary magazine. Slightly more than 7 percent served in student government, and a similar number participated in a hobby club, such as a chess or photography club (Figure 5).

A similar picture of the relative frequency with which students participate in different extracurricular activities was obtained from high school seniors by the Monitoring The Future survey (Figure 6). As in the NELS, team sports were the most popular activity, with nearly 40 percent of the 12th grade students surveyed in 1992 reporting that they had

[4] The NELS questionnaire listed seven different team sports from baseball to volleyball, six different individual sports from cross-country to wrestling, as well as allowing for the reporting of other, unspecified team or individual sports. It is possible that some of the students who reported taking part in varsity sports tried out for a team, but did not make it.

participated in school athletic teams to a "considerable" or "great" extent during the current school year.[5] More than half said they had participated in team sports for two or more years during some period of their high school career. As in the NELS, about one-quarter of the students reported participating in music or performing arts activities during the current year; 40 percent of the seniors said they took part in such activities at some point.

Compared to the 10th grade students surveyed in the NELS, fewer of the 12th grade students in MTF -- 14 percent -- reported participation in academic clubs.[6] But more than a third of the 12th grade students reported participation in other clubs or activities. Twelve percent of the 12th grade students reported working on the school newspaper or yearbook, and 11 percent said they served on the student council. These figures were close to the comparable percentages for 10th grade students in the NELS.

Looking at the "half empty" portion of the glass, it is noteworthy that well over half of all high school seniors surveyed in the 1992 MTF were not currently participating, nor had they ever participated in music or performing arts, student council, or the school newspaper or yearbook. Almost half of the 12th grade students were not participating in sports, and approximately one-third had never taken part in sports activities. Finally, about one-third of seniors did not participate in any other school club or activity, nor had they done so in the past. In sum, a substantial proportion of today's high school seniors are not currently participating in school activities and a sizable proportion have never participated in such activities during their high school careers.

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[5] The question used in Monitoring The Future mentioned "athletic teams," but did not list specific kinds of teams, as the sports question in the National Education Longitudinal Study did. There was also no separate question on intramural teams.

[6] This may be because only science, math, and language were given as examples of academic clubs in the MTF questionnaire, whereas other types, such as art or debating, were not mentioned.

Participation in lessons, classes, and group activities outside of school

Considerable numbers of American adolescents report involvement in some organized youth activities outside of school, with organized sports and religious or religion-related activities being the most common forms of participation. Here too, however, it is usually only a minority of young people who participate. In the NELS, 10th grade students reported in 1990 on the frequency with which they took part in various lessons, classes, and group activities outside of school (Figure 7). Forty-seven percent reported attending religious activities, with less than one-third reporting that they did so at least once a week. Thirty-seven percent of the 10th grade students attended community youth groups or recreational programs, but only one-fifth did so on a weekly basis.

Participation in non-school based lessons or classes in which young people learn artistic or athletic skills was less common. About one-quarter of 10th grade students took classes in music, art, language, or dance, while about one-fifth took lessons in sports such as tennis, swimming, or karate. It was also about one-in-five students who did volunteer or community service work, with only 7 percent doing so on a regular, weekly basis.

In Monitoring The Future, 12th grade students were asked about organized non-school activities in which they had ever participated for two or more years. In 1992, nearly half of the students reported that they had been involved in organized sports for such an extended period, and 43 percent had participated this long in a church group or other religion-related activity (Figure 8). About one-third had participated in scouting for a two-year or longer period, but less than one-fifth had taken part in a vocational club, such as 4-H, and only one-tenth had belonged to a Boys or Girls Club for a similar period.

Although the above reports on the types of activities that adolescents engage in and the amounts of time they devote to these activities are derived from several different data sets collected at different points in time and using different methodologies, the basic conclusions remain the same. American adolescents are spending very little time on activities that strengthen their ties to society or provide them with the necessary skills to succeed in school

and in the labor force. There is clearly ample room to more fully engage students in the lives of their schools and in constructive activities outside of school.

How Adolescent Time Use Patterns Have Changed

Are today's teenagers doing more homework and studying to go along with their higher educational aspirations and their more frequent enrollment in college-preparatory programs? No, they are not. Comparisons of student time-use reports from the 1990s with parallel reports from the mid-1970s or early 1980s show more constancy than change. The changes that have occurred are more likely to be in a negative rather than a positive direction as far as intellectual effort and constructive use of time are concerned.

In 1990, for example, 10th grade students in the NELS were asked to estimate the total number of hours per week they spent doing homework outside of school. In 1980, a large national sample of 10th grade students was asked a similar question as part of a study called High School and Beyond.[7] The average (median) 10th grade student in 1990 reported spending about three hours *per week* doing homework for all subjects, and so did the average 10th grade student in 1980. The percentage reporting some homework time, but less than 5 hours per week declined slightly, from 63 percent to 59 percent, while the percentage reporting 10 or more hours of homework per week increased, but just barely, from 11 percent to 14 percent (Figure 9). This is hardly a bold leap forward in student diligence.

Reports from 12th grade students in two rounds of the Monitoring the Future survey conducted 16 years apart display a similar lack of change in homework hours. Forty-six percent of 12th grade students in 1976 reported spending 5 or more hours per week on homework, and so did 46 percent of 12th grade students in 1992 (Figure 10). On the other hand, 39 percent of 12th grade students in 1976 reported reading 6 or more books during the year that were not assigned by teachers, whereas only 26 percent of 12th grade students reported doing this much voluntary reading in 1992 (Figure 10).

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[7] The question wordings and answer categories were somewhat different in the two studies. Response categories were combined to make them more comparable.

In both 1976 and 1992, large majorities of 12th grade students reported watching television daily: 71 percent in 1976 and 74 percent in 1992. Reports of weekly television watching remained stable at 95 percent. The percentage of 12th graders who watched significant amounts of television (i.e., 2 or more hours each weekday) decreased somewhat, but remained very high, from 1976 (69 percent) to 1992 (62 percent). Obviously, American students are spending a great deal more time watching television than doing homework.

They are also spending more time working at jobs than doing homework, at least when they are high school seniors. Virtually the same percentage of 12th grade students reported working 6 or more hours per week during the school year at paid or unpaid jobs: 63 percent in 1976 and 64 percent in 1992 (Figure 10). There was also little change between 1976 and 1992 in the proportions of 12th grade students who, on a daily or weekly basis, got together with friends, participated in sports or exercising, spent time alone, rode around in a car for fun, played an instrument or sang, went shopping or window shopping, or did art or craft work (Figures 11 and 12).

Areas in which significant change in time use did occur between 1976 and 1992 included the following:

- reading of books, magazines, or newspapers, where the number of 12th grade students who read daily declined from 59 percent to 47 percent;
- working around the house, yard, garden, or car, where the number who did household chores daily declined from 41 percent to 29 percent, while the number doing chores at least once a week fell from 78 percent to 68 percent;
- attending religious services, where the number going at least once a week declined from 41 percent to 32 percent.

Two leisure-time activities that have become more frequent are going to parties and creative writing: the percentage of 12th grade students who report partying with friends at least one a week increased from 31 percent in 1972 to 38 percent in 1992. The proportion doing some creative writing once a week or more often climbed from 15 percent in 1976 to 22 percent in 1992 (Figure 12).

Apart from the modest increase in creative writing, there was one other small sign of growth in academically-oriented activity. The proportion of 10th grade students participating in academic clubs at school increased by a fifth, from 26 percent to 31 percent, between 1980 and 1990. The increase was observed when reports of participation in specific types of extracurricular activities in the NELS survey of 10th grade students were compared with responses to similar questions in the High School and Beyond base year survey of 10th grade students (Figure 13). On the other hand, the same comparison showed that participation in band, orchestra, or chorus was down by nearly a third, from 31 percent in 1980 to 22 percent in 1990. Also, involvement in traditional hobby clubs, such as photography or chess, was down by two-thirds, from 21 percent in 1980 to 7 percent in 1990.

The reason for these declines is not altogether clear. Many people believe that fewer high schools are offering organized music, art, drama, and hobby activities because of budget cutbacks and policies that downplay the arts in favor of science, math, and other "core" subjects. As noted earlier, however, survey evidence indicates that such programs remain available in most public high schools (O'Brien and Rollefson, 1995). The growth of personal computers in schools may have been partly responsible for the decline in traditional hobby clubs. (Computer clubs were counted as "academic" activities in the NELS tabulations). Levels of participation in school-sponsored athletic teams were comparable to those reported by 10th grade students a decade earlier. Participation in cheerleading and drill teams was down by a third over the decade, however (Figure 13).

Overall, then, the increased emphasis on academics that supposedly governed American public schools during the 1980s has not resulted in much apparent change in one important area of student behavior: studying. As we have seen, high school students are spending no more time on homework than they did ten or fifteen years ago, and they are spending less time reading than they did in the past. The data seem to lend support to those who argue that there is not much pressure on American students to work harder, because it is relatively hard to flunk out of high school, and relatively easy to get into college.

The finding that today's adolescents are spending less time in non-academic extracurricular activities, such as band, orchestra, chorus, drama, and art or hobby clubs, may be a response to the increased emphasis on "back to basics" and mathematics and science. But it hardly seems like a positive development, except from a very narrow view of what constitutes constructive use of adolescents' time.

How Adolescent Time Use Varies With Family Characteristics

Are teenagers from families that are socially or economically advantaged more likely to spend time in constructive activities than teenagers from less advantaged families, as would be expected from both ecological systems theory and previous time use research? Data from the LSAY on time spent on homework and data from the NELS on participation in school-sponsored extracurricular activities both show considerable variation across socioeconomic groups, with teens from higher status families spending a good deal more time in constructive activities than those from lower status families. Parent involvement in school-related activities, however, is even more strongly associated with constructive time use by students.

Homework time

In 1987, the LSAY found that 41 percent of all 10th grade students in the U.S. spent 7 or more hours on homework in a typical week, and 13 percent spent 14 or more hours. Among 10th graders from families in the lowest socioeconomic (SES) quartile, only one-third studied at home for at least 7 hours per week and just 8 percent studied for 14 or more hours per week. By contrast, among students from families in the highest SES quartile, over half (55 percent) did 7 or more hours of homework and 18 percent did 14 or more hours of homework each week (Figure 14).

Similarly, students whose parents had relatively low levels of educational attainment spent relatively little time on homework each week. About one-third of students whose parents' highest level of education was a high school diploma or less spent at least 7 hours

per week on homework, compared to about half (48 percent) of those who had at least one parent with a college degree (Figure 14).

Parent involvement. Among 10th graders whose parents were not very involved in school activities or communication with teachers, 28 percent did homework for 7 or more hours per week and only 4 percent spent 14 or more hours per week on homework. In contrast, more than half (56 percent) of 10th graders with highly involved parents spent at least 7 hours and 16 percent spend at least 14 hours studying at home each week (Figure 14). This suggests that the amount of time students spend on homework is not only a reflection of the amount of homework assigned by their teachers, but is also indicative of the extent to which parents encourage their children to do homework.

Family structure. The number of parents present in the home was also associated with time spent on homework. A larger proportion of 10th graders with two parents at home (45 percent) than with one parent at home (36 percent) spent at least an hour per day on homework (Figure 14). This difference partly reflects the higher income and education levels that two-parent families tend to have, relative to single-parent families. It may also reflect the availability of a second parent to encourage the student to do homework.

School and student characteristics. Other characteristics associated with significant variations in time spent on homework included the type of program in which the student was enrolled, the student's grade point average, the sex of the student, and the region of the country and the urbanicity of the area in which the family lived. Students in general or vocational and technical programs in school spent far less time studying at home than those in academic or college preparatory programs. Regrettably, though perhaps not surprisingly, students who received relatively poor grades spent less time on homework than those who received higher grades (Figure 15).

Other demographic characteristics. On average, female students spent more time on homework than male students. Students residing in the Western region of the U.S. spent somewhat more time on homework than those in the Northeast or Midwest. Likewise,

students from families that lived in the suburbs of major metropolitan areas devoted more time to homework than either those who lived in central cities or those living outside of major metropolitan areas (Figure 15).

Time in extracurricular activities at school

Students who come from more advantaged family backgrounds are more likely to be involved in school-sponsored clubs and teams than those from less advantaged families. This is true whether advantage is measured by the socioeconomic quartile in which the family falls, parent education level, family income, welfare receipt, language minority status, single-parent status, or racial or ethnic background. Parent involvement in school-related activities shows an even stronger relationship with student time in extracurricular activities than does the socioeconomic level of the family.

Advantaged versus disadvantaged families. In 1990, the NELS found that 60 percent of all 10th grade students in the U.S. spent at least one hour per week in school-sponsored extracurricular activities, and 25 percent devoted 5 or more hours per week to such activities. However, 10th graders whose families were in the highest socioeconomic quartile were half again more likely to spend at least one hour in extracurricular activities than those whose families were in the lowest quartile (72 percent of the former did so, compared to 48 percent of the latter), and more than twice as likely to devote 5 or more hours to such activities (34 percent of the former group did so, compared to 14 percent of the latter) (Figure 16).

Similar differences in extracurricular participation were found between students from families with relatively high levels of parent education or family income, compared to those from families with low levels of education or income (Figure 16). Time in extracurricular activities was found to be lower, on average, among students from families receiving welfare, compared to those not receiving such benefits; among students from language-minority families, compared to those from families in which at least one parent spoke English at home; among students from single-parent families or stepfamilies, compared to

those from families in which both birth parents were present in the household; and among students from black or Hispanic families, compared to those from white or Asian families (Figure 16).

Involved versus uninvolved parents. Parents who were highly involved in school-related activities were likely to have children who were highly involved. Conversely, when parents displayed low levels of involvement in their children's schooling, the student was apt to be disengaged from school-sponsored activities as well. Compared to high-school sophomores whose parents had low involvement in school-related activities, those whose parents were highly involved were twice as likely to participate in clubs or teams for at least one hour per week, and four times as likely to engage in extracurricular activities for 5 or more hours per week (Figure 16).

School and student characteristics. Students who are enrolled in academic or college-preparatory programs in school are more likely to participate in extracurricular activities than those who are enrolled in general or vocational/technical programs. Only around half of 10th graders in general or vocational/technical programs spent one hour or more per week in extracurricular activities, whereas more than three-quarters of those in academic or college-preparatory programs spent some time in these activities. Twice as many of the college-prep students as of the vocational education students (33 percent versus 16 percent) participated in club or team activities for 5 or more hours per week (Figure 17).

Students who have done well in school, as evidenced by their grades in junior high school, are more likely to be involved in extracurricular activities. Compared to 10th graders whose 8th grade averages were in the lowest quartile, those whose averages were in the highest quartile were almost three times as likely to spend 5 or more hours per week in extracurricular activities (13 percent versus 36 percent) (Figure 17).

Participation in extracurricular activities tends to be more widespread in private than in public schools. Tenth grade students in private schools that were not religion-affiliated were one-third more likely than 10th graders in public schools to spend at least one hour per

week in extracurricular activities (80 percent versus 60 percent) and half again as likely to spend 5 or more hours per week in extracurricular activities (37 percent versus 24 percent). Tenth graders in Catholic and other religion-affiliated private schools fell in between: they were more likely to participate than public-school students, but less likely than students in other private high schools (Figure 17).

Tenth grade students in schools with high percentages of minority students (50 percent or more) were somewhat less likely to participate in extracurricular activities than students in schools with relatively low minority enrollments (less than 25%). However, these differences were not as substantial as the public school-private school contrasts (Figure 17).

Other demographic characteristics. Time spent in extracurricular activities showed relatively little variation by sex of student, region of the country, or central city versus suburban versus non-metropolitan residence (Figure 17).

Extracurricular participation among 12th grade students. The 1992 round of the NELS found that amounts of time spent in extracurricular activities among 12th grade students in the U.S. were generally higher than those observed among 10th grade students in 1990. Despite this difference in average level, the patterns of variation in participation across groups were very similar to those observed among the 10th graders (Figure 17 supp.).

Time spent working for pay

Inasmuch as the majority of 10th graders are not working for pay or working very few hours per week, data on the amounts of time 12th graders spent working for pay illustrate how family, school, and student characteristics relate to teenagers' participation in the paid labor force. These data come from the 1989 round of the LSAY. The LSAY found that 61 percent of 12th grade students in the U.S. worked at least 7 hours per week, while 49 percent worked 14 or more hours per week.

In a number of respects, the patterns found with respect to paid work are the opposite of those seen with respect to time spent on homework and in extracurricular activities. That is, characteristics associated with students spending relatively little time on homework or in club and team activities were associated with larger amounts of time spent working for pay. The differences are most apparent when looking at paid work for 14 or more hours per week, suggesting that working for fewer hours is common to most groups of high school seniors.

Advantaged versus disadvantaged families. Students from relatively disadvantaged family backgrounds were more likely to be working for pay for 14 hours or more per week. This is not surprising, given that students from less advantaged families have more of an economic need to work than students from wealthier families. Specifically, students in the lower three SES quartiles differed from those in the highest quartile: slightly over 50 percent of 12th graders in the second or lower quartiles were working at least 14 hours per week compared to 40 percent of those in the highest SES quartile (Figure 18).

Parent educational attainment was also associated with the amount of time students spent working for pay each week. Over half of 12th graders whose parents' highest educational attainment was a high school diploma or less were working at least 14 hours per week, compared to 43 percent of those having at least one parent with a college degree, and 39 percent of those with a parent who had earned an advanced degree. On the other hand, students from two-parent and single-parent families differed very little in the amounts of time they spent working for pay (Figure 18).

Involved versus uninvolved parents. Twelfth grade students whose parents displayed low or moderately low levels of involvement in school-related activities were more likely to be working a considerable number of hours per week than those with moderately or highly involved parents. Fifty-five percent of the former two groups were working 14 or more hours per week, compared with 43 percent of the latter two groups (Figure 18).

School and student characteristics. Students enrolled in academic or college-preparatory programs were only slightly less likely to be working 14 or more hours per week than students enrolled in general or vocational/technical programs. On the other hand, only about a third of students whose averages were mostly A's or mostly A's and B's worked 14 or more hours per week, compared with half or more of those with lower grade point averages (Figure 19).

Other demographic characteristics. Female 12th grade students were slightly more likely to be working for pay than male students, but differences were slight. Students living in the Northeast were most likely to be working 14 or more hours per week, whereas those living in the West were least likely (57 percent versus 40 percent). Those in the Midwest or South were intermediate, with about half working 14 or more hours per week. Students in large central cities or their suburbs were more likely to be working 14 or more hours per week than those living outside of major metropolitan areas (Figure 19).

Summary

To summarize, the results from the LSAY and NELS confirmed all three of the hypotheses posed earlier about the relationship of family characteristics to adolescent time use patterns. First, students from families with higher levels of education or income were more likely than those from families with lower education or income levels to spend significant portions of their discretionary time in constructive activities. This pattern was found with respect to both studying at home and participation in extracurricular activities.

Second, students from families with lower education and income levels were more likely to spend substantial portions of their out-of-school time working for pay than were students from families with higher education or income levels. Third, students whose parents were highly involved in school-related activities spent more time doing homework and engaging in extracurricular activities than did students whose parents were relatively uninvolved with school. Students in the latter group were more likely to spend their free time working for pay.

These findings all support the larger conclusion that students who are most in need of constructive free-time activities, because of their relatively disadvantaged family backgrounds, are least likely to be engaging in these activities. This conclusion is reinforced by results showing more constructive use of free time by students in private as opposed to public schools, those in academic as opposed to general or vocational programs, and those with higher as opposed to lower grade-point averages.

How Adolescent Time Use Relates To Postsecondary Schooling and Employment

Given the patterns of association between family and students characteristics and the amount of time they spend on homework and paid work, it is important to know whether the amounts of time students spend on these activities affect their chances of postsecondary school enrollment or employment. To examine these issues, 10th and 12th grade students from the LSAY were classified into four groups according to the amounts of time they reported spending on homework and working for pay. The groupings were as follows:

1) High homework hours, High work hours;
2) High homework hours, Low work hours;
3) Low homework hours, High work hours; and
4) Low homework hours, Low work hours.

In this classification, a "high" number of hours is 7 or more per week and a "low" number of hours is less than 7 per week. The percentages of the sample falling into these categories in 10th grade were: 1) "involved in both," 11 percent; 2) "homework focused," 31 percent; 3) "work focused," 16 percent; and 4) "involved in neither," 43 percent.

The results from the longitudinal analysis show that the patterns of time students spent on homework and paid work in 10th grade were reflected in their postsecondary school enrollment statuses and employment statuses one year after high school graduation. Those who were "homework-focused" in 10th grade were most likely to be enrolled full-time in

postsecondary school one year after high school graduation; 65 percent of this group went on to be enrolled full-time (Figure 20).

By contrast, only 32 percent of the "work-focused" students in 10th grade went on to be enrolled full-time right after high school. They were the least likely of the four groups to be enrolled full-time, and to be enrolled in school at all. Half of those in the "work-focused" group were not enrolled one year after the nominal time for high school graduation. The other two groups fell between the "homework-focused" and "work-focused" groups, with the "involved in both" group having higher rates of full-time enrollment (55 percent) and overall enrollment (66 percent) than the "involved in neither" group (45 percent of whom were enrolled full-time, and 59 percent of whom were enrolled at all).

Relationship to post-high school employment. As would be expected, the homework/paid work grouping shows a different relationship with post-high school employment than with postsecondary school enrollment. Those students who were "work-focused" in 10th grade were most likely to be working full-time after high school graduation, with 36 percent working full-time. Those least likely to be employed full-time were the students who were "homework-focused" in 10th grade; only 15 percent of them were working full-time one year after high school graduation (Figure 20).

As noted above, the largest group of 10th graders fell into the category of those spending little time on both homework and paid work. Full-time employment was reported among 20 percent of students from this group one year after high school graduation. In conjunction with the findings for school enrollment, the results suggest that about one-third of the "involved in neither" students were not enrolled nor employed full-time one year after high school graduation. This is similar to the percentage neither employed nor enrolled full-time observed for the "work- focused" group, (32 percent), but relatively high compared to the comparable proportions from the "involved in both" group (24 percent) and the "homework-focused" group (20 percent).

It appears to be the case that the association between doing more homework and full-time college enrollment is stronger than the association between doing more paid work and full-time employment. This indicates that the jobs that "work-focused" adolescents hold are not giving them the skills or experience necessary to obtain stable full-time employment after high school. It also suggests that schools may need to take a larger role in helping to prepare non-college-bound students for employment after high school.

Time Use in 12th Grade and Postsecondary Schooling and Employment

The combination of time spent on homework and paid work among 12th-grade students in the LSAY showed a similar relationship to postsecondary school enrollment and employment. The percentage of students falling into each of the four homework/work groups was as follows:

1) High homework hours, High work hours: 22%;
2) High homework hours, Low work hours: 15%;
3) Low homework hours, High work hours: 39%;
4) Low homework hours, Low work hours: 24%.

Given the age- and grade-related rise in adolescent employment noted earlier, it is not surprising that the percentages of students classified into the "high work" groups increased between 10th and 12th grade. By the 12th grade, the largest group of students (39 percent) consisted of those who were spending more time working than doing homework (i.e, "work-focused"), while the smallest group (15 percent) consisted of those spending more time on homework than work (i.e., "homework-focused"). However, even with this shifting distribution of student time use, the relationships with enrollment and employment after high school were very similar to those observed with respect to 10th grade patterns of homework and paid work (Figure 21).

Most students who spent a relatively large amount of time on homework in the 12th grade were enrolled full-time in college right after high school. Those who were combining

homework and work in the 12th grade appeared likely to combine work and school after graduation as well. A relatively high percentage of the "involved in both" group was enrolled full-time in postsecondary school (60 percent) and a rather high percentage was working part time (46 percent) after high school. The two groups who spent little time on homework in the 12th grade were most likely not to be enrolled at all in postsecondary education, but about half did go on to full-time enrollment. Full-time employment right after high school was most common among the work-focused 12th graders. As before, however, the association between more time working in high school and full-time employment post-high school was not as strong as that between doing more homework in high school and going on to enroll in college full-time. Again, it appears that many of the students who are not preparing for postsecondary education are not obtaining full-time jobs after high school.

Homework and work time and involvement in risky behaviors

The association between adolescent time use and later involvement in risky behaviors was examined primarily with data from the NELS, because that data set had information on a richer set of problem behaviors than did the LSAY. Nonetheless, there was information in the LSAY on cutting classes, smoking, and dropping out by the 12th grade. The relationship of each these behaviors to time spent doing homework and paid work was examined. The findings were that the 10th graders most likely to be engaging in these problem behaviors were those who were "work-focused." Among those spending little time on homework and a larger amount of time working for pay, 40 percent cut classes now and then while in 10th grade, 24 percent were smokers in 11th grade, and 20 percent were dropouts by what would have been their senior year in high school (Figure 20).

By comparison, the "homework-focused" students were least likely to be engaging in risky behaviors. Among those spending more time on homework than paid work, 20 percent cut classes now and then, only 7 percent were smokers in 11th grade, and only 5 percent were dropouts by the 12th grade. Interestingly, 10th graders at the opposite ends of the spectrum as far as time studying at home and working for pay, i.e., those spending 7 or more hours on both and those spending 7 or more hours on neither, appeared very similar in

terms of the proportions who went on to engage in risky behaviors. The problem behavior frequencies for the "involved in both" and "involved in neither" groups lie in-between those observed for the "work-focused" and "homework-focused" groups (Figure 20).

The relationships of homework and work time among 12th-grade students to their participation in risky behaviors were very similar to those observed with the 10th-grade groups. The work-focused students in 12th grade were the ones most likely to be cutting classes and smoking cigarettes, while the homework-focused students were least likely to be doing these things. The "involved in both" and "involved in neither" groups were intermediate with respect to smoking, but comparable to the homework-focused group with respect to cutting classes (Figure 21).

Adolescent Time Use and Involvement in Risky Behaviors

Data from three waves of the National Education Longitudinal Study that began in 1988 were used to examine the relationship between adolescent time use and the occurrence of risky behaviors like drug use, delinquency, and teen parenthood. In relating time use to the development of risky behaviors, seven different types of problem behaviors or behavior-linked events were analyzed. The occurrence of the behaviors and events was assessed from student self-reports in questionnaires they filled out either as students in the 10th grade (in 1990) and 12th grade (in 1992) or as students in the 10th grade and dropouts in 1992. The criterion events and their overall frequencies of occurrence were as follows:

1) dropping out of school between the 10th and 12th grades:	11 percent;
2) having been suspended in the current school year:	8 percent;
3) having or expecting a child:	8 percent;
4) having been arrested in the last year:	6 percent;
5) currently smoking at least one cigarette daily:	27 percent;
6) having used marijuana or cocaine in the last 12 months:	26 percent;
7) having had 5 or more drinks in a row in the past two weeks:	41 percent.

Participation in extracurricular activities was assessed as of the 10th grade, when all of the young people in the panel under study were still students. The relationships between risky behaviors and three different aspects of activity participation were analyzed. These were:

1) the total time that the student spent in school-sponsored extracurricular activities in a typical week;

2) the number of different activities in which the student was involved; and,

3) the specific types of activities in which the student participated (e.g., in varsity or junior varsity sports; intramural sports; band, orchestra, chorus, or school play or musical; vocational clubs such as Future Farmers of America; and so on).

Relationship of total time spent in extracurricular activities to the development of problem behaviors

Young people who were minimally involved in extracurricular activities were more likely than other youth to drop out of school and to exhibit a variety of risky behaviors, such as smoking, illicit drug use, delinquency, and teen parenthood. Greater involvement in extracurricular activities was generally associated with lower rates of engaging in risky behaviors. However, differences between students who devoted sizable amounts of time to extracurricular activities (5-19 hours per week) and those who devoted low-to-moderate amounts of time (1-4 hours per week) were often small and not always statistically reliable. Furthermore, there appeared to be a curvilinear relationship such that young people who devoted very substantial amounts of time (20 hours or more) to extracurricular activities were more apt to exhibit risky behaviors than those who devoted sizable but not extreme amounts of time to the activities (Figure 22).

To illustrate: compared to 10th grade students who reported spending a high number of hours (5-19) per week in extracurricular activities, those who reported spending no time in school-sponsored activities were:

- six times more likely to have dropped out of school by the time they would have been seniors;
- three times more likely to have been suspended in their sophomore or senior years;
- two-and-a-half times more likely to have become teen parents by their senior years;
- twice as likely to have been arrested by their senior years; and,
- about three-quarters more likely to have smoked cigarettes or used drugs as sophomores or seniors.

The contrasts between the non-participators and those who devoted low-to-moderate amounts of time to extracurricular activities were not as great as those with high participators, but they were still marked. For example, students in the former group were:

- twice as likely to have been suspended or to have dropped out of school;
- about half again as likely to have used illicit drugs or been arrested; and,
- more than a third more likely to have smoked cigarettes or become teen parents by their senior years.

One risky behavior (out of the seven examined) showed a less pronounced relationship with total time in extracurricular activities than the others. That was binge drinking. The proportion of students who had engaged in binge drinking was almost a fifth lower among students who had high involvement in extracurricular activities than among extracurricular non-participators. Although statistically significant, this was a considerably smaller difference than those observed with the other risky behaviors. Furthermore, as shown below, the binge drinking difference did not remain significant when other, related factors were controlled. The fact that binge drinking behaved differently than the other risky behaviors may have to do with the greater social acceptability of drinking in adult society, compared with cocaine or marijuana use. In addition, as described below, one form of extracurricular activity -- team sports -- seems actually to predispose young people to binge drinking.

Controlling for related factors

The lower incidence of risky behaviors among young people who are involved in extracurricular activities may be wholly or partly due to the fact that, as shown above, students who participate in these activities are more likely to have gotten good grades in school in the past and to be currently enrolled in college-preparatory programs. Participators are also more likely than non-participators to come from families that are well-educated, prosperous, and involved in school-related activities themselves. It may be these related factors, rather than extracurricular participation as such, that help to protect the young people from potentially detrimental behaviors like dropping out, smoking, and drug use.

Multivariate analysis methods were used to control at least partly for the effects of family, student, and school characteristics and to reveal whether any association between extracurricular participation and risky behaviors remained after these related influences were taken into account.[8] Family characteristics entered into the analysis were the education level of the student's more educated parent, and whether the family's socioeconomic status fell into the first (lowest) quartile, or the 2nd, 3rd, or 4th (highest) quartile, as estimated from information about the parents' occupations and household possessions. Also entered were whether the family had received welfare in the last year, and whether the parents spoke a language other than English as their main language at home. Family structure was taken into account by coding whether the parents or guardians present in the home with the student were the biological or adoptive mother and father (reference group), the mother only, the mother and a stepfather, the father only, the father and a stepmother, or if neither biological parent was present.

The level of parent involvement in school-related activities was assessed from student responses to a series of questions about the parents meeting with teachers, going to PTA meetings, etc., and entered into the analysis. Based on their responses, students' families were categorized as displaying low, moderate (reference group), or high levels of

[8] Multiple logistic regression was the analytic method used. The regression analyses are summarized in Tables 1 through 18.

involvement, or they were put into a missing information category on the involvement variable to avoid throwing out the substantial number of cases for whom this was true.

Student characteristics entered into the analysis were the student's sex, and whether the student's racial and ethnic background was black, Hispanic, Asian or Pacific Islander, or white non-Hispanic (reference group). Also included were whether the student's grade point average in the eighth grade was in the first (lowest) quartile, or the 2nd, 3rd, or 4th (highest) quartile, and whether, in the 10th grade, the student was enrolled in a general high school program, a vocational/technical program, an academic or college-preparatory program (reference group), or some other type of program.

Two school characteristics were taken into account in the analysis: whether the school was a private-religion affiliated school, a private school that was not affiliated with a religion, or a public school (reference group); and whether the school had a high proportion (50 percent or more) of minority students, a medium proportion (25-49 percent), or a low proportion (reference group).

The results of the multivariate analyses showed that both hours per week of extracurricular participation and the control variables were associated with the occurrence of the problem behaviors (Figure 23 and Tables 1 and 2). Most of the family, student, and school characteristics were significantly related to the probability that a student would engage in problem behaviors like dropping out, becoming a teen parent, or using drugs. Although the pattern of relationships was fairly similar from one problem behavior to the next, the strength of specific predictors varied somewhat across the different behaviors. Dropping out was most strongly related to the combined set of participation and background characteristics, whereas binge drinking was least strongly related. Becoming a teen parent, getting arrested, becoming a smoker, and using drugs fell in between these poles in terms of the strength of the overall association with the predictor set.

When the related characteristics were taken into account, the strength of the association between hours per week of extracurricular participation and the occurrence of a

problem behavior was generally diminished. However, a significant negative relationship between participation and risky behavior remained in almost all cases. The one exception was with respect to binge drinking, which did not show a significant relationship with hours of participation after the other factors were controlled (Figure 23).

The most consistent finding was that sophomores who spent no time participating in extracurricular activities had a higher chance of exhibiting risky behaviors than those who spent low-to-moderate amounts of time (less than 5 hours per week) in such activities. The non-participators were half again as likely to drop out or use drugs, a third again as likely to become teen parents or smokers, and a quarter again as likely to be arrested, compared to the low-to-moderate participators.

Sophomores who spent 5-19 hours per week in extracurricular activities had at least *as* low a likelihood of engaging in the risky behaviors as those who spent only 1-4 hours per week in extracurricular activities. With respect to some of the problem behaviors, the former group had a significantly *lower* likelihood of engaging in the behaviors than did the latter group. For example, high participators were only half as likely as low-to-moderate participators to drop out and 80 percent as likely to become smokers. Sophomores who were extreme extracurricular participators (those who reported spending 20 hours or more per week in the activities) were not significantly higher nor lower than the low-to-moderate participators in terms of their chances of engaging in risky behaviors.

Differences in the effects of extracurricular participation among males and females

Parallel analyses were carried out for only male and only female students, to discover whether extracurricular participation operated similarly or differently for the two sexes. The pattern of results was generally similar (Figures 24 and 25; Tables 3 through 6). One notable exception involved the criterion event of becoming a teen parent.

Among females, the link between extracurricular non-participation and a greater likelihood of teen parenthood was stronger than the relationship found when the sexes were combined. Female non-participators were half again as likely as low-to-moderate participators to have given birth by their senior years. Very heavy participators were also more likely to have given birth than low-to-moderate participators, but this difference was not statistically reliable. The reason for the lack of statistical significance was the small size of the subsample of females who spent 20 or more hours per week in extracurricular activities (Figure 25).

A similar pattern of differences was observed among males, but none of the differences was large enough to be deemed statistically reliable. No significant relationship between extracurricular non-participation and teen parenthood remained after controlling for related factors (Figure 24). The difference between the sexes with respect to this relationship may be because the individual male has less direct control than the individual female over whether or not he becomes a parent. Hence, chance plays a greater role in the occurrence of early parenthood among males. It may also be that male students are less candid in reporting their parenthood because the evidence is not as inescapable as it is for females.

Effects of the number of activities in which the student participates

Thus far, the analyses of the relationship between extracurricular participation and the occurrence of risky behaviors have focused on the amount of time students spent in extracurricular activities in a typical week. The number of different types of activities in which the student participated during the school year is another measure of involvement. The relationship between this measure and the occurrence of risky behaviors was examined, controlling for the influence of the same family, student, and school characteristics that were employed earlier. As before, separate analyses were conducted for male and female students.

Once again, the most consistent finding was that students who were involved in no activities were significantly more prone to risky behaviors than those who were involved in at least one activity (Figure 26; Tables 7 through 10).

Students who reported involvement in no activities during a year were a smaller and more extreme group than students who reported spending no time in extracurricular activities in a typical week. It is not surprising, then, that the former group showed even more pronounced tendencies to engage in risky behaviors than did the latter. For example, males involved in no activities were twice as likely to drop out, and two-thirds more likely to smoke, than male students who participated in one activity. Likewise, females who participated in no activities during the year were sixty percent more likely to smoke or use use drugs than females who participated in one extracurricular activity (Figure 26).

Participating in two or three or more extracurricular activities -- as opposed to only one -- was generally not associated with a further reduction in the risk of exhibiting problem behavior, at least not a statistically significant reduction. However, females who participated in three or more activities were three-quarters as likely to drop out or become teen parents as females who participated in only one activity (Figure 26).

Effects of participation in specific kinds of activities

Is one kind of extracurricular activity as good as another, as far as the prevention of youthful problem behavior is concerned? Or are some types of activities more clearly associated than others with lowering the risk of drop out, delinquency, and substance abuse? Some reasons why an activity might be especially effective in helping to prevent risky behavior are that the activity generates a lot of enthusiasm and interest in young participants, has a strong ethical component, rewards talents and skills different than those typically rewarded in academic work, or requires a training regimen that is incompatible with late-night partying or substance abuse. On the other hand, at some high schools, it is traditional for student athletes to hold beer parties after big games. Membership on such a team might

actually encourage binge drinking and perhaps other risky behaviors on the part of young people.

In terms of bivariate associations, most of the school-sponsored activities for which participation data were collected in the NELS showed negative relationships with at least some risky behaviors; i.e., those who participated in the organized activity were less likely to engage in the risky behavior. Noteworthy exceptions were participation in intramural sports (as opposed to interscholastic sports), which was largely unrelated to risky behavior, and participation in vocational clubs, which, if anything, was positively related to some problem behaviors, such as dropping out and becoming a teen parent. The latter may have been the case because students who participated in vocational clubs were apt to be in the vocational/technical or general programs in their high schools and, hence, had a higher risk of engaging in early school departure and childbearing to begin with.

Three different types of activities were selected to be examined through multivariate analyses. As before, these analyses controlled for family, student, and school characteristics that might be responsible for the observed correlation between activity participation and risky behavior. The three chosen activities were participation in interscholastic sports (varsity, junior varsity, or freshman team participation); participation in the school band, orchestra, chorus, or in a school play or musical; and participation in vocational clubs, such as Future Farmers of America, Future Homemakers of America, or Future Teachers of America.

Each of these activities tended to recognize and nurture skills and talents different from those recognized in the classroom. At the same time, the three were different in character from one another. Also, each had a large enough participation rate to allow for reasonably reliable estimates when separate analyses were conducted for males and females.

When multivariate analyses were carried out with the three activities, both sports and music/drama participation showed significant relationships with problem behaviors, but vocational club participation largely did not. Thus, the analyses involving vocational clubs are omitted from this report.

Effects of participation in varsity sports. Students who participated in varsity and junior varsity sports were significantly less likely than non-participants to drop out of school or become smokers by their senior years. Male athletes were only about four-tenths as likely to drop out and two-thirds as likely to smoke as male non-athletes. Female athletes were six-tenths as likely to drop out and about 85 percent as likely to smoke as female non-athletes. Both male and female athletes appeared to have an increased risk of having been arrested, but these differences were not statistically reliable. Varsity sports participation bore no significant relationship to illicit drug use (Figure 27; Tables 11 through 14).

Female athletes were only two-thirds as likely to become teen mothers as female non-athletes. On the other hand, male athletes were four-tenths more likely to report being fathers than male non-athletes. And both male and female athletes were significantly more likely to have engaged in binge drinking than their non-athlete counterparts. The males were half again as likely, whereas the females were more than a quarter more likely to have done so (Figure 27).

Involvement in sports seems clearly beneficial in reducing the chances that a young person will leave school or harm his or her athletic performance by taking up smoking. But the carousing and macho behavior patterns that are sometimes associated with team sports in U.S. high schools seem to pose some risks for student athletes. They increase young people's chances of taking part in group bouts of excessive drinking of beer and other forms of alcohol. Such drinking is hazardous in itself and contributes to unsafe sexual activity, motor vehicle accidents, and violence. It can also help to nurture longer-term patterns of heavy drinking which may have serious health consequences in later life.

Effects of participation in music and drama activities. Students who participated in band, orchestra, chorus, or in a school play or musical were significantly less likely than non-participants to drop out of school, be arrested, become smokers, use drugs, or engage in binge drinking by their senior years (Figure 28; Tables 15 through 18).

Male music and drama performers were only about three-quarters as likely as non-participants to drop out, be arrested, smoke, or use drugs, and only about seven-tenths as likely to engage in binge drinking as male non-performers. Female music and drama performers were only two-thirds as likely to drop out, be arrested, smoke or use drugs, and only three-quarters as likely to drink heavily, as female non-performers. In addition, female performers were only about eight-tenths as likely as non-performers to become teen mothers. Music and drama participation bore no significant relationship to teen parenthood among male students (Figure 28).

In sum, participation in school-sponsored music and drama activities is linked to lower risk of a range of problem behaviors. Unlike the case with varsity sports, music and drama participation is not associated with a greater risk of binge drinking. Just the opposite was found to be true. Given these favorable links between music or drama and student behavior, it seems particularly unfortunate that participation in these types of activities by high school sophomores declined markedly in the last decade. With renewed emphasis on the importance of music and the arts in the high school curriculum, the next decade may see some resurgence in student participation in these kinds of school-sponsored activities.

SUMMARY AND DISCUSSION

This study made use of several large-scale data bases to examine the time-use patterns of American adolescents in the late 1980s and early 1990s, compare them with those exhibited by young people 10 to 20 years ago, and test whether participation in extracurricular activities reduces the chances that young people will engage in various risky behaviors. The data analyzed came from Monitoring the Future (an annual survey of high school seniors), the Longitudinal Study of American Youth, the National Education Longitudinal Study begun in 1988, and an earlier longitudinal study called High School and Beyond. The risky behaviors studied were dropping out of school, having children while still teenagers, being delinquent, smoking, using marijuana or cocaine, and binge drinking.

The study found that U.S. teenagers have a lot of discretionary time available to them and, for most, that time is *not* being filled with activities that build their skills or characters. On average, today's 10th grade students devote only one half hour per day to homework. Less than 20 percent of them read for pleasure almost every day, only 15 percent work daily on hobbies, arts, or crafts, and just 5 percent routinely use personal computers for schoolwork or recreation. Less than a third attend religious activities once a week or more, about a fifth participate in youth groups or organized recreational programs that often, and a similar fraction take weekly classes outside of school in music, art, language, or dance. One in eight takes weekly sports lessons outside of school, while one in fourteen volunteers or performs community service activities.

How then do teenagers spend the considerable amounts of free time at their disposal? They watch television (two and a half hours per day, on average); they talk with other teens on the telephone (60 percent say they do so on a daily basis); and they hang out with friends in malls and other neighborhood hangouts (64 percent do this at least one or twice a week). As they get older, they work for pay at relatively low-skill jobs that do little to prepare them for the more complex and demanding jobs at which they are likely to later work. Sixty percent of U.S. 12th graders and 27 percent of 10th graders do seven or more hours of paid work per week during the school year.

When the study compared adolescent time use in the 1990s with that in the mid-1970s or early 1980s, overall patterns were surprisingly similar. The changes found were mostly in a negative direction as far as constructive use of time was concerned. For example, high school students in 1990 spent no more time doing homework than earlier cohorts did, despite taking courses that were supposedly more rigorous. Teenagers in the 1990s were less likely to read books, do household chores, or attend religious services on a regular basis than their predecessors were. Compared to the early 1980s, fewer students in the 1990s participated in band, orchestra or chorus in school, in traditional hobby clubs such as photography or chess, or in cheerleading or drill team. On the other hand, almost as many went out for varsity sports, and slightly more took part in academic clubs, such as science, computer, or foreign language clubs, math team, or debating society. Overall, however, the increased emphasis on academics that has supposedly dominated American education in recent years has not resulted in much apparent change in intellectual effort or studying behavior among American adolescents.

Not only is the time use of the average American teenager relatively unproductive, there is considerable inequality in the extent to which different groups of teens use their free time in constructive as opposed to idle or detrimental ways. Young people from families with low levels of parent education or family income, who would seem to be most in need of organized skill-building and character-nurturing activities, were found to be least likely to engage in such activities. Likewise, students whose parents were uninvolved in the PTA and other school-related activities did not participate in constructive free-time activities as often, nor spend as much time doing homework, as students with involved parents. Students enrolled in general or vocational/technical programs in high school had much less exposure to extracurricular activities than students enrolled in academic or college-preparatory programs.

The time-use patterns of 10th graders were predictive of what they would be doing one year after high school. Those who were "homework-focused" were twice as likely to be enrolled full time in postsecondary school as those who were focused on paid employment as 10th graders. Conversely, those in the latter group were twice as likely as those in the

former to be employed full time after high school. However, the link between doing more paid work as a teenager and full-time employment as a young adult was weaker than the association between doing more homework and full-time college enrollment. This indicates that the jobs that adolescents hold are not giving them the skills or experience necessary to obtain stable full-time employment after high school.

Time-use patterns of 10th graders were also predictive of whether they would engage in a variety of risky behaviors. For example, compared to those who reported spending 1-4 hours per week in extracurricular activities, students who reported spending no time in school-sponsored activities were 57 percent more likely to have dropped out by the time they would have been seniors; 49 percent more likely to have used drugs; 37 percent more likely to have become teen parents; 35 percent more likely to have smoked cigarettes; and 27 percent more likely to have been arrested. These significant negative relationships were found after controlling for related family, school, and student characteristics such as parent education and income levels, parent involvement in school-related activities, and students' grades. Up to a point, students who spent more time (5-19 hours per week) in extracurricular activities were even less likely to engage in risky behavior. However, there was not as great a deterrent effect among those who spent large amounts of time (20 or more hours per week) in extracurricular pursuits.

One behavior that proved an exception to the rule that extracurricular participation reduced risky conduct was binge drinking. After other factors were controlled, time in extracurricular activities did not show a significant relationship with underage drinking. The difference may be due to the greater social acceptability of drinking in adult society, compared with cocaine or marijuana use, or to another finding of the study. This was that one form of extracurricular activity -- varsity sports -- actually seemed to predispose young people to binge drinking.

When data on adolescent time use and risky behavior were analyzed separately for males and females, similar relationships were found. One difference was that the deterrent effect of extracurricular participation on teen childbearing was more clearly evident among

females than males. Similar relationships were also observed when the number of activities in which students participated was used as a measure of extracurricular involvement instead of hours per week.

Participation in two specific forms of extracurricular activity, varsity sports and music or drama, showed somewhat different relationships to later risky behavior. Students who participated in varsity sports were less likely than non-participants to drop out of school or become smokers by their senior years. On the other hand, student athletes were significantly *more* likely to have engaged in binge drinking, as noted above. Also, male (but not female) athletes were more likely to have become teen parents. By contrast, students who participated in band, orchestra, chorus, or in a school play or musical were significantly less likely than non-participants to engage in nearly all the problem behaviors: dropping out of school, being arrested, becoming smokers, using drugs, or engaging in binge drinking. Female (but not male) performers were also less likely than non-performers to have become teen parents.

How risky behavior is prevented

The findings indicate that organized youth activities can help to prevent risky behavior in adolescence and young adulthood. They also provide some insights into how participation might be working to deter such behavior. For example, as noted in the introduction, if time displacement is the mechanism by which risky behavior is being prevented, then the more time the youth spends in constructive pursuits, the less should be his or her chances of engaging in risky behavior.

The results showed that, in most instances, more time in extracurricular activities did mean a lower chance of risky behavior. However, the decline was not a steady one. Students who spent a great deal of time in extracurricular pursuits (20 hours or more) stood at least as great a chance of engaging in risky behaviors as those who spent minimal amounts of time (1-4 hours) in extracurricular activities. This indicates that other mechanisms were at work in addition to time displacement.

One alternative or complementary mechanism is commitment building, which was also discussed in the introduction. If this mechanism is operating, activities that develop skills, nurture aspirations, and bolster the youth's sense of self-worth and self-efficacy should be more of a deterrent to high-risk behavior than activities that do less of these things. A finding that seems consistent with this hypothesized distinction was that participation in varsity sports was associated with reduced frequencies of dropping out and smoking, whereas participation in intramural sports was not.

Being able to participate in varsity sports usually means that the student has developed a sufficient degree of athletic skill to "make the team." A varsity team member typically gets more coaching and spends more time practicing than a member of an intramural team does; there is more emphasis on performing to the best of his or her abilities. The varsity team member is competing for the school against other schools, and his or her efforts are actively supported and appreciated by the student body, parents, and faculty. These characteristics should make varsity sports more of a boost to the student's sense of self-worth and commitment to the school than intramural sports. The observed differences in dropout and smoking rates were consistent with the differences expected on the basis of the commitment-building notion.

At the same time, participation in varsity sports was associated with *higher* rates of binge drinking and (for male athletes) teen parenthood. These findings seem to point to another mechanism discussed in the introduction, namely, group pressure. According to this notion, the important thing about an activity is the sense of group belonging it engenders, and the beliefs held by group leaders and members. If the group code opposes a specific form of risky behavior -- like smoking because it is deleterious to athletic performance -- then participation in the activity will act as a deterrent to that risky behavior.

If, on the other hand, group members do not disapprove of the risky behavior, or even endorse it, then participation will not prevent the behavior and may actually increase its likelihood. Presumably, this is what happened with respect to varsity sports and binge drinking. The survey data do not indicate explicitly that sports team members endorsed

drinking, but it is certainly a commonly-held belief that many student athletes drink and many varsity sports teams hold beer parties after big games. Thus, while the survey results do not prove the group pressure hypothesis, they lend credence to this explanation of risky behavior prevention.

Further research is needed to test the different mechanisms of risky behavior prevention more explicitly. Such research would require information not only about the activities in which a young person participates, but also about what the young person gets out of each activity in the way of challenges and satisfactions. It would also require information about the attitudes and beliefs of the other young people who take part in the activity. Existing data sets on adolescent time use do not meet these demanding requirements, so new data collection efforts would be needed.

Increasing constructive time use among U.S. adolescents

The findings of the present study regarding the beneficial effects of extracurricular participation for teenagers are reinforced by those of other recent studies that have shown links between involvement in extracurricular activities and success in school (Finn, 1993; Lamborn et al., 1992; O'Brien and Rollefson, 1995) and reduced rates of unhealthful behavior (Escabedo et al., 1993). One caveat, though, is that none of these studies has used an experimental design involving random assignment to treatment or control conditions. Thus, the possibility still exists that the observed relationships between extracurricular participation and positive youth outcomes are correlational rather than causal in nature.

Despite this limitation, the findings seem sufficiently promising to warrant a call for demonstration projects aimed at increasing the amount of time U.S. adolescents spend in constructive group activities, such as community service efforts, amateur musical or dramatic productions, environmental improvement activities, and science or technology projects. The survey data show that more productive use of discretionary time is needed among American adolescents from virtually all social and economic groups, but especially among young people from families with lower education and income levels, and those who are not enrolled

in college-preparatory programs in school. Such projects could be sponsored by schools, religious or community organizations, or other public or private agencies. Wherever feasible, they should include evaluations of the short- and longer-term effects of activity participation on youth development and behavior.

National surveys indicate that a range of extracurricular activities is available to almost all students in public high schools in the United States (O'Brien and Rollefson, 1995). Research is needed to clarify why young people from lower-SES families and students in vocational or general programs do not take more advantage of existing opportunities for extracurricular participation.

The activities in which young people are encouraged to participate should be designed with the findings of the present study in mind. It seems likely, if not yet certain, that the effectiveness of an activity in preventing adolescent misbehavior depends not just on the degree to which it occupies idle time, but also on the extent to which it develops skills, raises aspirations, and provides fulfilling experiences for teen participants. It depends as well on the attitudes that other participants have about engaging in specific high-risk behaviors. If the group code encourages some forms of risky behavior, such as binge drinking or sexual promiscuity, participation in the activity may well be counterproductive.

IMPLICATIONS FOR FUTURE RESEARCH AND POLICY DEVELOPMENT

The findings of this study have several implications for future research and the development of public or private programs aimed at reducing the prevalence of risky behaviors among young people and improving their educational and occupational outcomes. The rapid technological, economic, and cultural changes that American society is undergoing point to a need for continued monitoring of how American adolescents are spending their time outside of school. There is a particular need to assess whether adequate opportunities for constructive time use are being afforded to young people from families lower down on the socioeconomic scale and to those who are not doing well in regular school. We should also ask whether these young people are taking advantage of the opportunities for extracurricular participation that are available to them. If not, why not?

Recurring Time-Use Surveys

In order to answer such questions, a program of recurring national surveys focused on youthful time use is called for. These studies should be conducted at least once every five years, with longitudinal follow-up of the sample youths during the intervening years. The studies could be carried out relatively economically if they were conducted as supplements to existing survey programs, such as Monitoring the Future, the National Health Interview Survey or the Youth Risk Behavior Surveys of the Centers for Disease Control and Prevention, the Adolescent Health Survey (ADD Health) administered by the National Institute of Child Health and Human Development, or the National Education Longitudinal Studies or the National Household Education Survey of the National Center for Education Statistics.

Gathering information needed to test theories

If these studies are to advance our understanding of the causes and consequences of youthful time use, they should gather supplementary information that would allow theoretical perspectives like ecological systems theory and social control theory to be tested more

thoroughly. For example, the surveys should gather more data on the *ecological contexts* in which different patterns of activity participation and time use occur. In particular, surveys should find out about the availability of different types of activities in sample schools and neighborhoods, about possible barriers to participation (such as school rules requiring a certain academic average before students are allowed to take part in sports or other extracurricular activities), and about the time, monetary, and opportunity costs of participation for different groups of young people. Parent support of youth activities should also be assessed. If possible, ecological data should come from or be verified by independent sources (such as school administrators) and not be based solely on the reports of youths themselves.

In addition, the surveys should collect more information about the *commitment-building and group-influence aspects of activity participation*. To what extent did participation in a specific activity develop skills, create aspirations, nurture positive character traits, provide rewarding experiences, and strengthen the young person's dedication to productive pursuits? Did the youth feel a sense of camaraderie and belonging while participating in the activity? To what degree were the opinions of other group members or the adult leader important to the youth? What were the attitudes of other group members with respect to such matters as staying in school, working hard for good grades, going on to college, as well as in regard to drinking, smoking, drug use, teen childbearing, and delinquent conduct?

In large measure, these questions would have to be answered by the youth him- or herself. To avoid circularity, though, it would be good if the information were at least partly based on independent sources, such as parents, teachers or coaches, and other members of the group. Contacting and interviewing additional informants such as these would add to the cost of time-use surveys, of course. But the information obtained would greatly increase the confidence one could place in the findings.

The survey program should have a *longitudinal component* that gathers data about the youth's subsequent educational attainment and employment, as well as the occurrence of

risky behaviors such as those examined in the present study. It would then be possible to verify the negative relationships between participation in constructive activities and later problem behavior and test more adequately the differing theoretical explanations of why this protective effect is observed.

Measuring time use more accurately

In addition to collecting supplementary data that are theoretically relevant, new studies should strive to measure adolescent time use with greater accuracy. Two ways of doing this are the 24-hour recall diaries used in earlier studies at the University of Michigan (Juster and Stafford, 1985) and the University of Maryland (Robinson, 1991), and the Experience Sampling Method used at the University of Chicago (Csikszentmihalyi and Larson, 1984), which involves "beeping" teenagers at random times. Both methods are more time-consuming and costly to administer and analyze than summary questions about time use such as those analyzed in the present study. But the methods are likely to produce more accurate pictures of actual time use patterns, ones that are less tainted by errors of memory and social desirability bias. A reasonable compromise might be to apply one of these methods in a subsample of a large national study that relied primarily on summary questionnaires. This would allow researchers to "calibrate" the questionnaire responses and obtain some of the benefits of greater measurement accuracy, while keeping overall study costs at a manageable level.

Evaluation Studies

The effects of participation in constructive activities on youth development could be appraised more rigorously by carrying out a program of longitudinal *evaluation studies involving random assignment* of young adolescents to treatment or control conditions. The studies would be conducted at several demonstration sites around the country. The "treatment" would be an opportunity to participate for a year or more in a special youth activity, organized by the local school district or a neighborhood organization. The activity might be a club, a team, a musical or drama group, or a youth service organization. The

activity would be specially designed to try to build commitment and expose the young people involved to positive peer and adult influences.

The demonstration projects should begin in early adolescence (ages 13-14) and follow young people in both experimental and control groups for four-to-six years, until they are in their late teens. Follow-up information about school enrollment and academic performance, employment, parent status, and involvement in risky behaviors should be collected annually or biennially. The data gathered should include information about the ecological contexts of the young people's lives.

Once the protective effect of activity participation had been demonstrated experimentally, it would be desirable to conduct further rounds of studies that varied the design of the special youth activities in order to determine which aspects were critical for successful prevention of risky behavior. It would also be desirable to go beyond demonstration projects and develop public policies and private initiatives that would make the proven youth programs available to large numbers of young people across the nation.

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APPENDIX A: DATA SOURCES AND ANALYSIS METHODS

Monitoring the Future (MTF)

Monitoring the Future is a national survey of high school seniors conducted by the Institute of Survey Research at the University of Michigan. It is designed to describe and explain changes in many important values, behaviors, and lifestyle orientations of American youth. It also gathers extensive information on the prevalence and incidence of illicit drug use among high school seniors. The survey questionnaires are self-administered and are completed anonymously by participating students in their schools. MTF was first fielded in 1975 and has been conducted annually since that time. The sample size has varied from year to year, but has generally been over 15,000 seniors. Published volumes that provide basic tabulations of the data collected are released annually, with a lag of several years after the time of data collection.

MTF was chosen for this project because it can be used to gain a sense of trends in high school seniors' use of time over the last 15 to 20 years. Although seniors are a select group of all adolescents, tracking changes in their reported time use over the past two decades provides clues as to how the lives of adolescents have changed. Much of the available information can be tracked from 1976 to 1992, although some items are available only since the mid-eighties. From the published volumes, trends in reported time use can be tracked for all seniors and separately by sex, race, four-year college plans, and illicit drug use.

Longitudinal Study of American Youth (LSAY)

The LSAY is a national longitudinal panel study of students in public middle and high schools, sponsored by the National Science Foundation. The purpose of the study was to measure students' evolving attitudes toward science and mathematics as fields of study in school and as future career fields. The base year questionnaires for the LSAY were administered in 1987 when Cohort 1 was in 10th grade and Cohort 2 was in 7th grade. In

the base year, 2,800 completed questionnaires were obtained from 10th graders in Cohort 1 and 3,100 questionnaires from 7th graders in Cohort 2. Each cohort was subsequently surveyed in the 1988, 1989, 1990, and 1991 school years. Data from student questionnaires are supplemented by data from parent, math and science teacher, and school principal questionnaires. The majority of data pertinent to students' use of time comes from students themselves.

A notable limitation of the LSAY data set is that minority racial and ethnic groups were not oversampled for this study. As a result, data identifying the race or ethnicity of students are not made available on the public use file in an effort to limit the misuse of this information. While permission to use these data was obtained from the study director, reliable estimates of students' time use based upon their race or ethnicity cannot be generated from this data set. Nevertheless, other indicators of students' socioeconomic status are readily available, including parents' educational attainment and a composite variable measuring the socioeconomic status of students' families.

Measures used from the LSAY

The LSAY data were primarily used to examine the amount of time adolescents spend on homework and working at a job for pay, as well as the relationship between these activities and students' characteristics, engaging in risky behaviors, and post-high school employment and school enrollment. The data measuring time doing homework and working for pay were gathered with the following student questionnaire item:

In a typical week, how many hours do you spend...

a. ***Doing homework?***
b. *Watching tv?*
c. *Listening to music?*
d. ***Working for pay?***
e. *Doing household chores?*
f. *Dating?*

The answer to this question is open-ended, that is, students provided their answers to this question without the use of precoded response categories. Responses were categorized for the analyses according to what was appropriate given the overall response distribution, and

for ease in substantive interpretation. This item was asked of both Cohort 1 and Cohort 2 students in the fall of 1987 and in the fall of 1989. Thus, the data presented in this report are based upon information gathered from the two cohorts of students who together form a "synthetic" cohort: 7th graders in 1987 and 9th graders in 1989 from Cohort 1; 10th graders in 1987 and 12th graders in 1989 from Cohort 2.

While it would be ideal to follow the same cohort over time from 7th to 12th grade, the LSAY data do not allow for such an analysis. Student reports of time spent working for pay were obtained only in the 1987 and 1989 survey waves for both Cohorts 1 and 2. Information on homework time was obtained from students in Cohort 2 in the 10th and 11th grades; however, the question wording and response categories are quite different from that shown above, making over-time comparisons within Cohort 2 difficult.

Several of the variables used to measure LSAY students' personal and family characteristics warrant some explanation as well. For the most part, throughout the analyses the grade level of the student characteristic variables matches the grade level of the variables indicating time spent doing homework or working for pay. Students' **program at school** is classified into the categories of "general," "academic," and "other." In this classification, "academic" refers to programs geared toward preparing students for college. "Other" programs are a mix of programs labeled as being vocational, technical, trade, or business/office related. Students' **grades** are those for all subjects combined for the previous year. In survey waves after 1987, students were asked to provide their grades separately for their English, math, science, and social studies classes. In these cases, an unweighted average of these grades was taken to represent the students' overall grades for the previous year. The **region** variable indicates the U.S. Census regions in which the students' schools were located; the **urbanicity** variable is also an indicator of the locations of students' schools.

The variable indicating students' **socioeconomic status** is a composite variable on the LSAY public data file that utilizes the most recent information on parents' highest education and parents' highest occupational status, as well as an index of 1988 household possessions

(i.e., daily newspaper, specific place to do homework, typewriter, own room, weekly news magazine). **Parents' educational attainment** indicates the higher level of education attained by either the mother or father. It was obtained from the most recent report by the parents themselves; however, if the self-report was not available, spouses' or students' reports were utilized. The **number of parents** in the students' households was derived from parent reports of their current marital status.

The **parent involvement** variable is based on data obtained from the parent questionnaires administered during the same school year as the student questionnaires. It is an indicator that sums the number of school-related activities or communications that the parent respondent or spouse was reported to have been involved in during the current school year. This indicator consists of three items: visiting the school to talk with a teacher or principal, doing volunteer work in the school, and attending a school event such as a sports event or concert. Parents participating in all three activities were coded "3" to indicate high parental involvement, and parents participating in none of these activities were coded "0" to indicate low parental involvement.

After the Cohort 1 students left high school (June 1990 for most), followup interviews were administered by telephone. These telephone interviews yielded the information regarding the student's **postsecondary enrollment** status and **employment** status in 1991, one year after most graduated from high school. For some of the nonrespondents, the employment and enrollment status information was obtained from parents or relatives of the student.

The results of the crosstabulation analyses presented are based on data weighted with the students' relative weights, which sum to the total sample size. Thus, we have adjusted for each students' probability of being included in the LSAY study. Also, for each graph and table presented, the differences observed are statistically significant at the .05 level, unless otherwise noted.

National Educational Longitudinal Study (NELS:88)

The NELS is a national longitudinal panel study of students in eighth grade in 1988, sponsored by National Center for Education Statistics of the U.S. Department of Education. The purpose of the NELS is to examine trends among secondary school students and students' transition into postsecondary school and labor force employment. In 1988, the NELS study first administered questionnaires to a nationwide sample of 24,599 eighth grade students attending public and private schools. Two followup questionnaires have been administered to date, when the students were in 10th and 12th grades (or had dropped out of school). For the first followup survey in 1990, students were subsampled according to the number of base year students in their school. For the second followup in 1992, all first followup sample members were eligible. There were about 20,000 completed student questionnaires and 900 dropout questionnaires obtained in 1990; and 21,000 completed student questionnaires and 2,000 dropout questionnaires in 1992.

In addition to the student and dropout questionnaire data, information is also available from parent questionnaires, standardized achievement tests administered to the students, teacher ratings on the students' academic performance and behavior, and school administrator reports on school and community characteristics. The data in this report pertaining to adolescents' use of time was derived from student self-reports.

Measures used from the NELS:88

The NELS:88 data were used for analyses related to students' participation in school-sponsored extracurricular activities in the 10th grade. The student questionnaire item used to gather data regarding the amount of time spent in extracurricular activities is

> *In a typical week, how much total time do you spend on all SCHOOL-SPONSORED extracurricular activities?*

Students recorded their answers into precoded response categories ranging from "none" to "20 hours or more."

The variables measuring participation in specific types of extracurricular activities during the 10th grade school year were constructed as follows. The variable measuring participation in **varsity sports** is a composite of several variables in the NELS:88 that measure participation in individual sports (e.g., baseball/softball, basketball, football, soccer), and whether such participation was at a junior varsity, varsity, or intramural level. If a student indicated participation in any one of the sports listed, at either the junior varsity or varsity level, then he or she was coded as participating in a varsity sport. The variable measuring participation in a **musical group or a school play or musical** during the 10th grade school year was constructed by combining information from two variables. One indicated whether or not the student participated in a "band, orchestra, chorus, choir, or other music group" and the other indicated whether the student participated in a "school play or musical." The data for the variable indicating participation in a **vocational club** was gathered by asking if the student participated in "FTA, FHA, FFA, or other vocation education or professional club" during the school year.

The variable measuring the **total number of different school-sponsored extracurricular activities** in which 10th grade students participated is a sum of involvement in the following activities:

- a varsity sport;
- an intramural sport;
- cheerleading or drill team;
- band, orchestra, chorus, choir, or another music group, or a school play or musical;
- an academic club;
- school yearbook, newspaper, or literary magazine;
- student government;
- a vocational club;
- a service club; or
- a hobby club.

This variable has the potential to range from 0 to 11. However, only 4% of 10th graders reported participating in more than 4 types of activities.

There are several variables measuring students' personal and family characteristics that are used in the bivariate analyses to describe the types of students who spend time with their parents and who spend time participating in school-sponsored extracurricular activities.

For the bivariate analyses, these student characteristic variables are measured either at the base year or the year at which the time use variable is measured. Many of these variables are also used as controls in the multivariate logistic regression analyses of extracurricular activities. For the most part, the control variables measured at the 8th grade relate to the students' personal or family characteristics. Those measured at the 10th grade are primarily related to the students' schools, and are used to control for the types of schools that may be more likely to offer or encourage participation in school-sponsored extracurricular activities. The derivation and construction of these student characteristic variables are explained below.

Variables measuring students' personal and family characteristics include the type of **grades** received in 8th grade. This is an indicator of the quartiles in which the student's grades in math, science, English, and social studies fell. This composite variable is found on the public data base and was constructed using an unweighted average of grades received in each subject. The family's **socioeconomic status quartile** is a composite variable on the NELS:88 data base utilizing base year information from the parent or student questionnaires pertaining to parents' education level, parents' occupations, and family incomes. The **family income** variable was derived from parent reports in the base year and in 1992 (student's senior year). Students' reports provided data regarding the family's **receipt of welfare** over the past 2 years; this was measured in 10th and 12th grade; it was unavailable in the 8th grade survey wave. The variable measuring **parents' education** pertains to the higher level of either parent and was taken from the most recent parent report. **Family structure** in the 8th and 10th grades is based upon student reports of the relationships of persons living in their household; the 12th grade variable is based upon parent reports.

The student's **race and ethnicity** is based on a student self-identification and combines information about race and Hispanic origin. Students classified as white, black, or Asian are those of the indicated race who are not Hispanic. Hispanic students can be of any race. The variable measuring whether the student comes from a **language minority** family is a base year indicator of whether or not the student comes from a home in which a language other than English is typically spoken. This is a composite variable on the NELS:88 data base and is derived from either student or teacher reports.

Variables measuring students' school-related characteristics include their **school program**. "Academic" programs refer to those geared toward college preparation and "other" programs largely include vocational and technical programs. The type of **school control** and the **percent minority** variables were taken from school administrator reports. The **region** and **urbanicity** variables indicate the U.S. Census region and the urbanicity of the location of the student's school.

The measure of **parent involvement** in school is a count of school-related activities or communications in which the student's parents were involved. The 10th grade variable is based upon an item asking students whether their parents did any of the following things during the first half of their 10th grade school year: "attended a school meeting," "phone or speak to your teacher or counselor," "attend a school event in which you participated," or "act as a volunteer at your school." The parent involvement measure ranges from 0 (low involvement) to 4 (high involvement). For the logistic regression analyses of extracurricular activities, this variable was dummy coded into variables indicating high (3 or 4 activities), medium (1 or 2 activities), and low (0 activities) involvement. Possibly because this is a student report, there was a relatively large percentage of missing values on this variable (17%). To avoid dropping this substantial proportion of cases from the multivariate analyses, a dummy variable indicating whether or not data were missing on this variable was included in the logistic regression models.

The 12th grade variable measuring parent involvement that is used in bivariate analyses is somewhat different than the 10th grade variable because the same parent involvement questions were not asked in the senior year questionnaire. Instead, the 12th grade indicator of parent involvement is based upon parent reports of whether they contacted the school about their teen's school performance or post-high school plans, whether they helped with school fundraising or did volunteer work, or attended school activities with their teenagers. The construction of this variable is similar to that of the 10th grade variable--it is a count of the number of these activities in which parents reported participating. Thus it ranges from 0 (indicating low involvement) to 3 (indicating high involvement).

The variables indicating participation in risky behaviors that are used in the NELS:88 data analyses include measurements at the 10th and 12th grade. A student classified as a **binge drinker** reported in 1990 or 1992 that he or she had had 5 or more drinks in a row in the past two weeks. A drink is defined for respondents as "a glass of wine, a bottle of beer, a shot glass of liquor, or a mixed drink." Students classified as "**drug users**" reported in 1990 or 1992 that they had used marijuana or cocaine in the past 12 months. Students classified as "**smokers**" reported in 1990 or 1992 that they smoked at least one cigarette daily. Those classified as **dropping out** of school did so after being interviewed in 1990 as a student. The **suspension from school** variable identifies students who were suspended from school in the current school year. Students classified as having been **arrested** reported in 1990 or 1992 that they had been arrested that year. Students classified as **currently having a child or expecting a child** reported in either 1990 or 1992 that this was their situation.

The analyses presented in this report using the NELS:88 data were conducted using the panel of students responding to all three waves of the survey. The number of students who responded to all three waves is 16,489. This was done so that over-time analyses of time use and analyses predicting outcomes over time were based upon the same set of students at each grade level. A weight was available in the data set for this panel of students, so that the analyses based upon the NELS:88 are weighted according to students' relative probability of being included in the study. Unfortunately, such a weight based on the panel of consistent respondents was not available on the LSAY data set, so that it was not feasible to also restrict the LSAY analyses to students participating to all waves of the survey and at the same time adjust the data to account for students' selection probabilities. Thus, only the latter was done, and respondents at each wave were used in the LSAY analyses.

APPENDIX B

Ecological Systems Theory

The ecological systems theory of youth development posits that a young person's development is the result of a complex interplay between the youth's own natural endowment and a variety of social systems and environmental factors that move from immediate influences such as the home to more distal influences such as the community (Bronfenbrenner, 1979, 1986). The theory recognizes that youth are influenced not only by the direct effect of personal interactions with others, but also by the interaction that the others have with each other. The teenager benefits, for example, if a parent has strong connections to his or her school and teachers. Even systems and settings that do not directly involve the youth may affect his or her well-being. An example is the parents' workplaces, which can affect the health and well-being of the parents, and through them, that of the adolescent. Also, the community's wealth and political organization help to determine the types of health and welfare services that are available to the family. The customs, values, and laws of society influence all the different layers of interaction. In general, however, those factors that are closest to the child will have the greatest influence on him or her.

The same complex set of influences that help to shape human development also shape and constrain how adolescents spend their time (Medrich et al., 1982). Laws and school regulations dictate the hours that students are supposed to spend in school. Characteristics of the family and community resources shape the types of activities that youths have available to them. Youths living in low-income urban and rural areas, for example, often have fewer community programs available to them and their parents lack the financial resources to pay for privately run programs (Burt, Resnick, & Matheson, 1992). Youths in such areas may be more likely to report "hanging out" and other forms of non-productive time use than youth from wealthier settings.

Social Control Theory

Although many theories of delinquency attempt to understand why people deviate from conventional behavior, *social control theory* attempts to explain why people adhere to conventional behavior. Underlying social control theory is the assumption that without restraining forces or with only weak restraining forces most people would engage in some forms of behavior proscribed or deemed inappropriate by society. The restraining forces that keep most people from deviating are *attachment* (or a bond) to conventional society usually through attachment to one or more persons, such as parents, or to an institution, such as a school, *commitment* to conventional goals, *involvement* in conventional activities, and *belief* in a conventional value system (Hirschi, 1969).

Attachment implies that persons care about the opinions and expectations of those to whom they are attached. They strive to meet their expectations and do not behave in ways that would disappoint them. Underlying *commitment* is the notion that persons care about the consequences of their actions. They are sufficiently invested in the goals of society (such as obtaining an education or having a reputation for honesty) that they do not want to risk losing what they have already acquired. The restraining influence of commitment resides not only in the fear of losing what has already been acquired but also what may yet be acquired. Thus, aspirations and the expectation that those aspirations can be attained are important if commitment is to be an effective restraining force. Hirschi (1969) initially assumed that *involvement* in conventional activities meant that a person did not have the time to be involved in non-conventional ones. His subsequent work and that of others found that this assumption may be too simple, however (Rutter and Giller, 1983). Social control theory does not delve into how *belief* in conventional values comes into being. But it posits that when persons do not believe in the generally accepted rules of society, they will be more susceptible to committing delinquent acts. Some have suggested that highly stressed families and socially disorganized communities may do a poor job of instilling and supporting conventional beliefs (Elliott et al, 1985). Even among prison inmates, however, surveys have found that a majority of people see the need for adherence to rules (Rutter and Giller, 1983).

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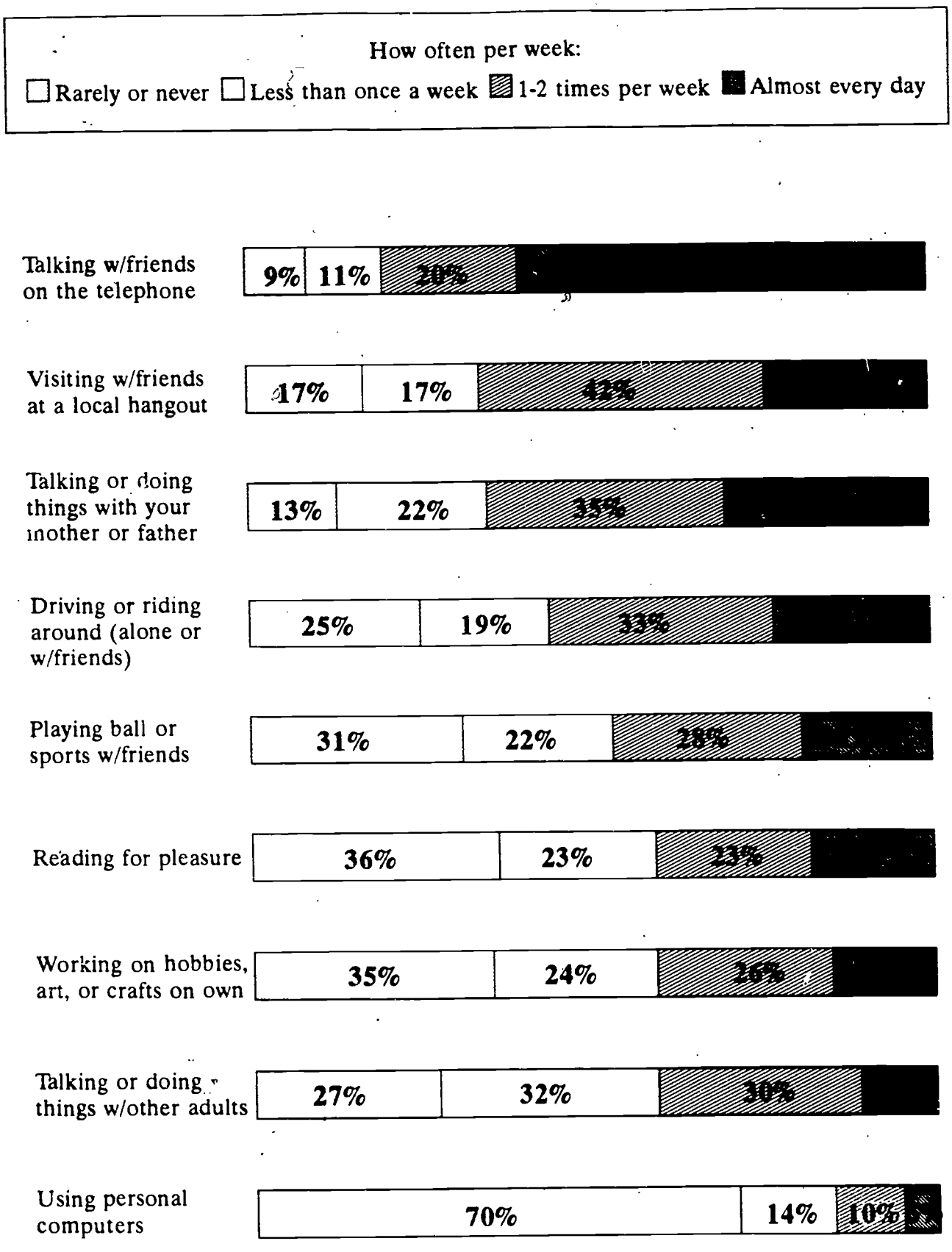
Table 17. School dropout, teen parenthood, and student arrest predicted from 10th grade participation in band, orchestra, chorus, school play or musical and other student, family, and school characteristics, females (multiple logistic regression).

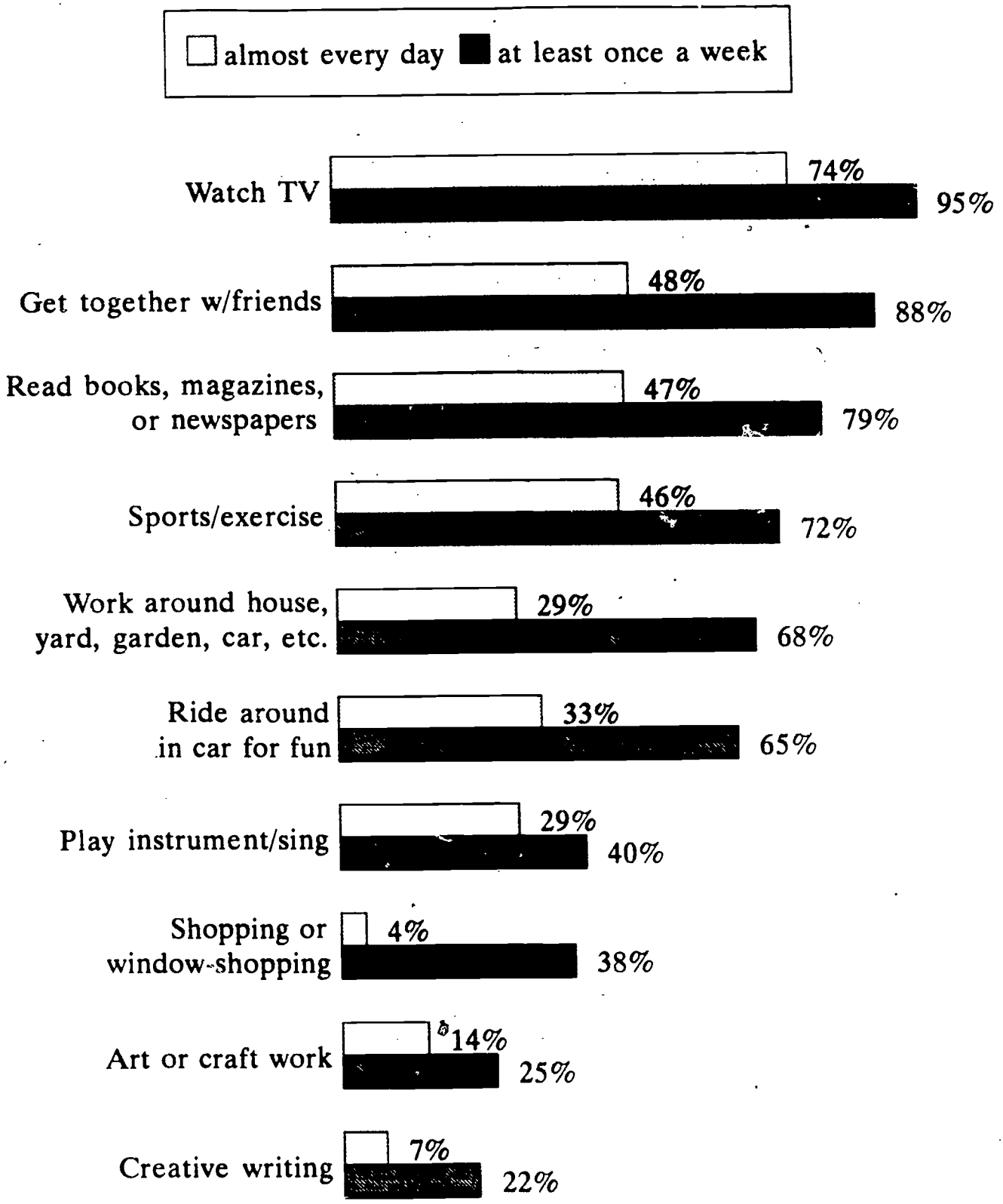
Table 18. Smoking, drug use, and binge drinking predicted from 10th grade participation in band, orchestra, chorus, school play or musical and other student, family, and school characteristics, females (multiple logistic regression).

Figure 1: Frequency with which 10th grade students engage in various leisure-time activities, 1990



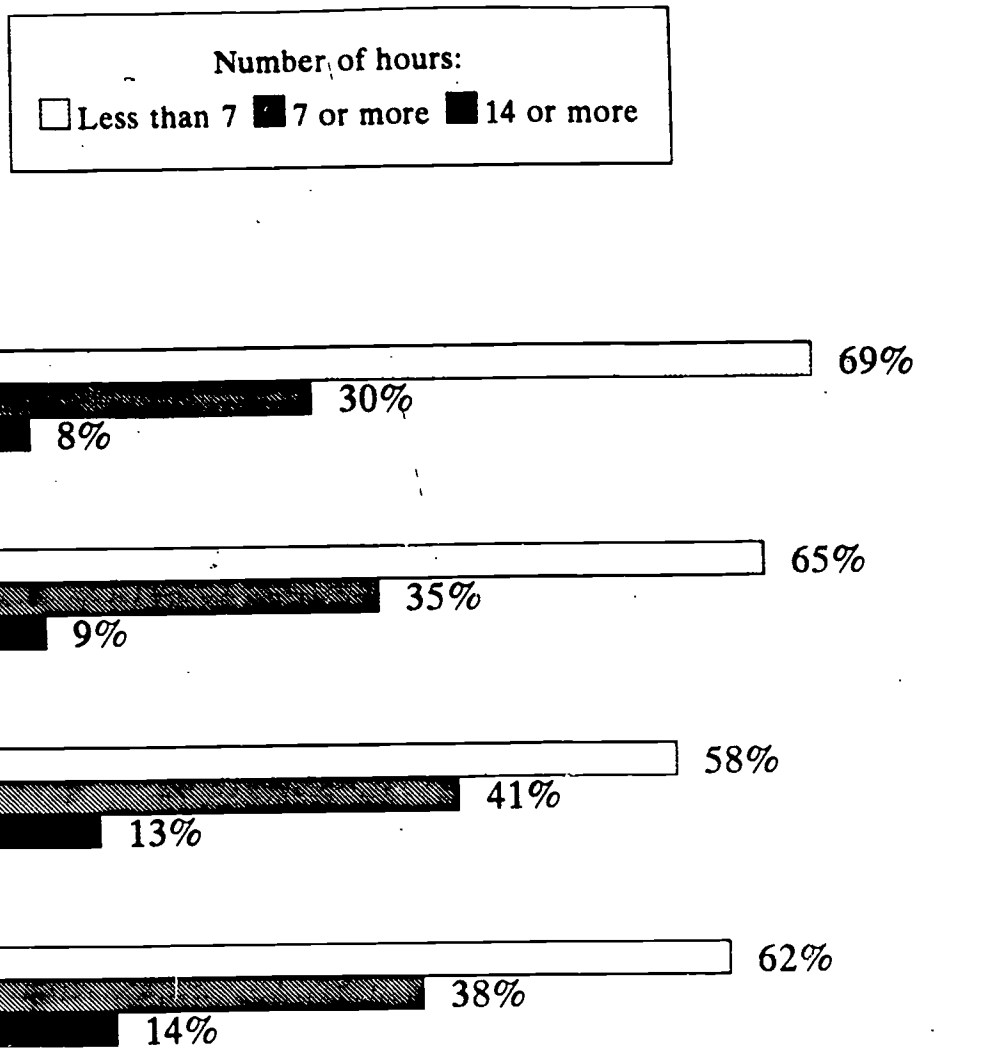
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First Followup Survey 1990.

Figure 2: Percentage of 12th grade students reporting engaging in various leisure-time activities almost every day and at least once a week, 1992



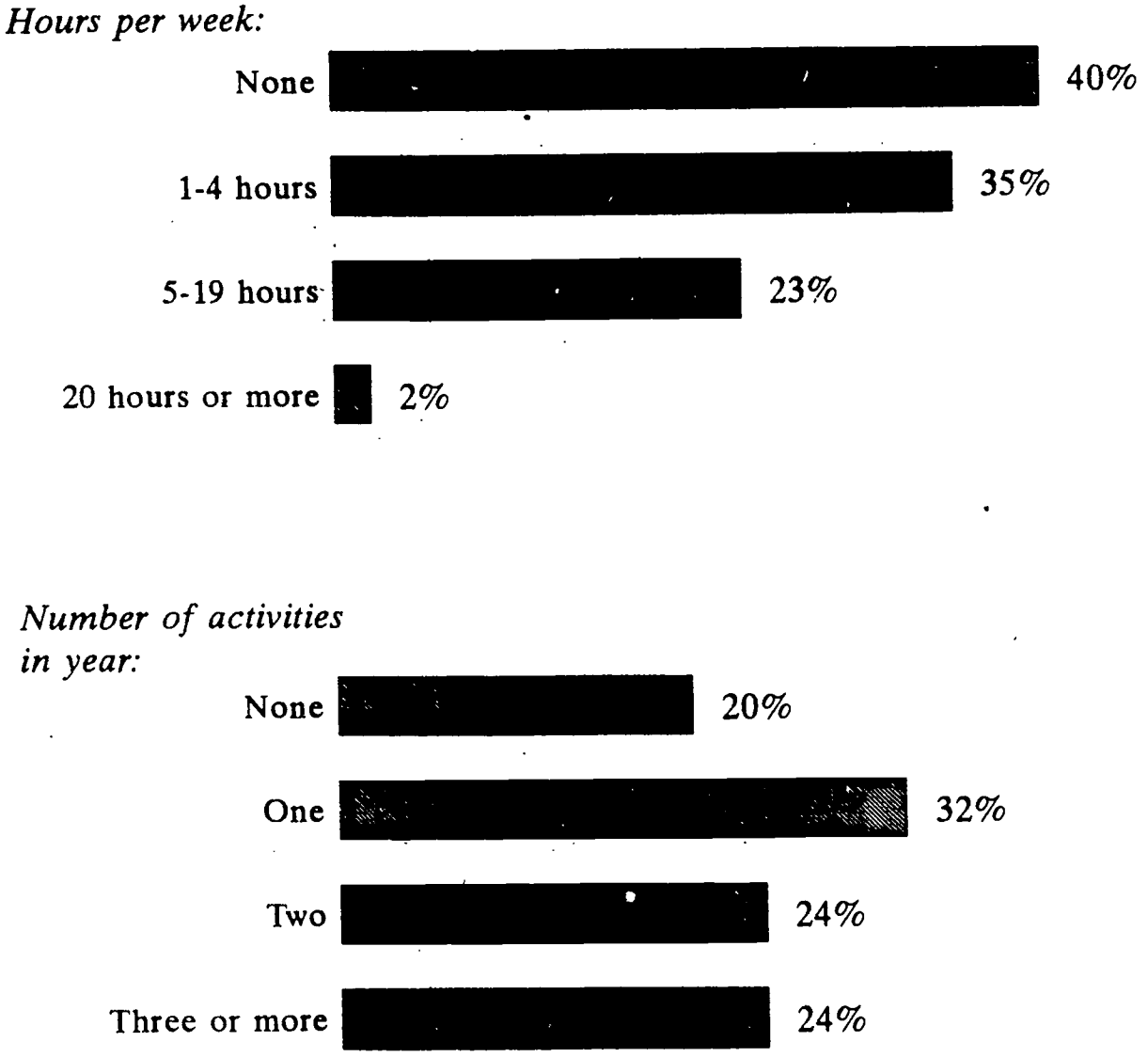
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from Monitoring the Future, 1992.

Figure 3: Hours spent per week on homework and work for pay in a typical week, 7th through 12th grade students, 1987-89



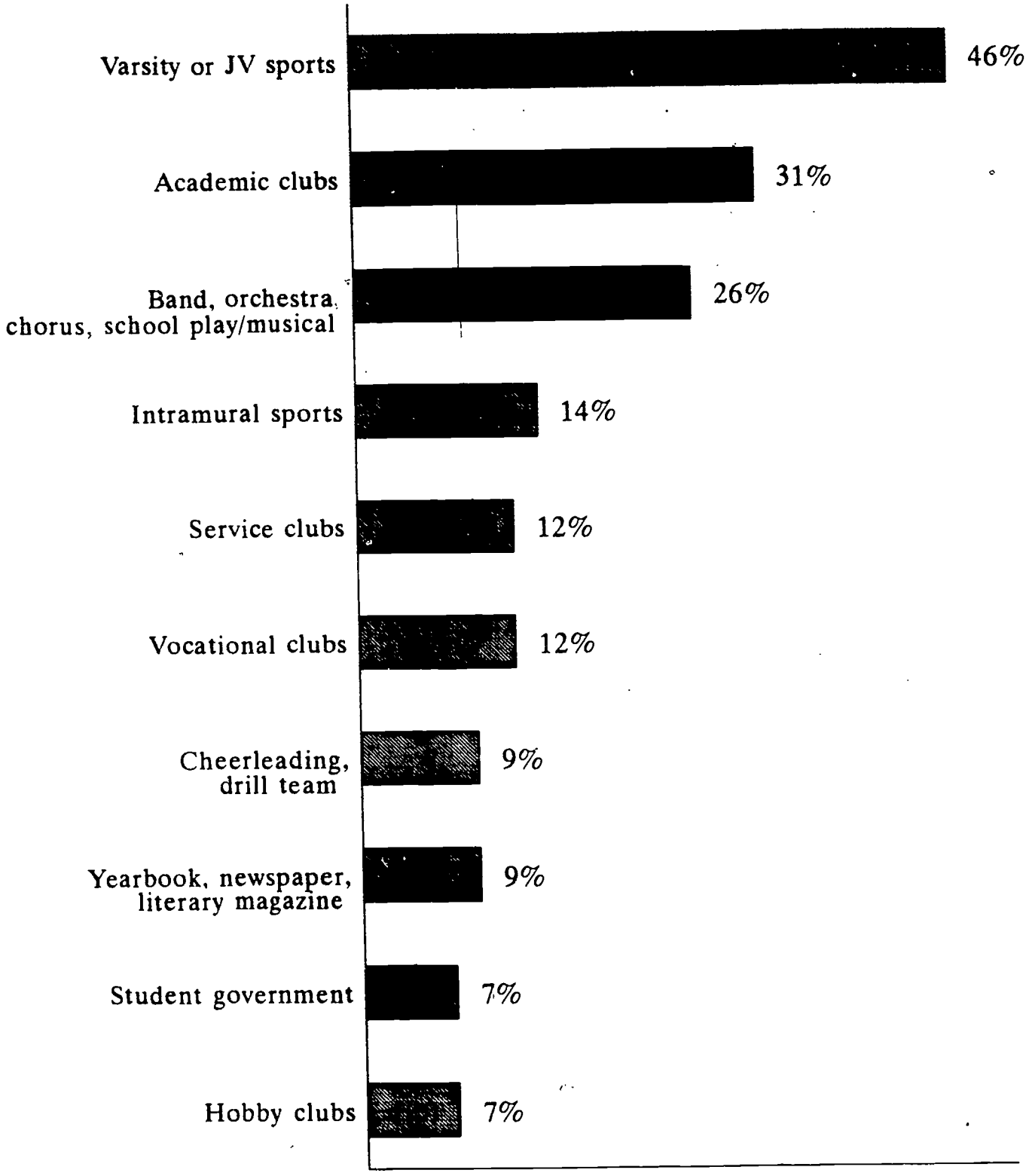
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the Longitudinal Survey of American Youth, Cohorts 1 and 2, 1987 and 1989.

Figure 4: Percentage of 10th grade students participating in extracurricular activities, by number of hours per week and number of different activities in year, 1990



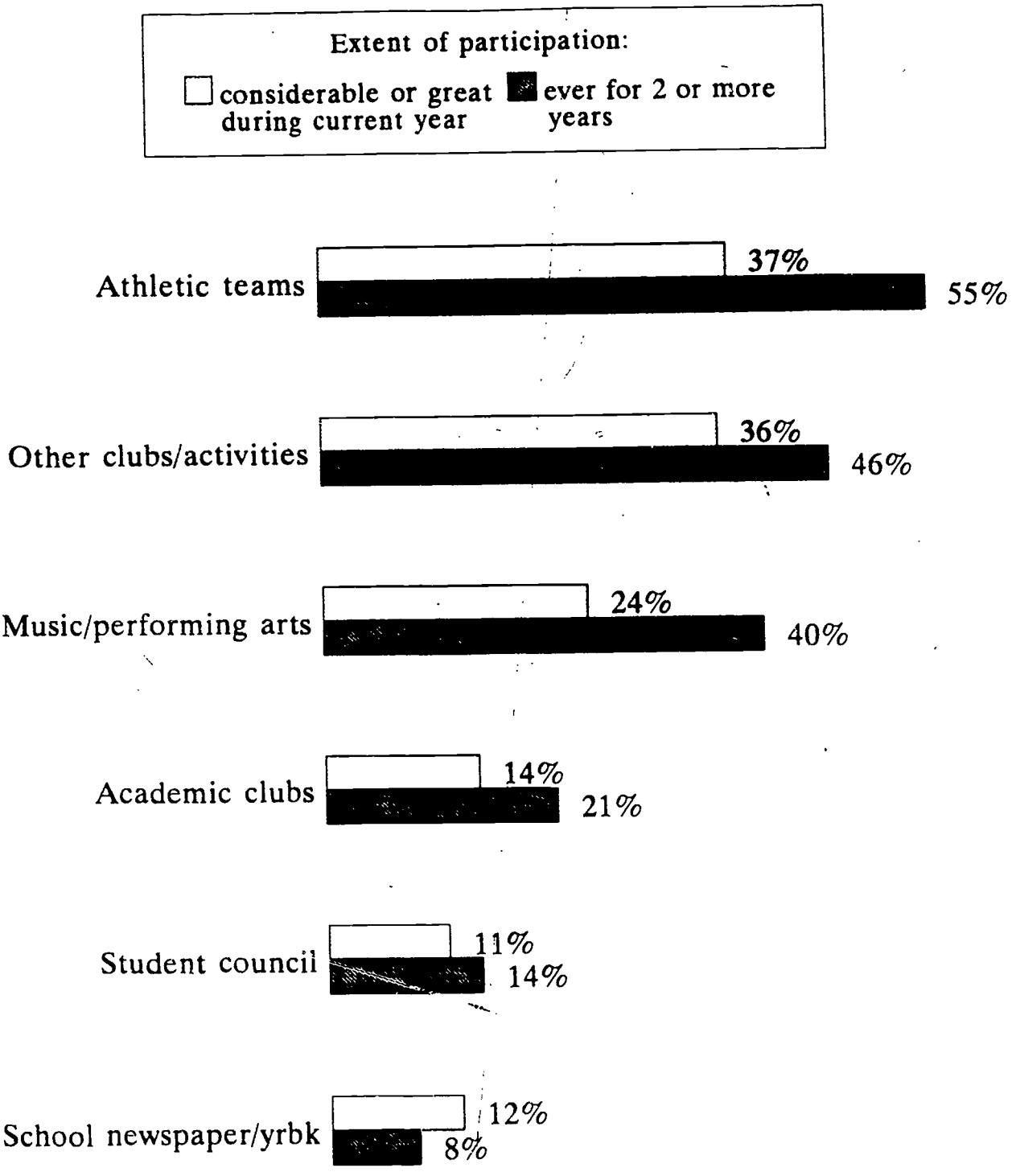
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First Followup Survey, 1990.

Figure 5: Percentage of 10th grade students participating in specific types of extracurricular activities, 1990



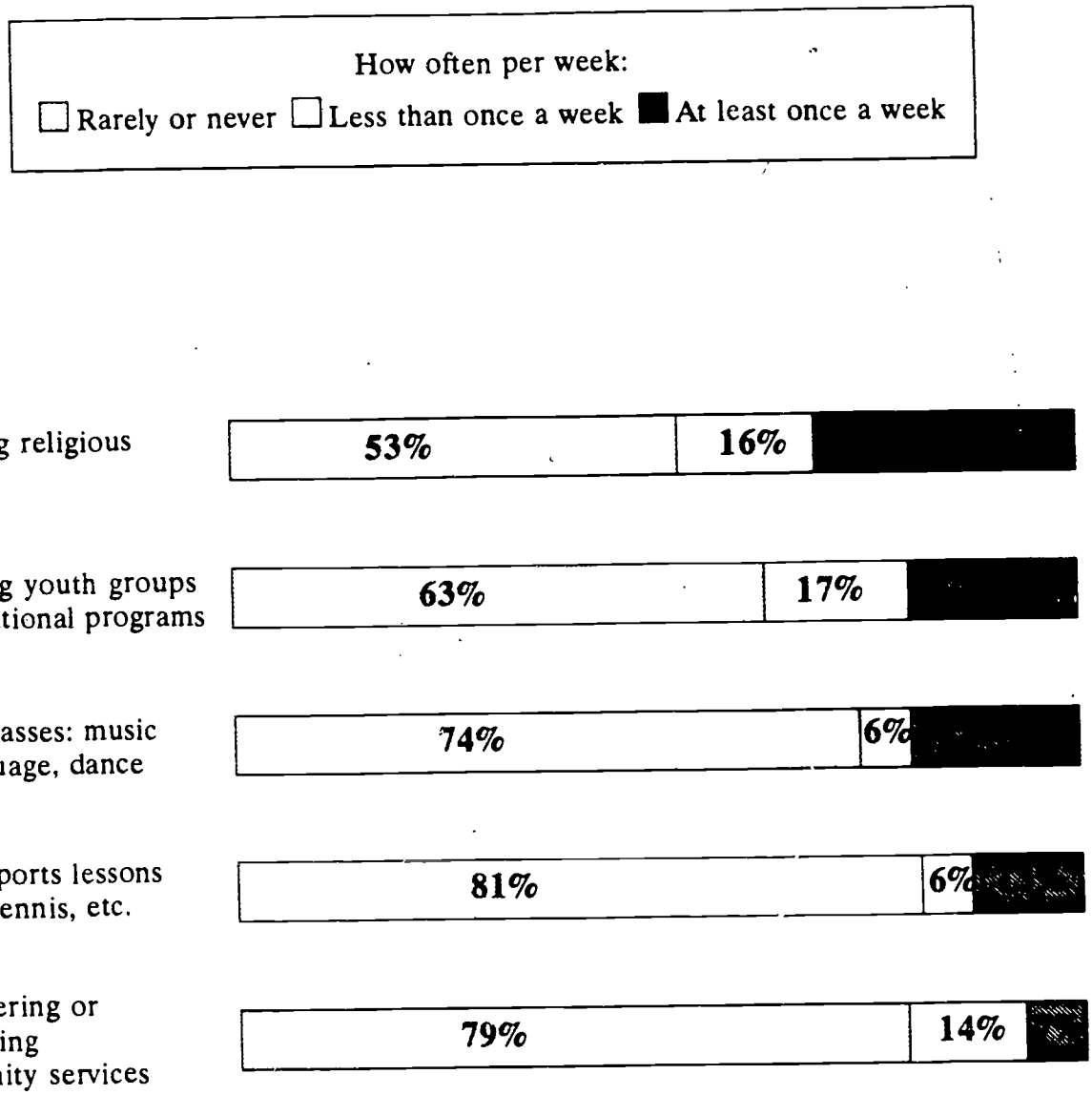
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First Followup Survey, 1990.

Figure 6: Participation in extracurricular activities by 12th grade students, 1992



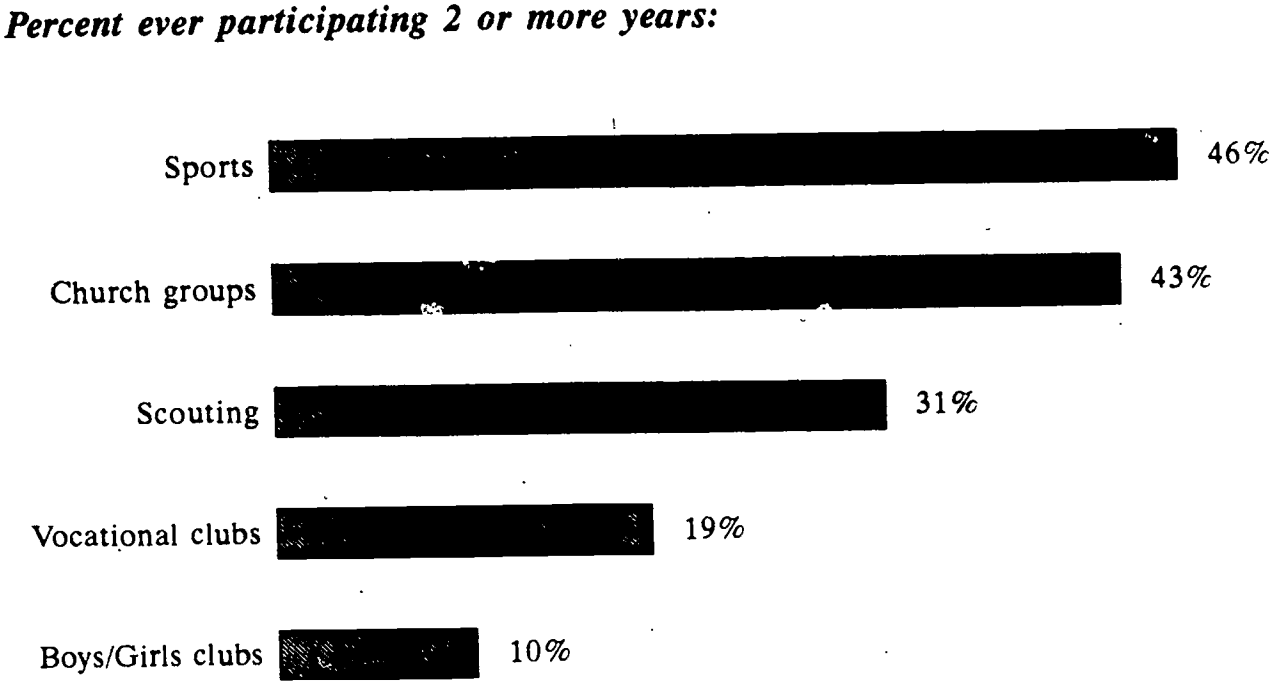
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from Monitoring the Future, 1992.

Figure 7: Frequency with which 10th grade students take part in lessons, classes, and group activities, 1990



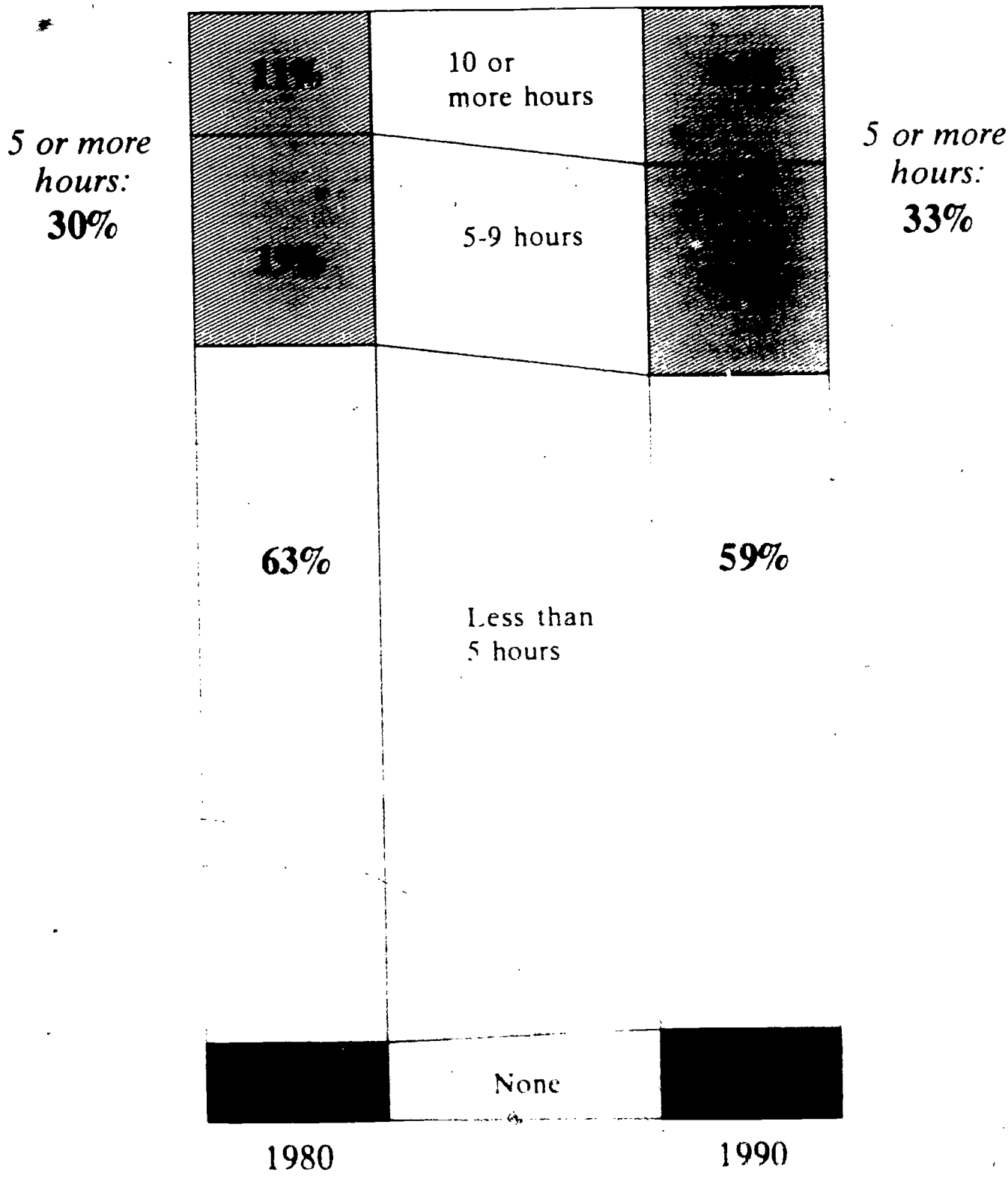
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First Followup Survey 1990.

Figure 8: Participation in organized nonschool activities by 12th grade students, 1992



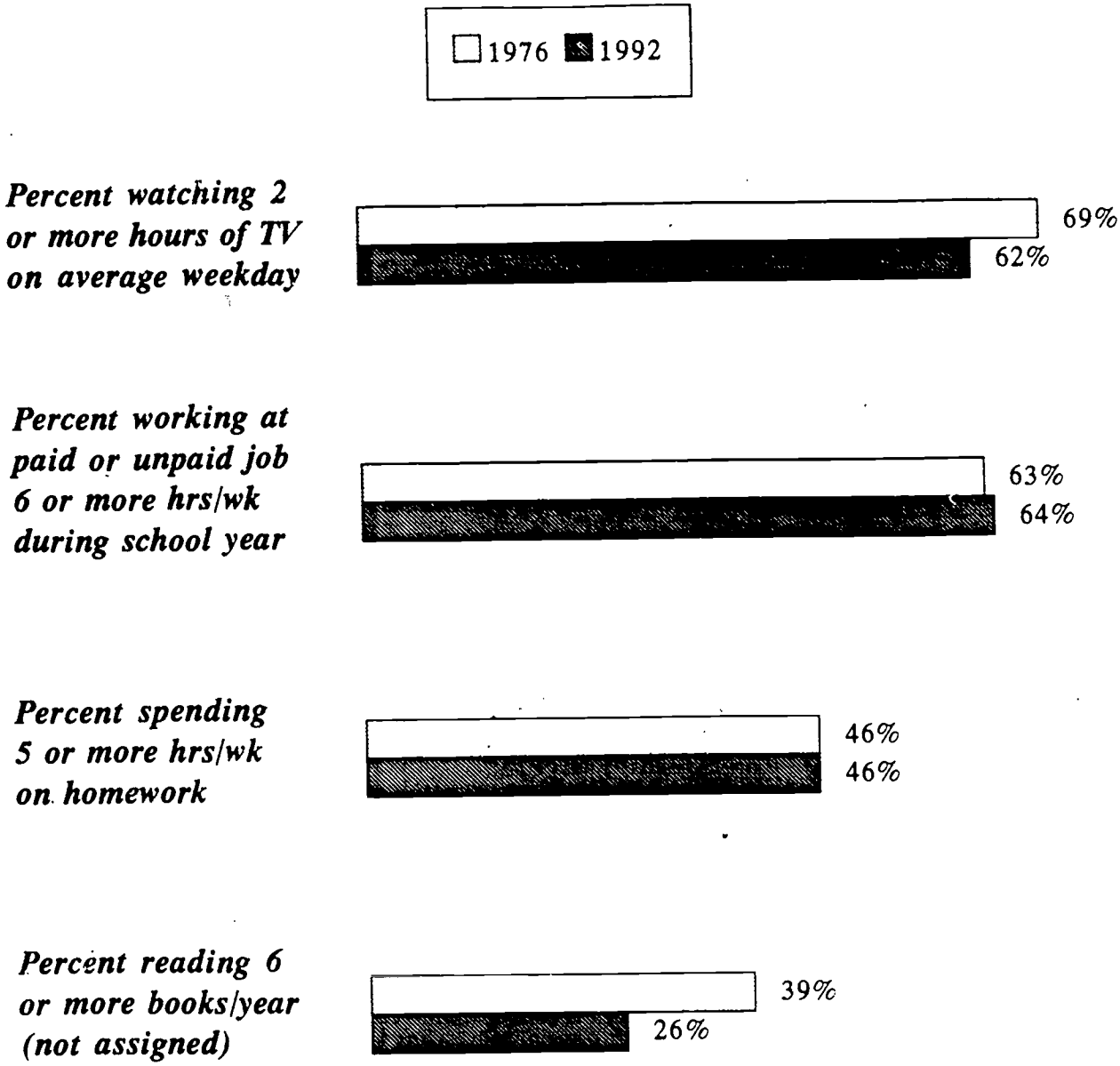
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from Monitoring the Future, 1992.

Figure 9: Amount of time per week spent on homework by 10th grade students, 1980 and 1990



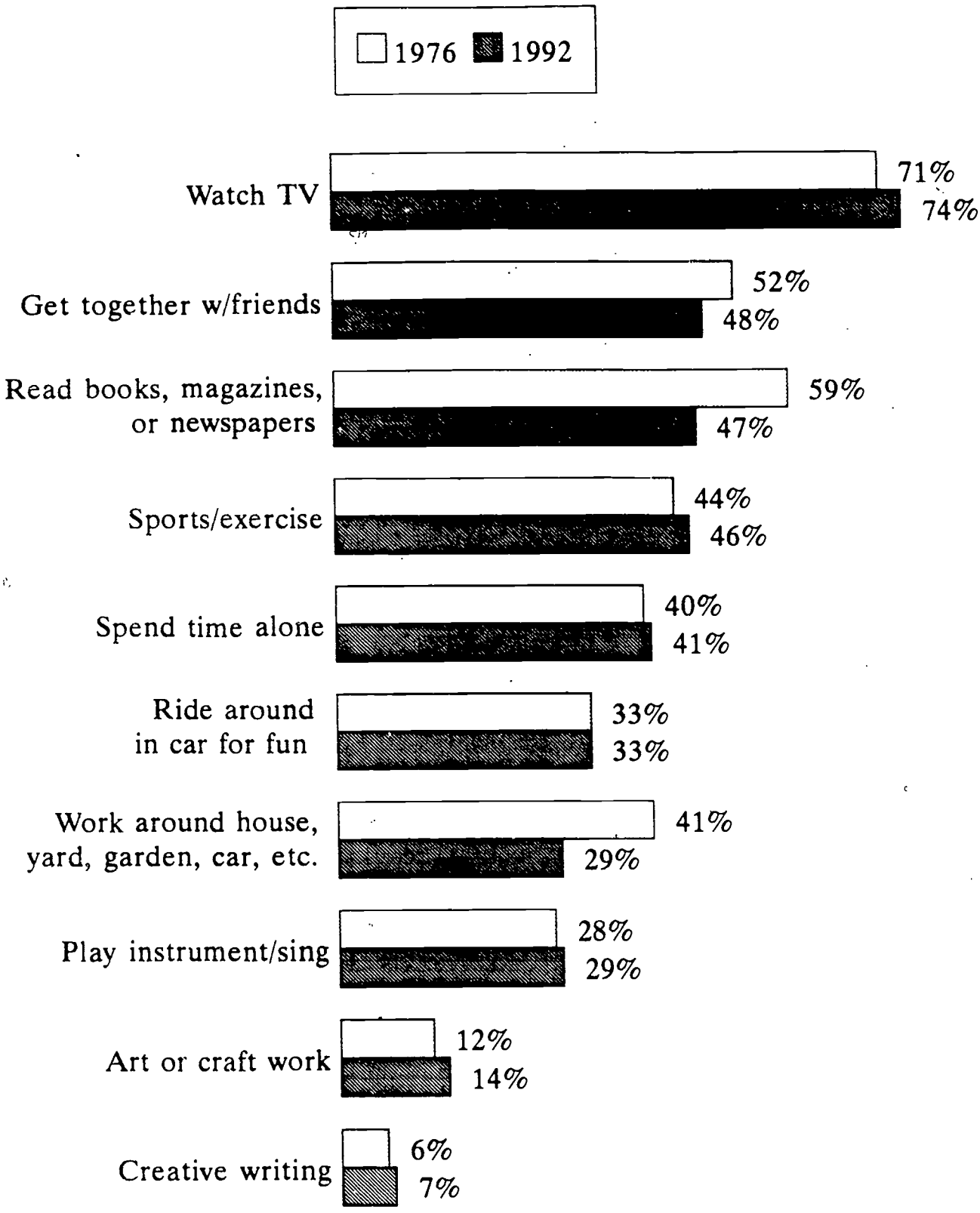
Source: N. Zill, C.W. Nord & L.S. Loomis, Adequate Data from the National Longitudinal Study of 1988, First Follow-up Survey [illegible] and High School & Beyond Sophomore Cohort 1980, Base Year Survey

Figure 10: Percentage of 12th grade students spending significant amounts of time watching television, working, doing homework, and reading, 1976 and 1992



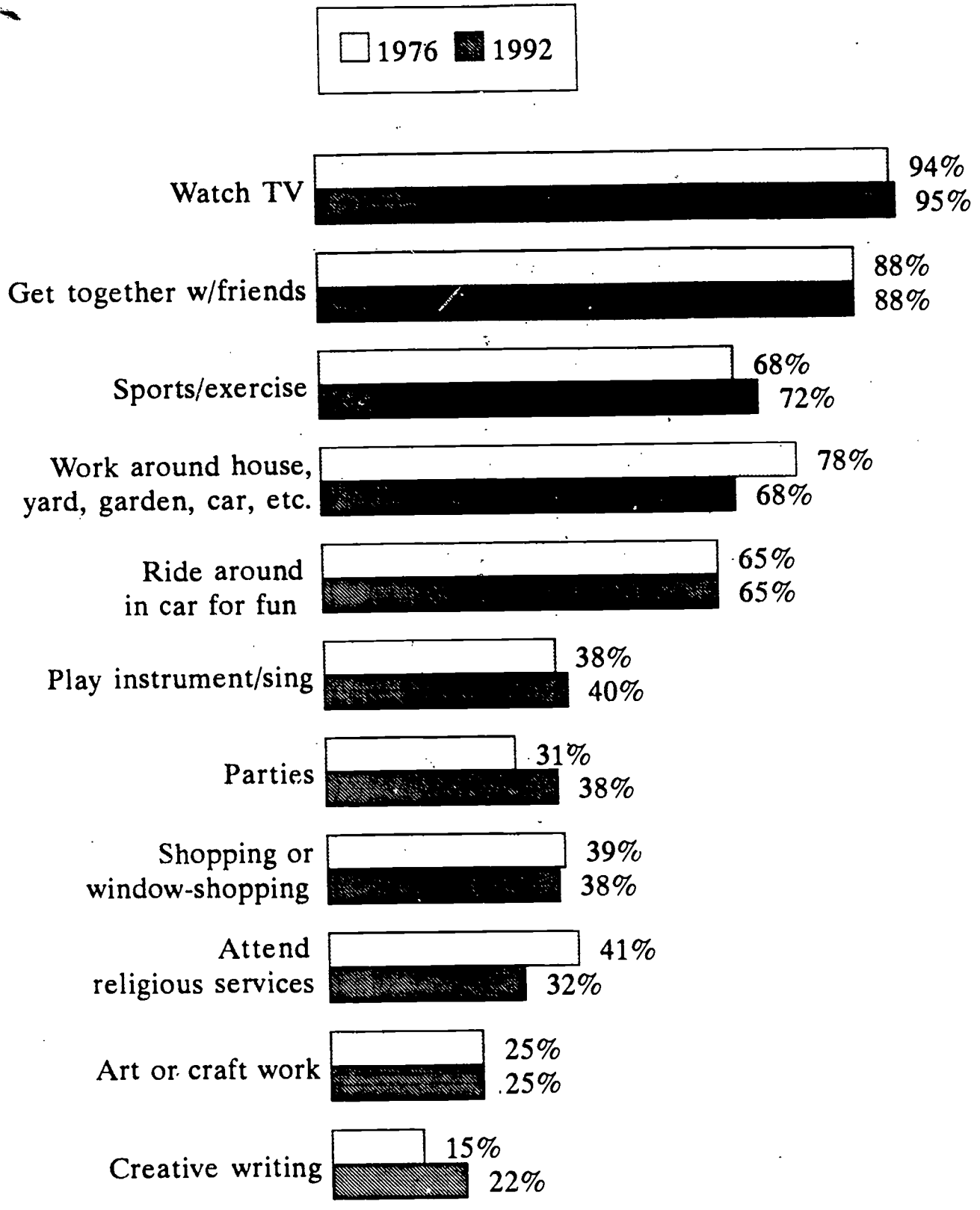
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from Monitoring the Future, 1976, 1992.

Figure 11: Percentage of 12th grade students reporting engaging in selected activities "almost every day," 1976 and 1992



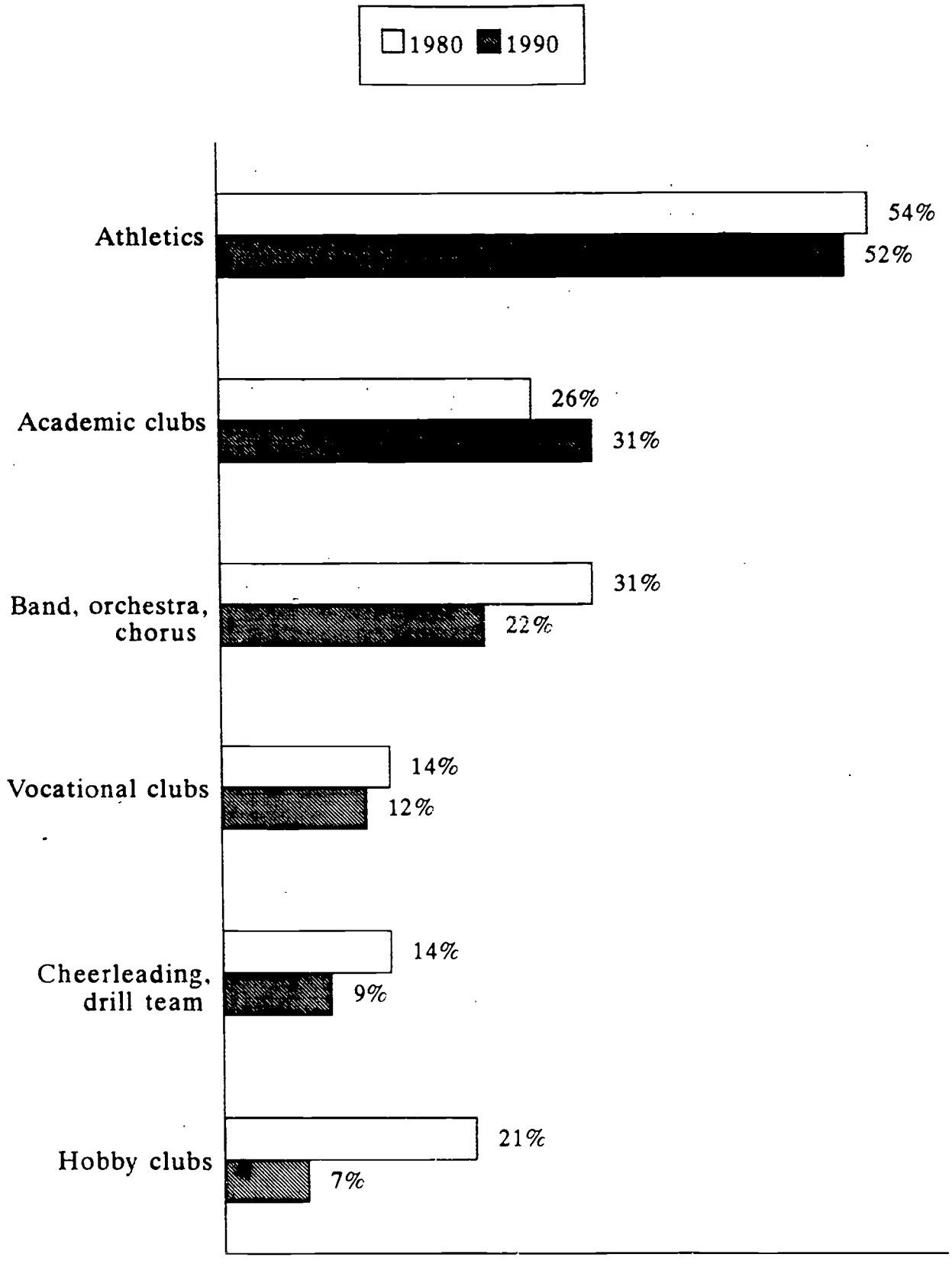
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from Monitoring the Future, 1976, 1992.

Figure 12: Percentage of 12th grade students reporting engaging in selected activities "at least once a week," 1976 and 1992



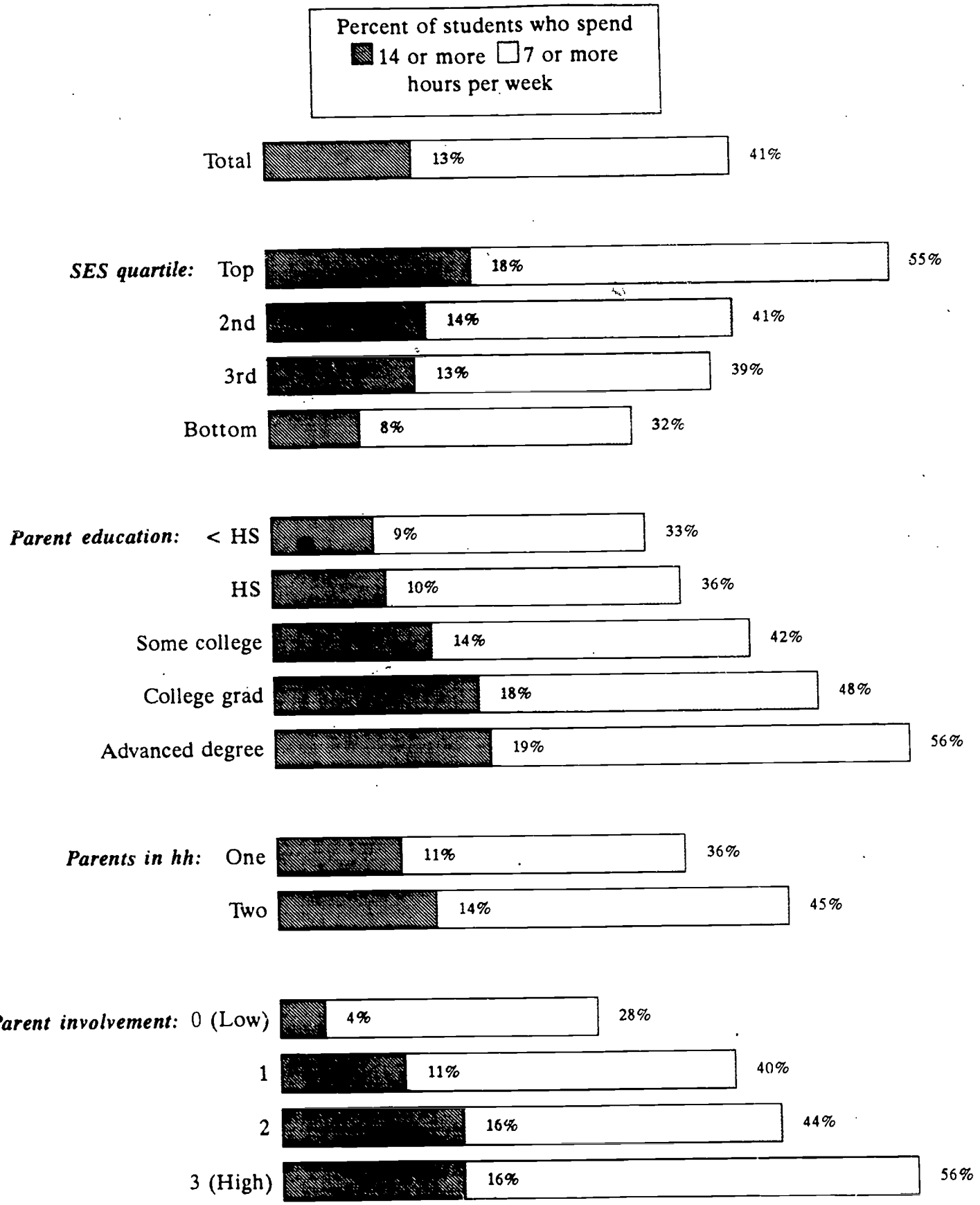
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from Monitoring the Future, 1976, 1992.

Figure 13: Percentage of 10th grade students participating in selected school-sponsored extracurricular activities, 1980 and 1990



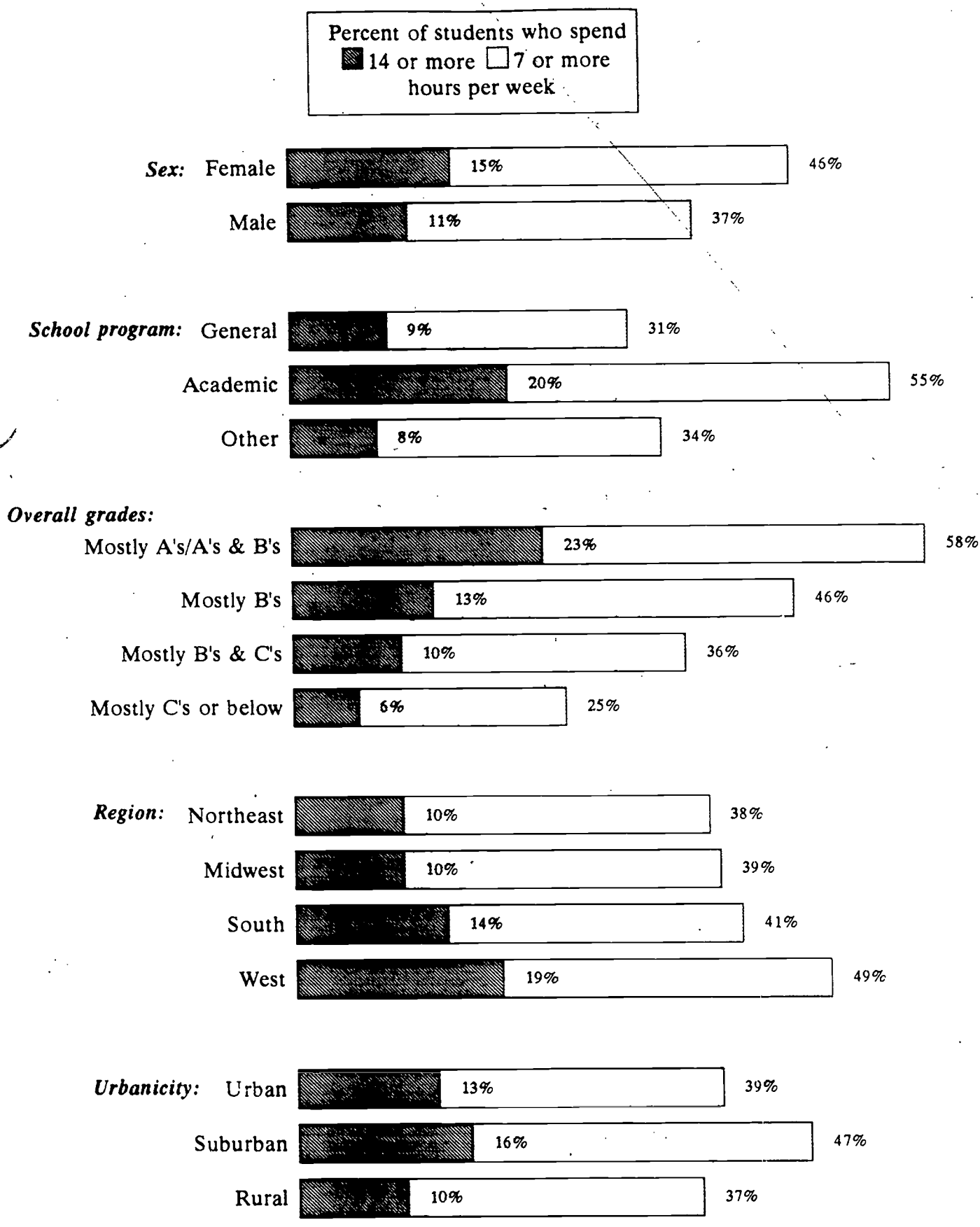
Source: N. Zill, C W. Nord, & L.S. Loomis. Analysis of data from High School and Beyond, Sophomore Cohort, 1980, and the National Educational Longitudinal Study of 1988, First Followup Survey, 1990.

Figure 14: Relationship of family characteristics to time 10th grade students spend on homework, 1987



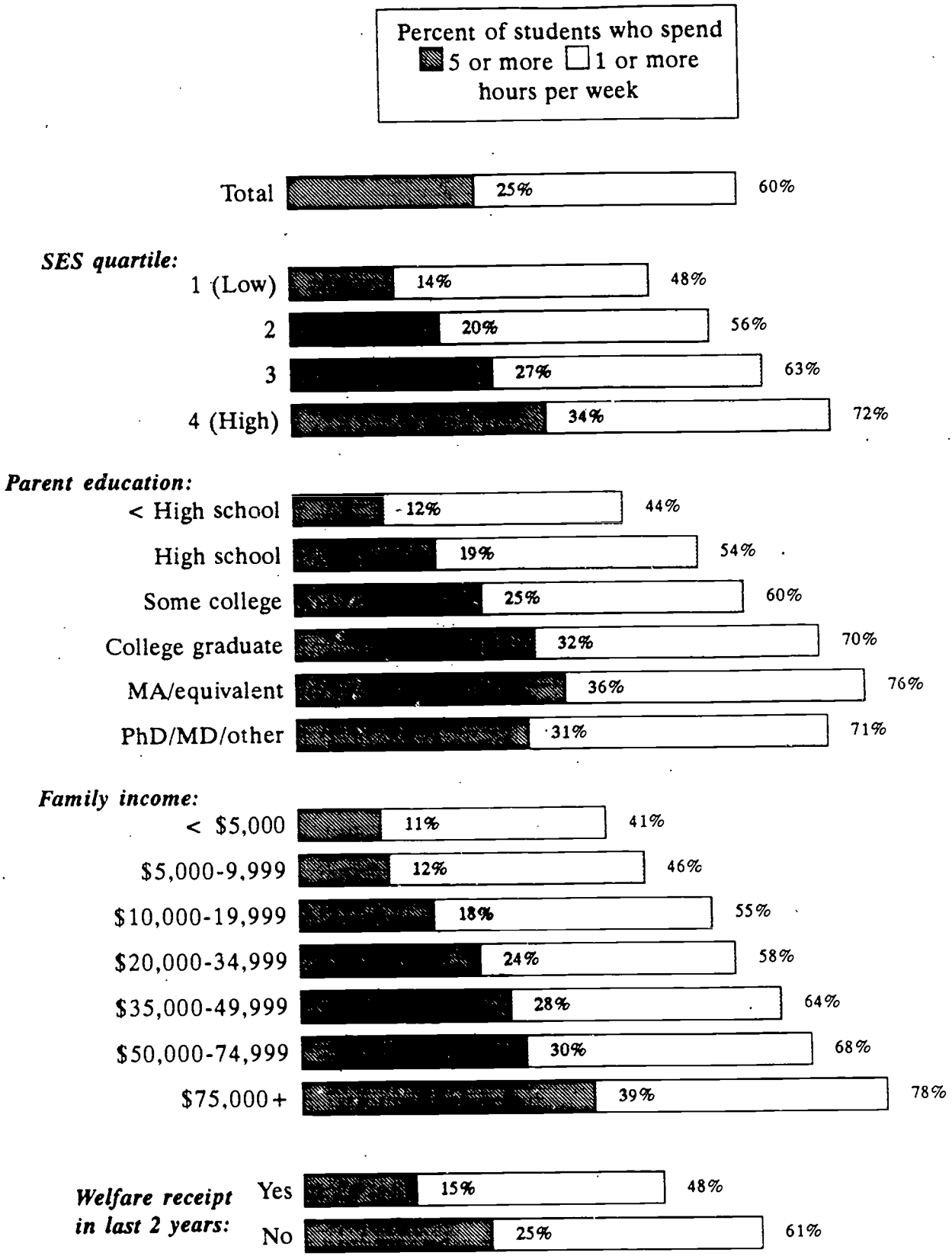
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the Longitudinal Survey of American Youth, Cohort 1, 1987.

Figure 15: Relationship of school and other demographic characteristics to time 10th grade students spend on homework, 1987



Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the Longitudinal Survey of American Youth, Cohort 1, 1987.

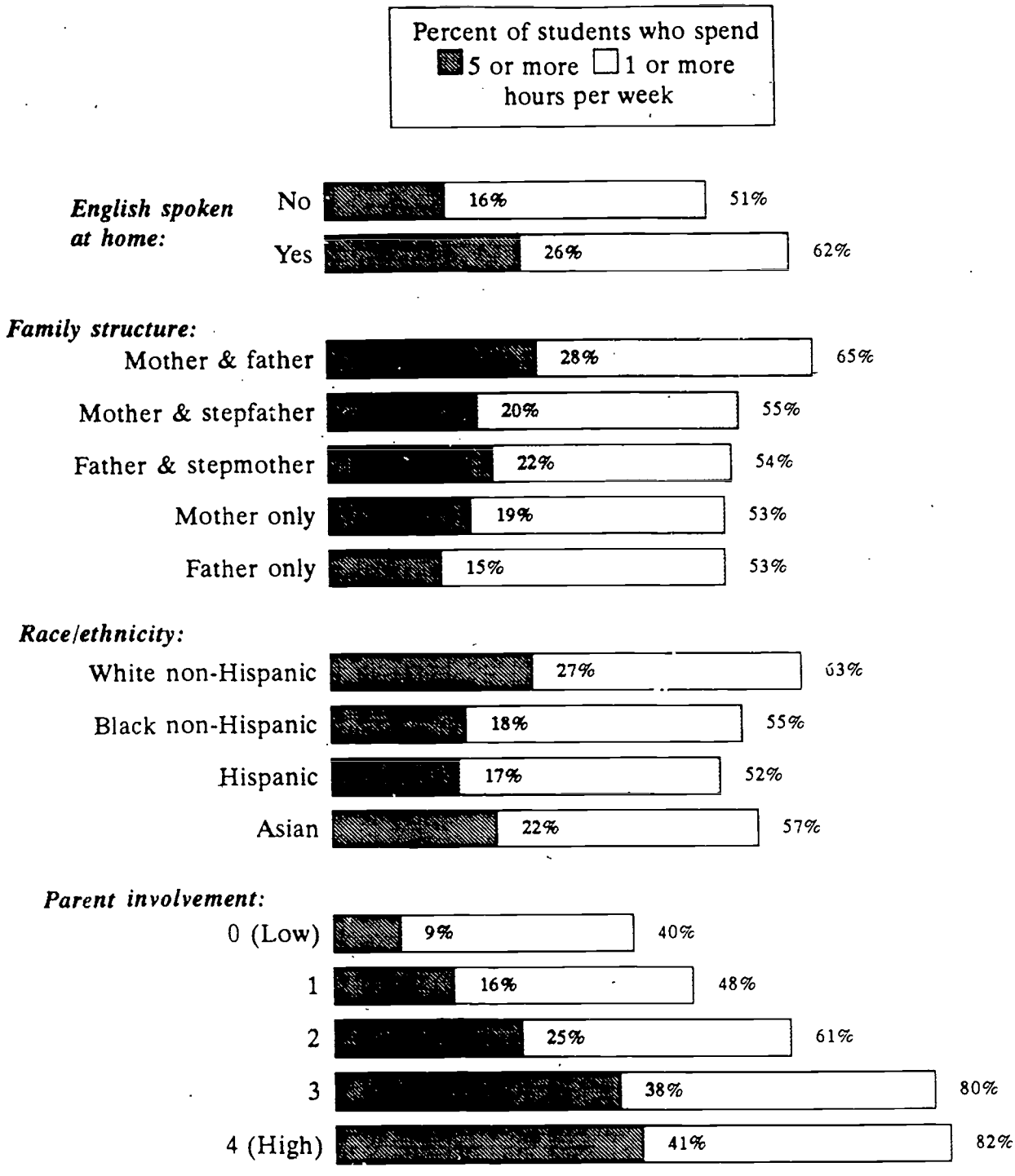
Figure 16: Relationship of family characteristics to time 10th grade students spend in extracurricular activities, 1990



(continued)

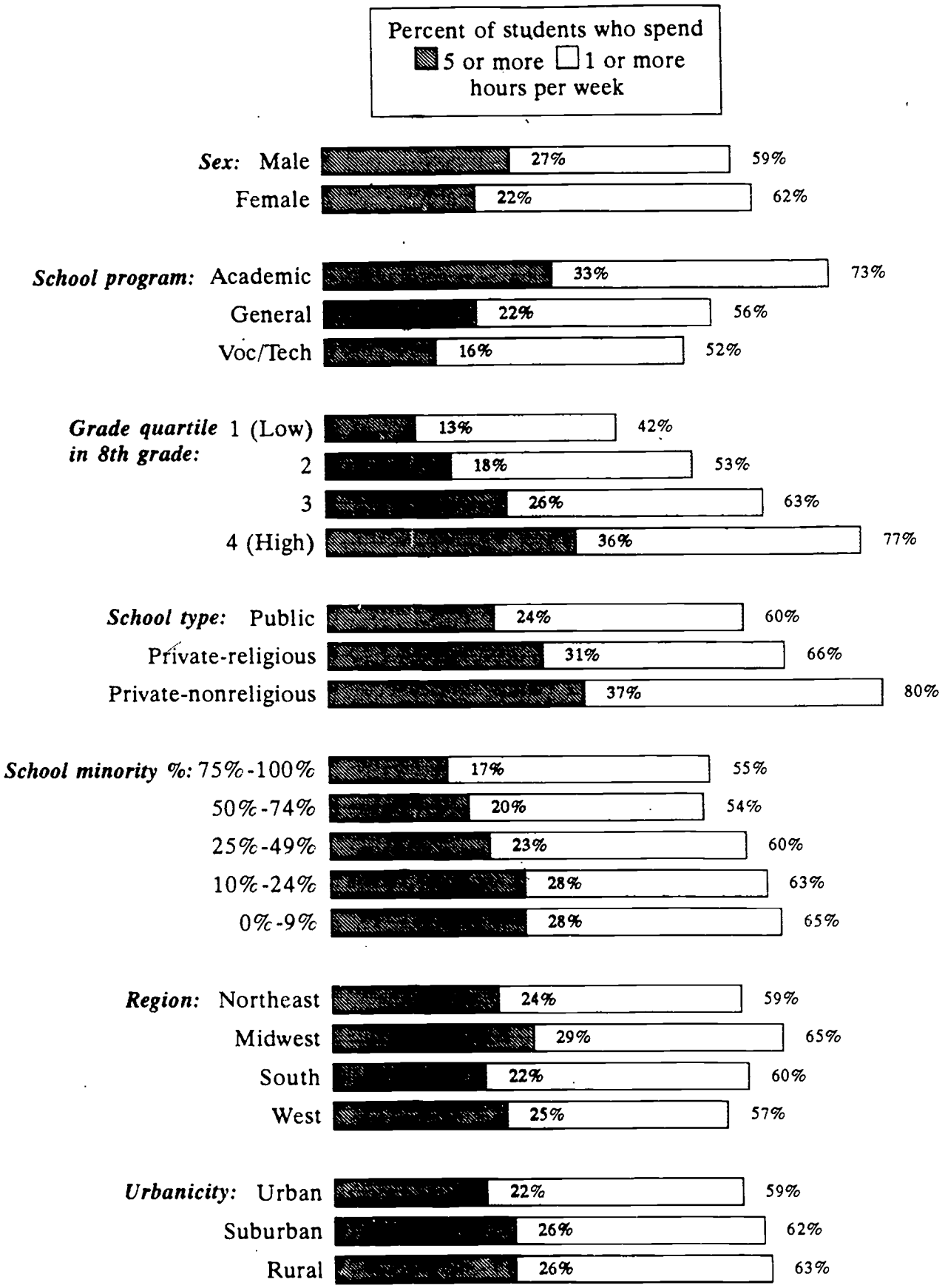
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First Followup Survey, 1990.

Figure 16: (continued) Relationship of family characteristics to time 10th grade students spend in extracurricular activities, 1990



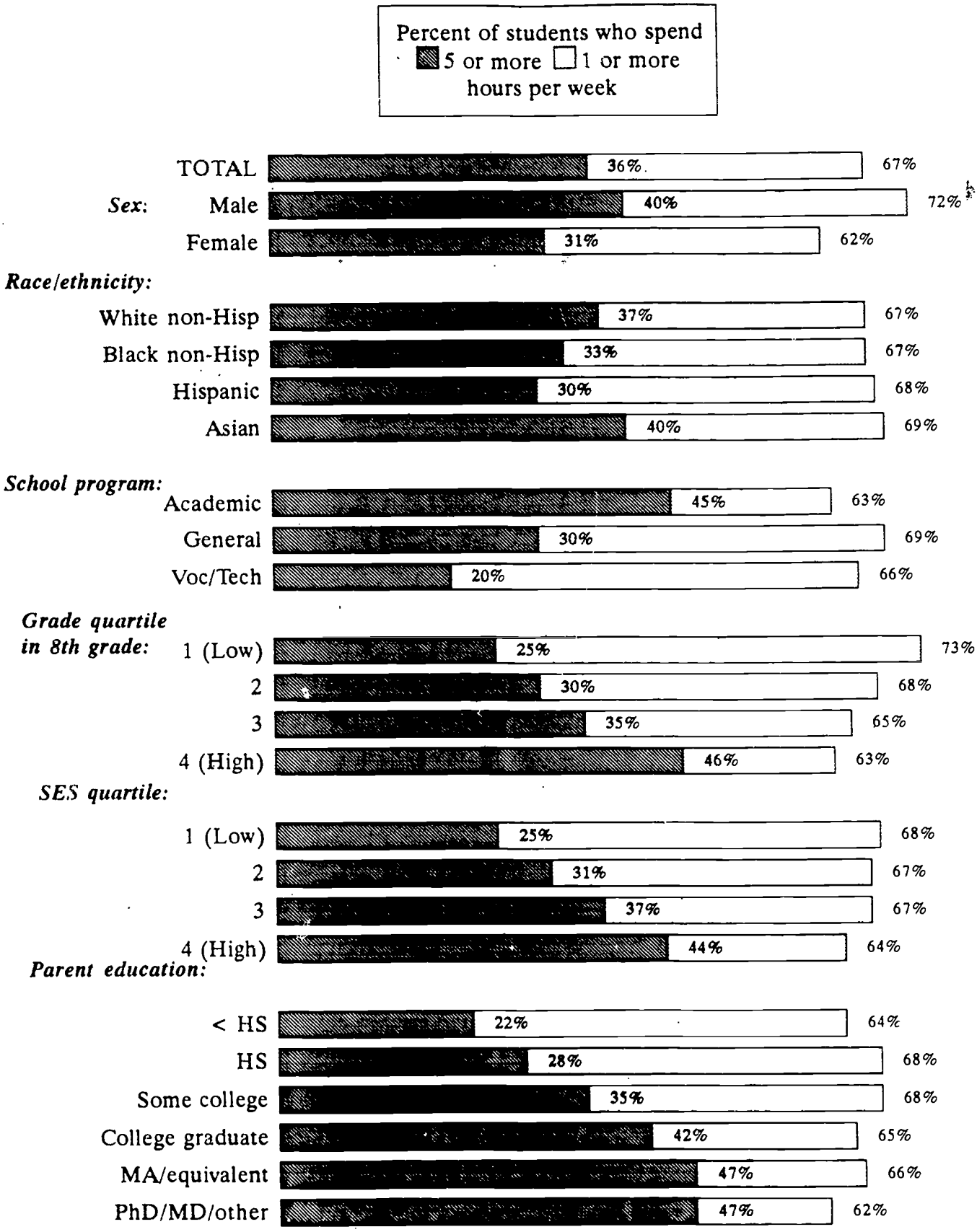
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First Followup Survey, 1990.

Figure 17: Relationship of school and other demographic characteristics to time 10th grade students spend in extracurricular activities, 1990



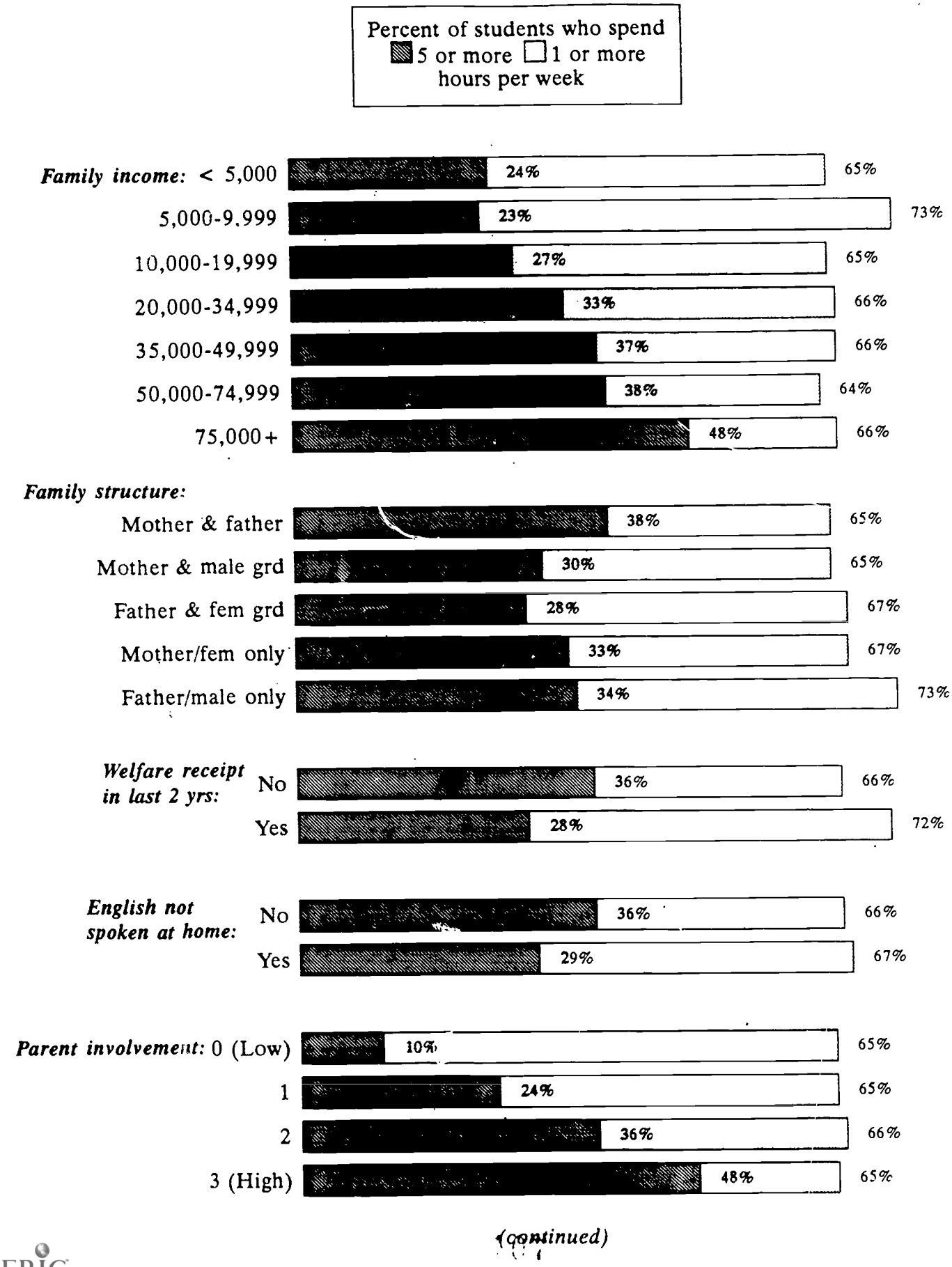
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First Followup Survey, 1990.

Figure 17 Supp.: Hours in a typical week spent on extracurricular activities by 12th grade students, 1992



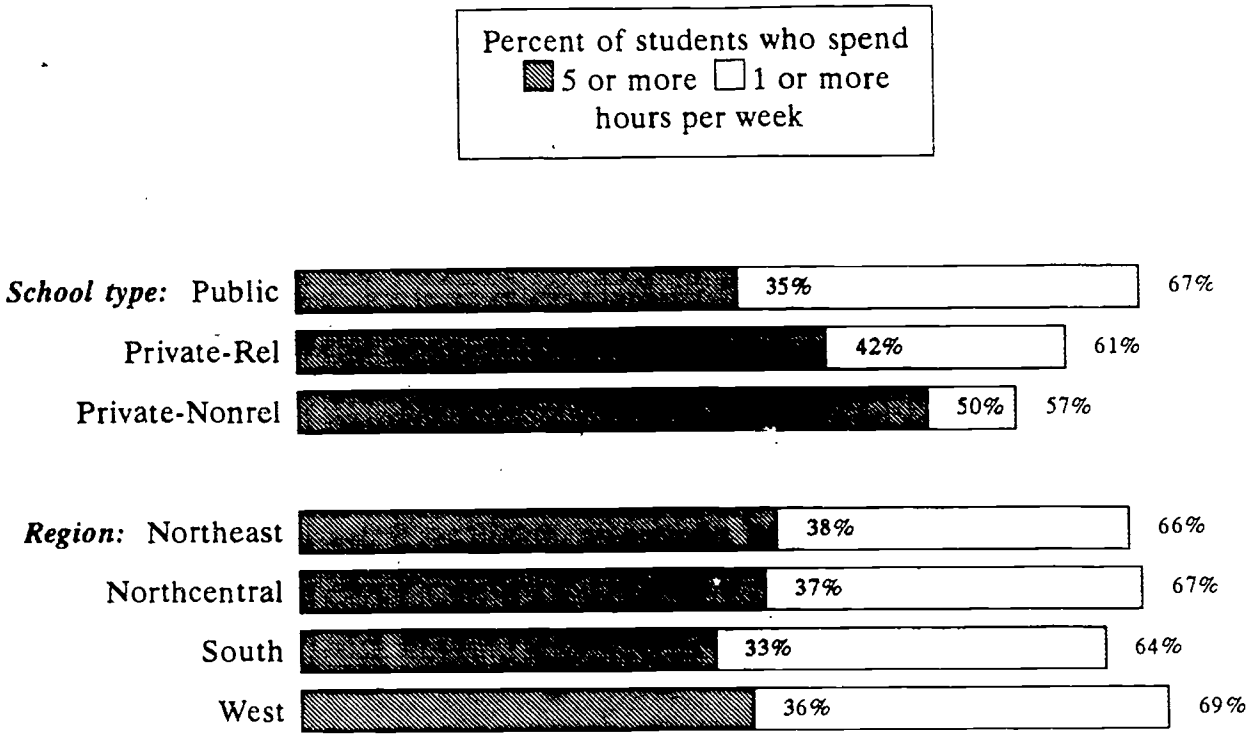
(continued)

Figure 17 Supp. (continued): Hours in a typical week spent on extracurricular activities by 12th grade students, 1992



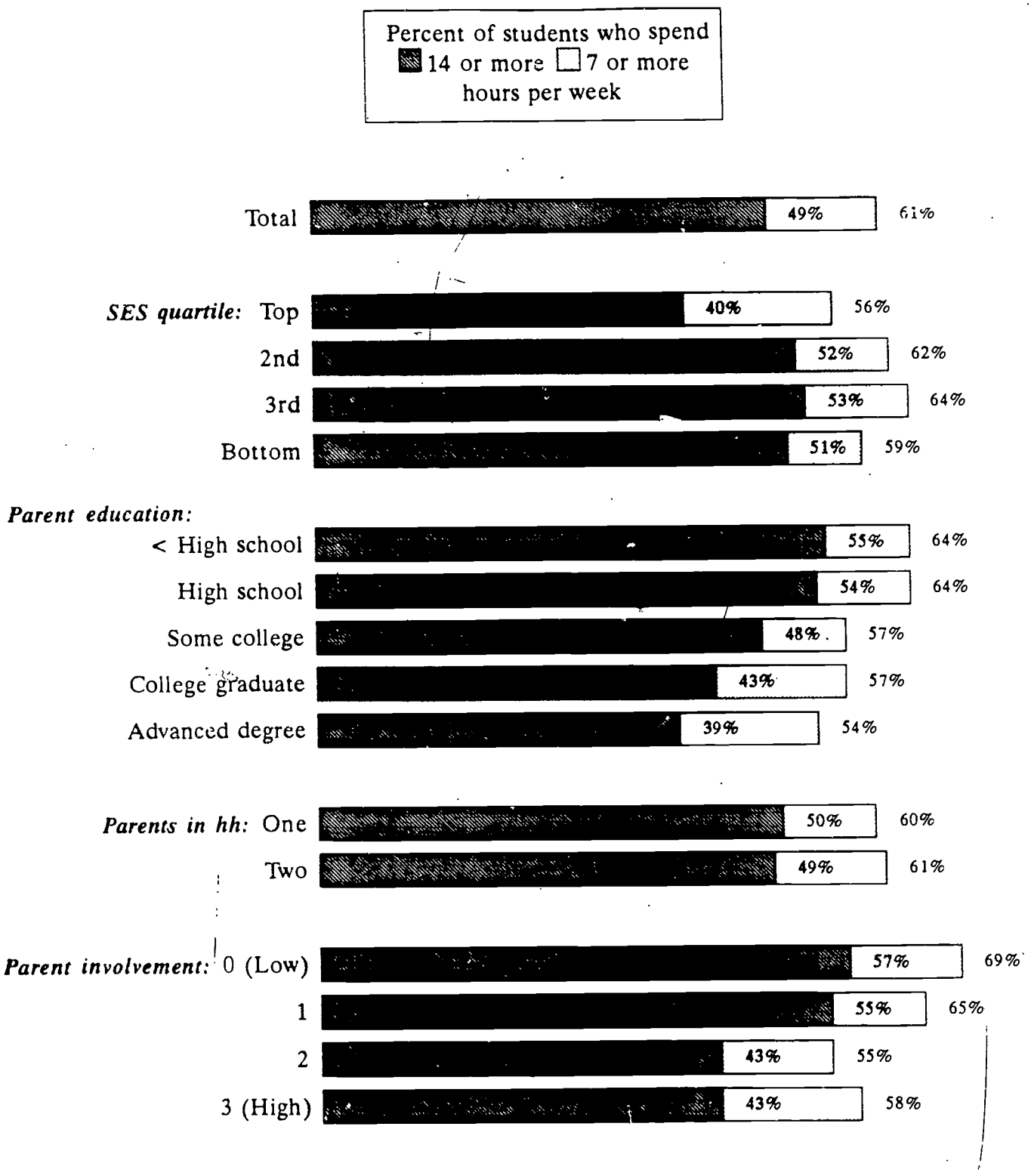
(continued)

Figure 17 Supp. (continued): Hours in a typical week spent on extracurricular activities by 12th grade students, 1992



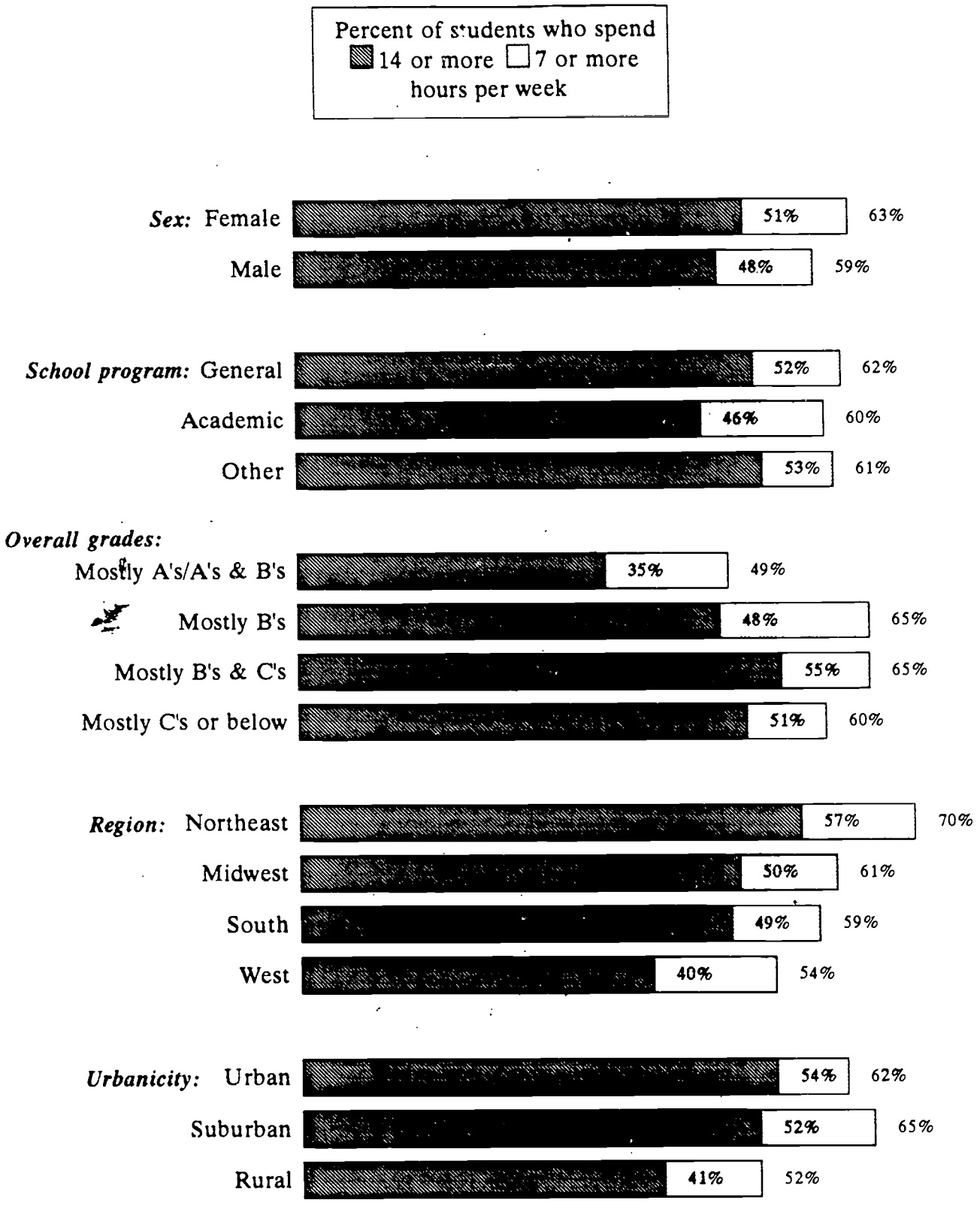
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, Second Followup Survey, 1992.

Figure 18: Relationship of family characteristics to time 10th grade students spend working for pay, 1987



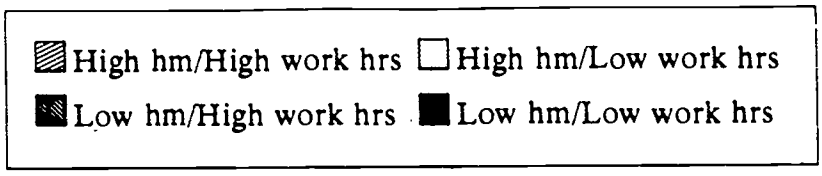
Source. N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the Longitudinal Survey of American Youth, Cohort 1, 1987.

Figure 19: Relationship of school and other demographic characteristics to time 10th grade students spend working for pay, 1987

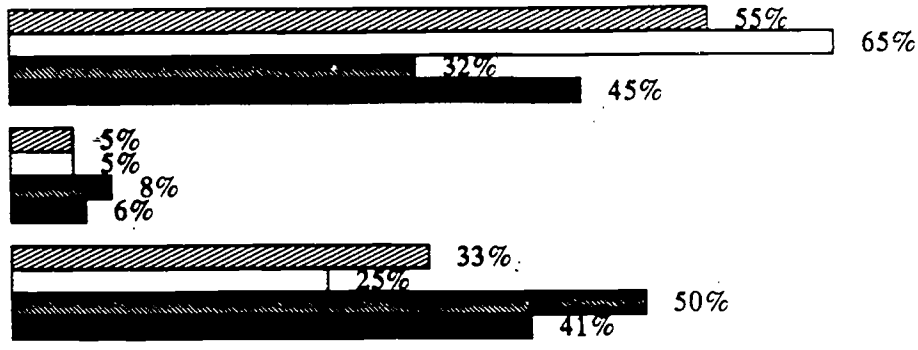


Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the Longitudinal Survey of American Youth, Cohort 1, 1987.

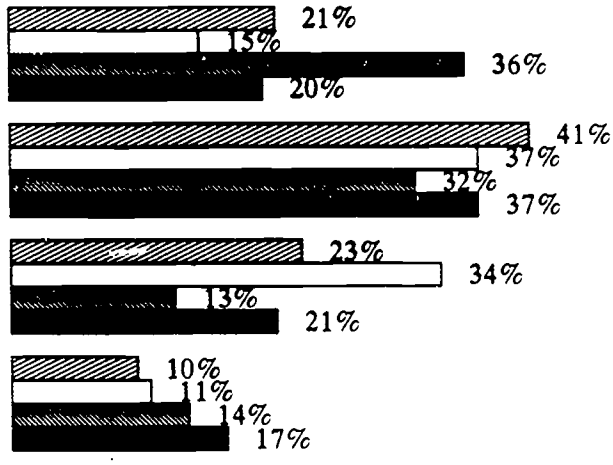
Figure 20. Relationship of time spent by 10th grade students on homework and paid work to their postsecondary school enrollment, employment, and problem behaviors during high school, 1987-1991



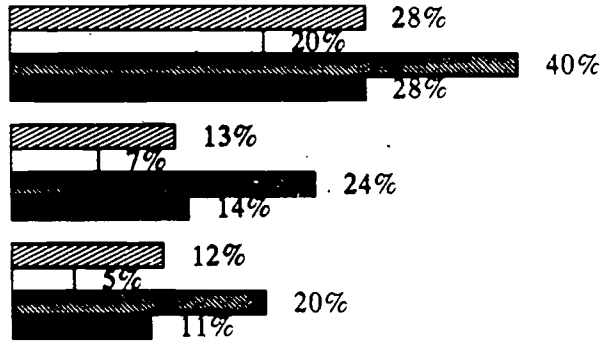
Enrollment status in 1991:



Employment status in 1991:

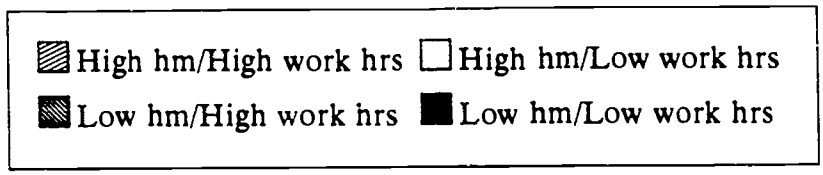


Problem behaviors during high school:



Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the Longitudinal Survey of American Youth, Cohort 1, 1987-1991.

Figure 21. Relationship of time spent by 12th grade students on homework and paid work to their postsecondary school enrollment, employment, and problem behaviors during high school, 1990-1991



Enrollment status in 1991:

Full time student — 60%, 69%, 45%, 52%

Part time student — 6%, 3%, 8%, 5%

Not enrolled — 25%, 22%, 40%, 38%

Employment status in 1991:

Full time — 16%, 10%, 26%, 17%

Part time — 46%, 31%, 40%, 34%

Unemployed — 24%, 41%, 17%, 27%

Not in labor force — 10%, 15%, 12%, 18%

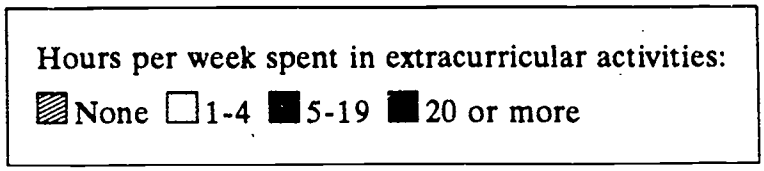
Problem behaviors during high school:

Cut classes now and then — 33%, 33%, 50%, 37%

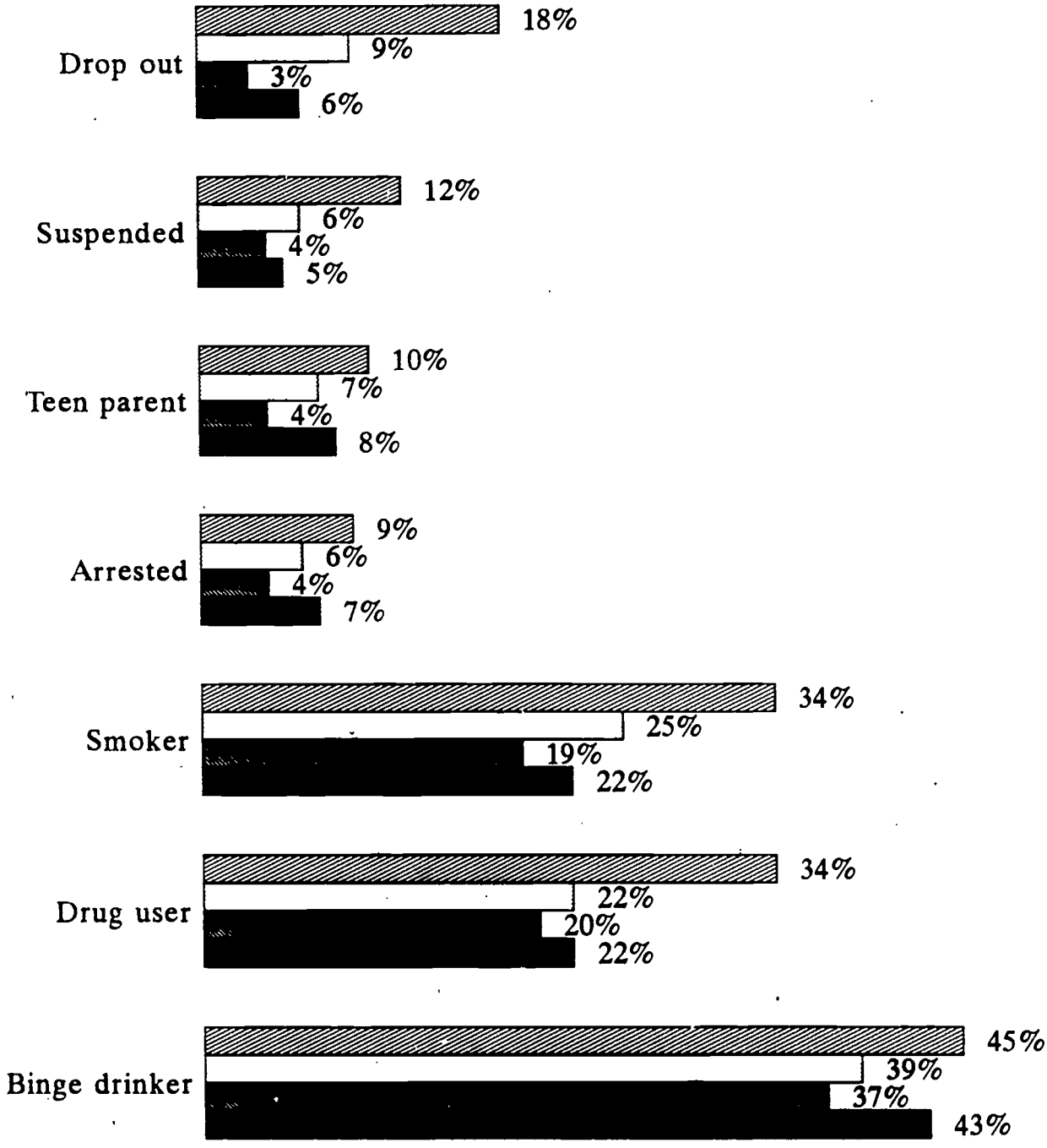
Smoked cigarettes daily in 11th grade — 14%, 8%, 17%, 12%

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the Longitudinal Survey of American Youth, Cohort 1, 1990 and 1991.

Figure 22: Association between time spent in extracurricular activities in 10th grade and problem behaviors exhibited by 12th grade, 1990-1992

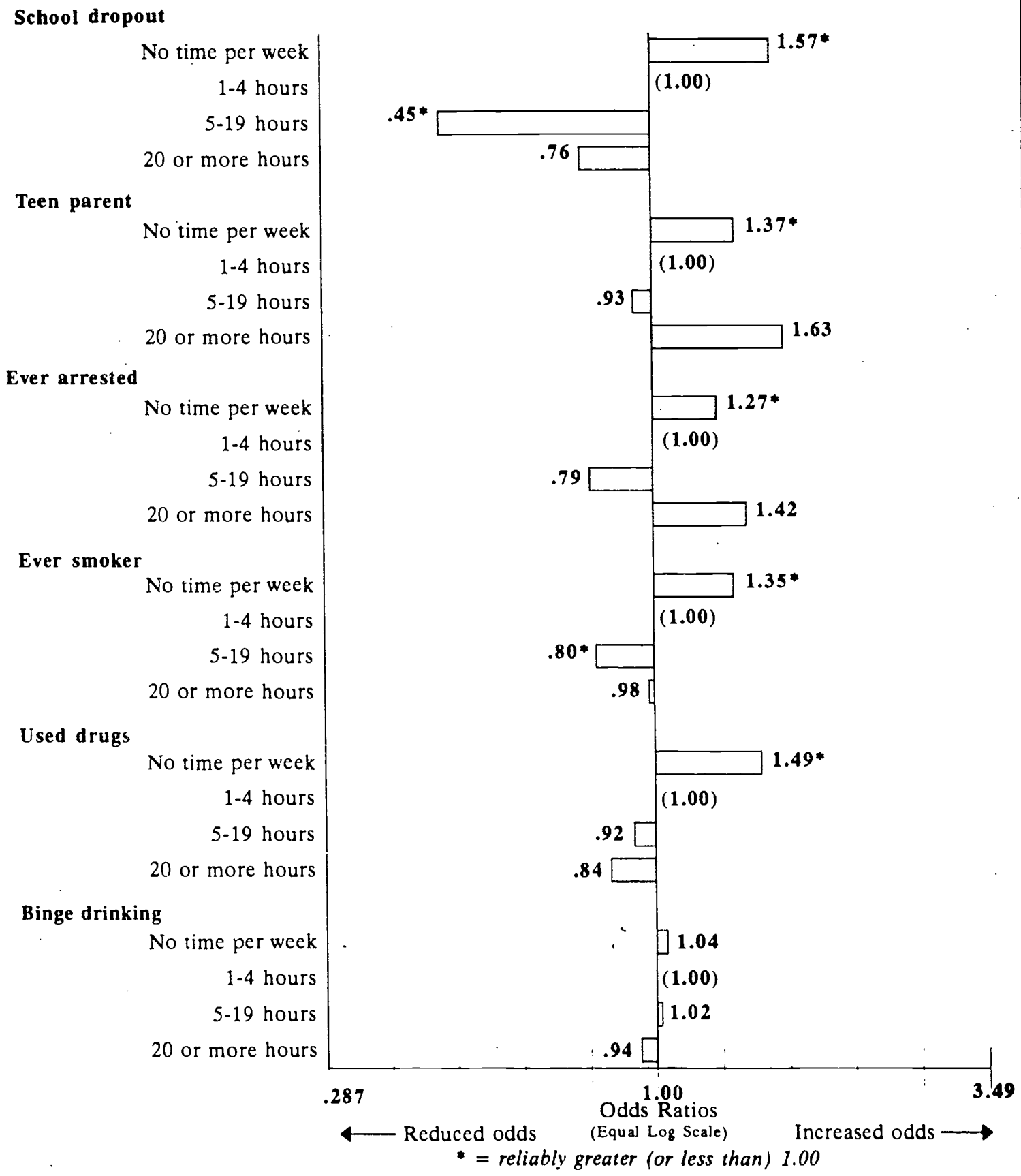


Problem behaviors:



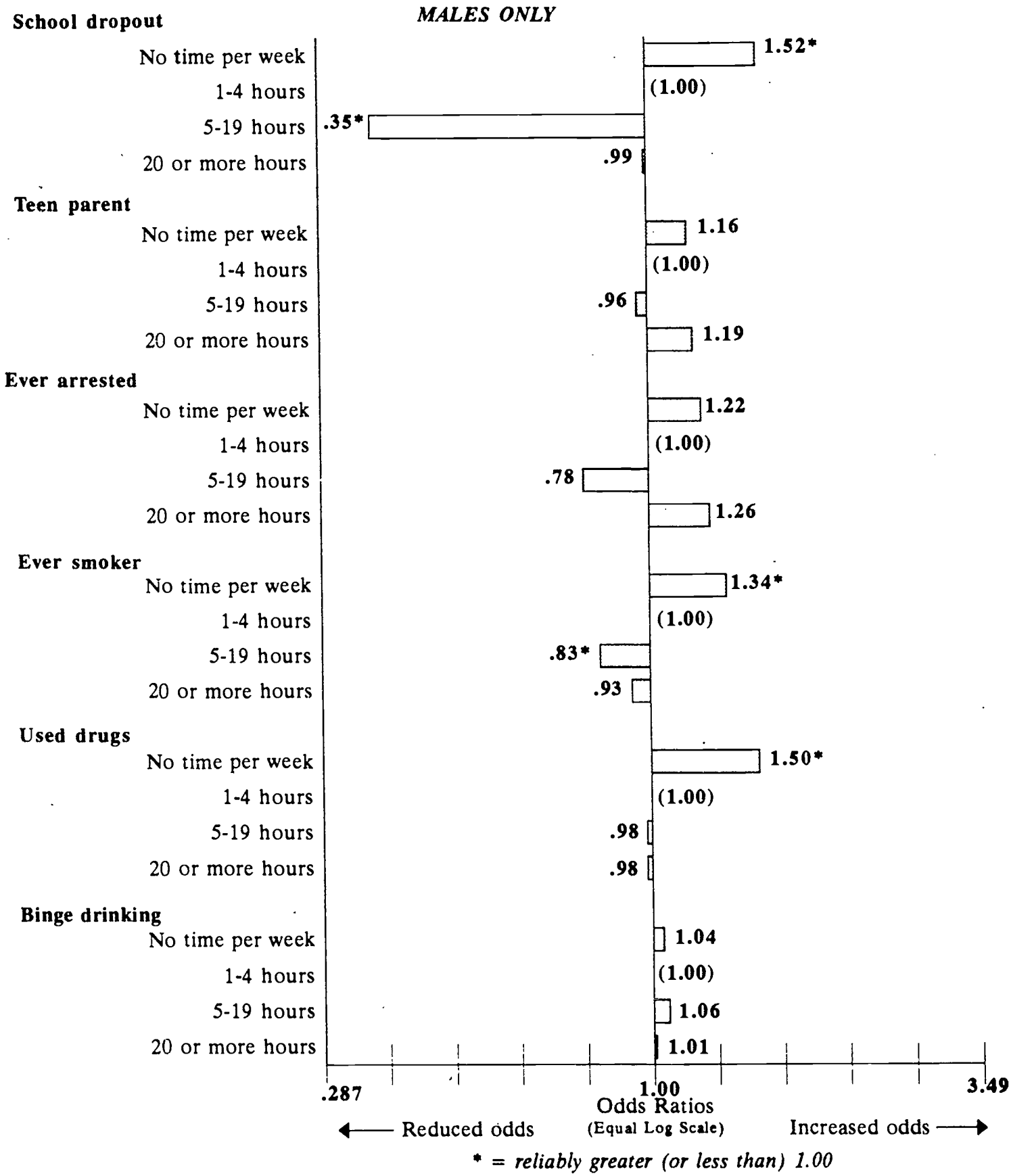
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Follow-up Surveys, 1990 and 1992.

Figure 23: Effects of time spent in extracurricular activities (number of hours per week) on odds of 10th grade students engaging in risky behaviors by their senior year, 1990-1992



Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followup Surveys, 1990 and 1992.

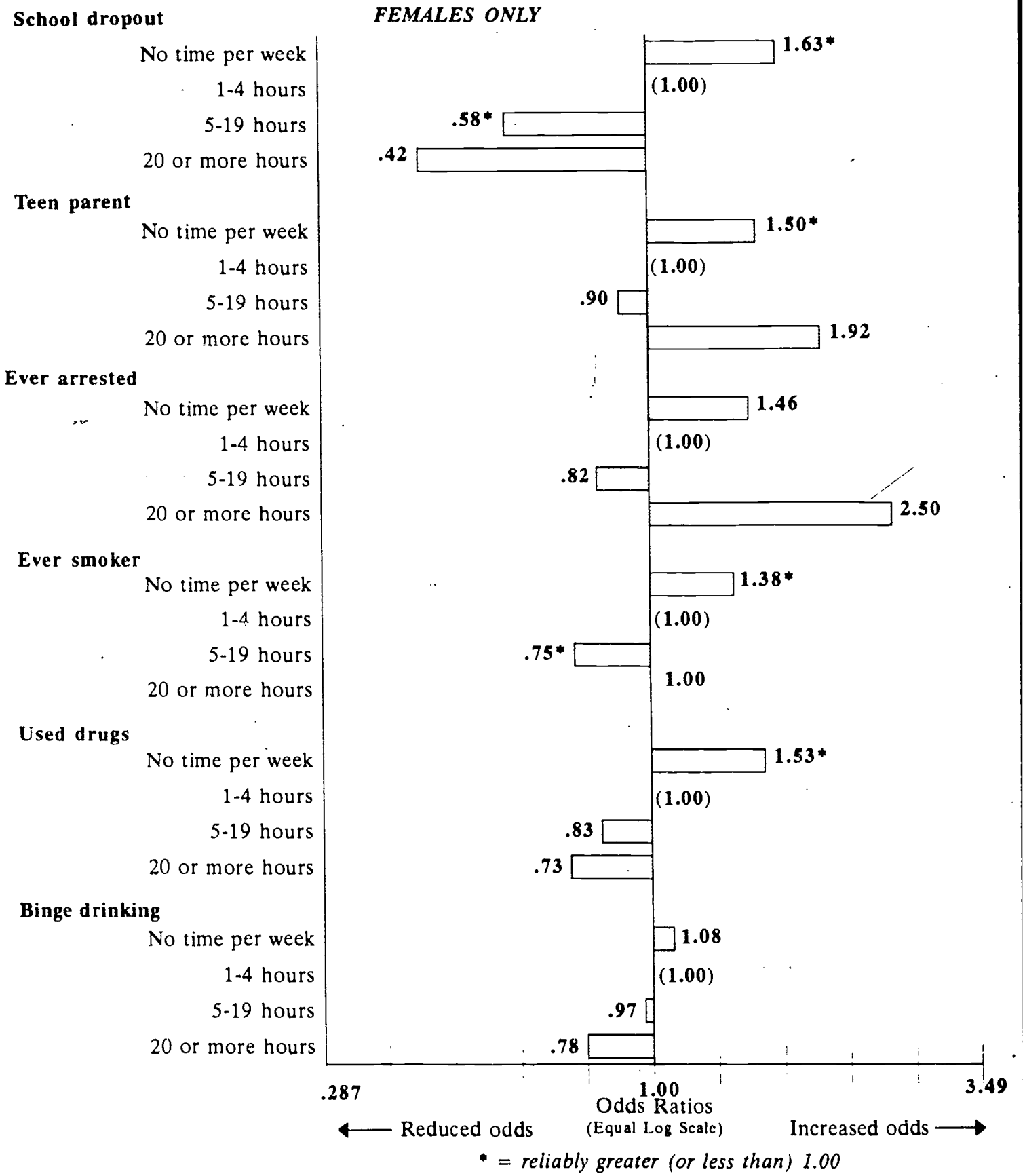
Figure 24: Effects of time spent in extracurricular activities (number of hours per week) on odds of male 10th grade students engaging in risky behaviors by their senior year, 1990-1992



* = *reliably greater (or less than) 1.00*

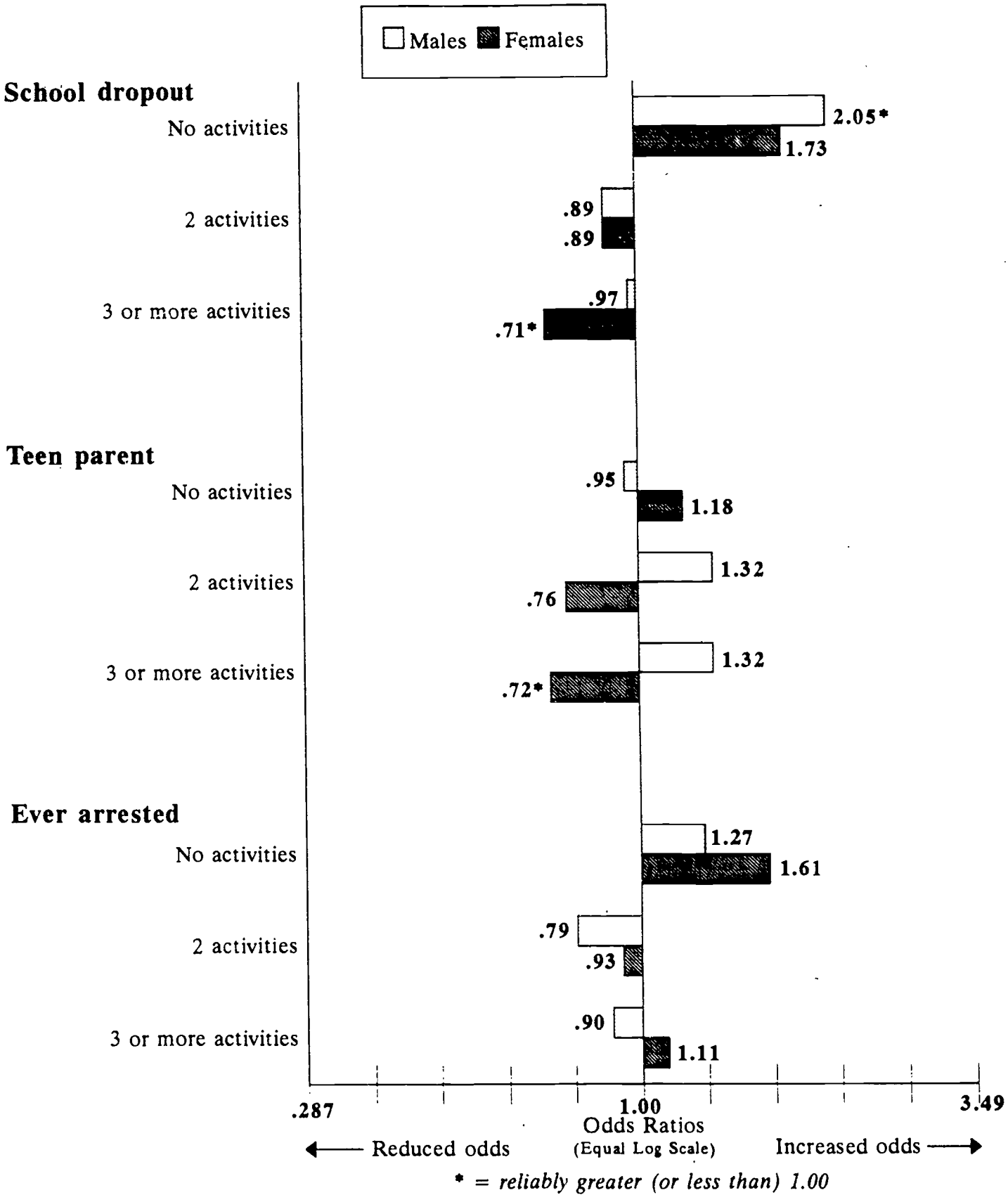
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followup Surveys, 1990 and 1992.

Figure 25: Effects of time spent in extracurricular activities (number of hours per week) on odds of female 10th grade students engaging in risky behviors by their senior year, 1990-1992



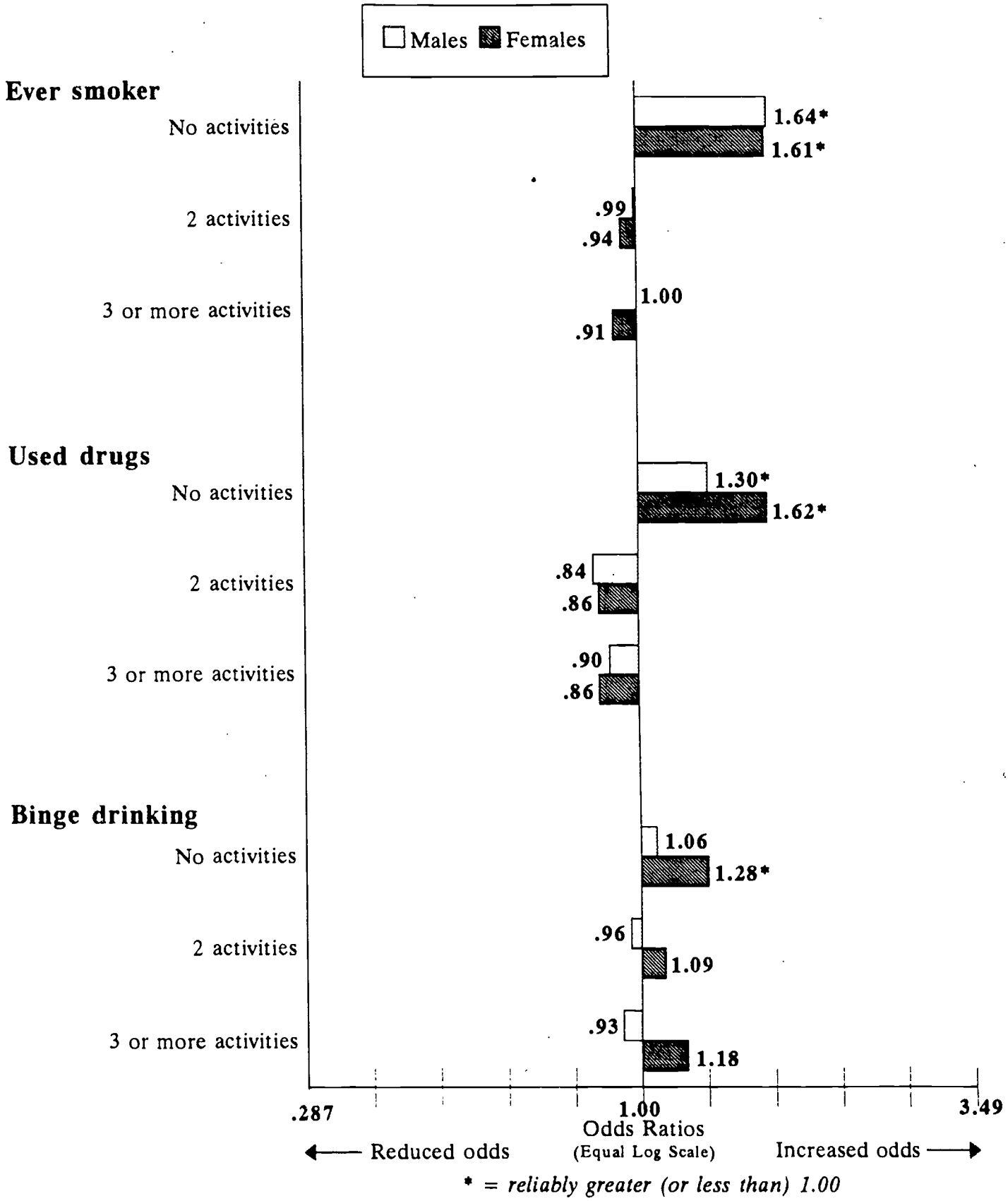
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followup Surveys, 1990 and 1992.

Figure 26: Effects of number of extracurricular activities participated in on odds of male and female 10th grade students engaging in risky behaviors by their senior year, 1990-1992



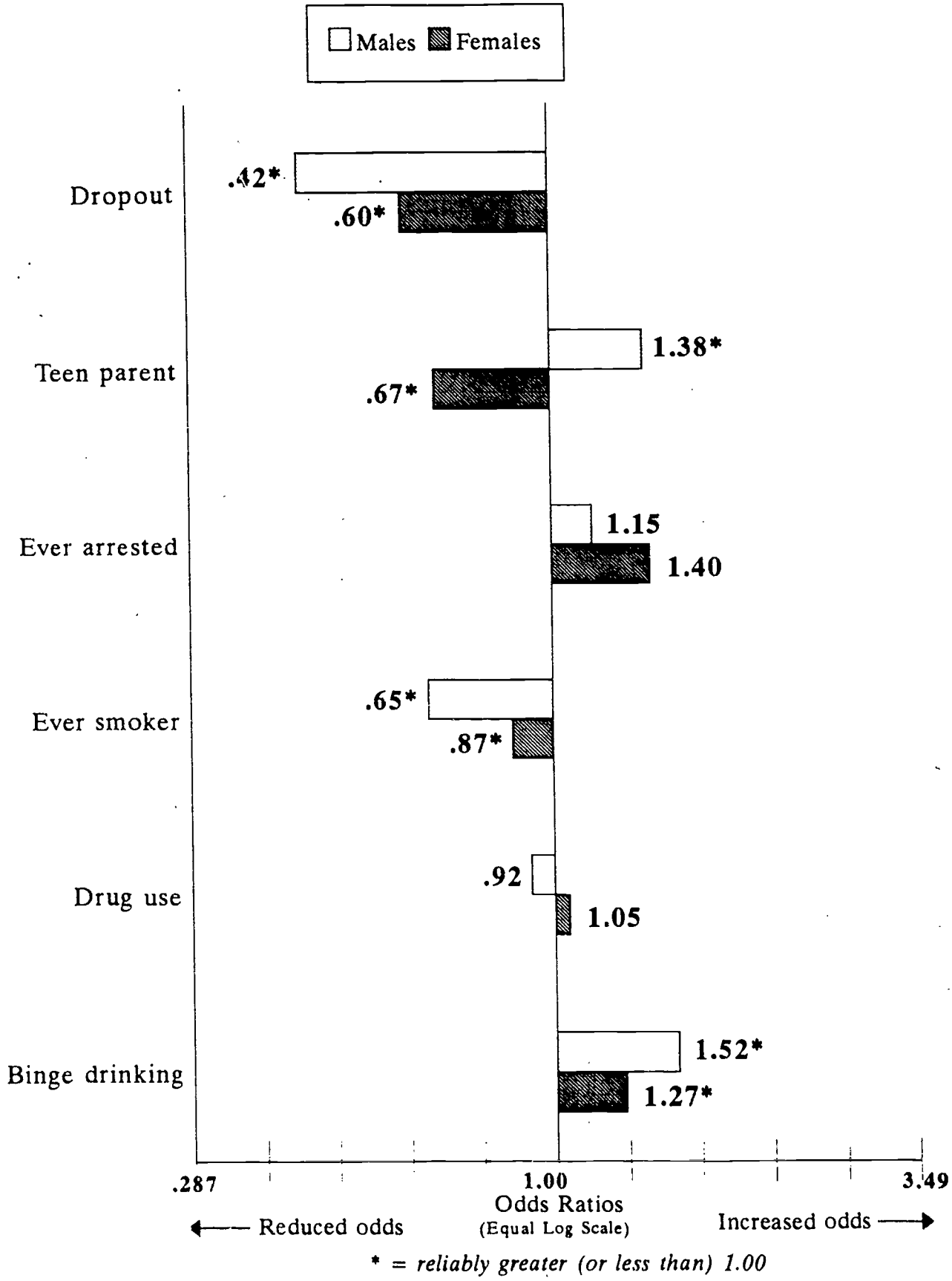
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followup Surveys, 1990 and 1992.

Figure 26: (continued) Effects of number of extracurricular activities participated in on odds of male and female 10th grade students engaging in risky behaviors by their senior year, 1990-1992



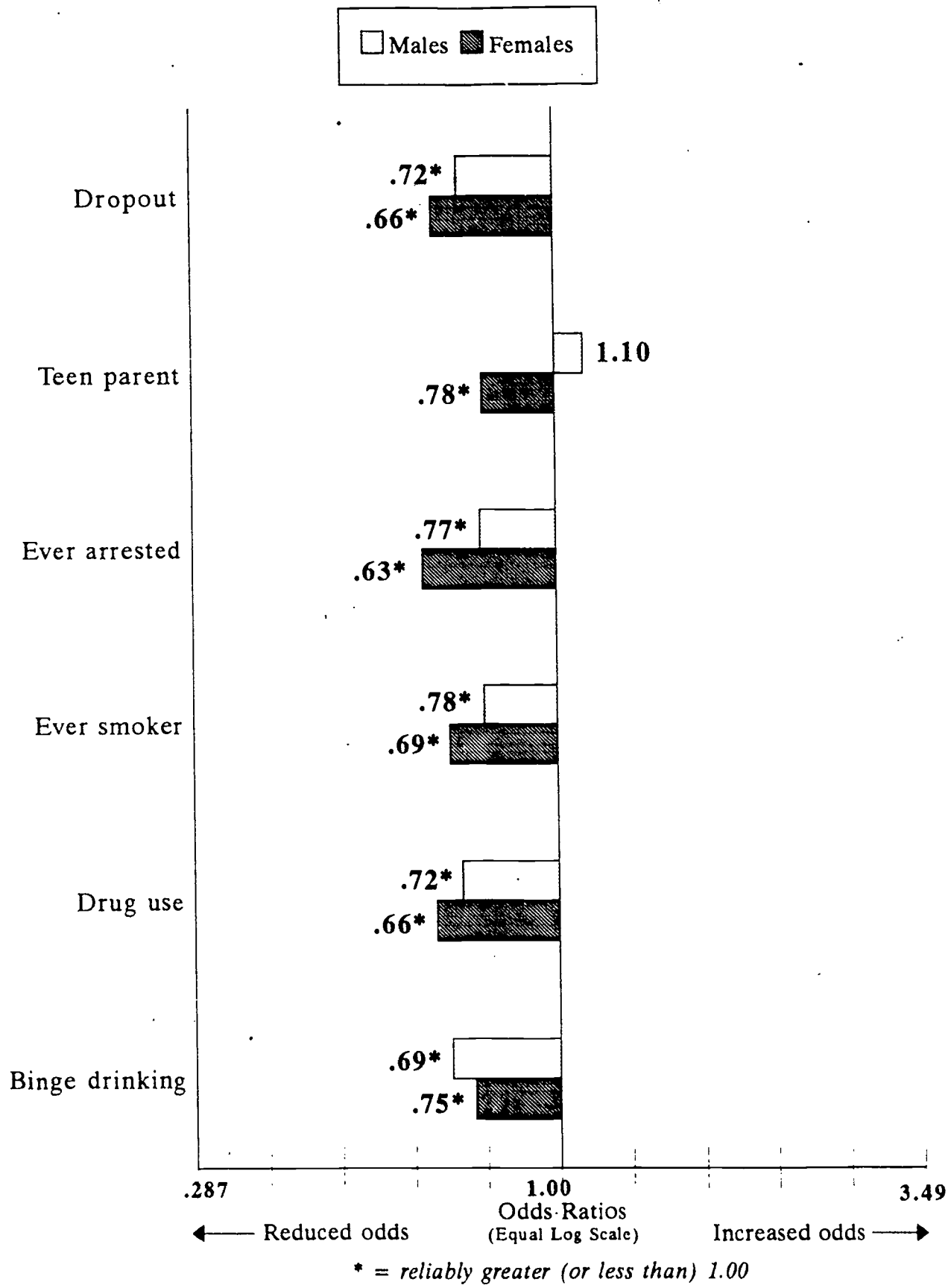
Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followup Surveys, 1990 and 1992.

Figure 27: Effects of participation in varsity or JV sports on odds of male and female 10th grade students engaging in risky behaviors by their senior year, 1990-1992



Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followup Surveys, 1990 and 1992.

Figure 28: Effects of participation in band, orchestra, chorus, school play or musical on odds of male and female 10th grade students engaging in risky behaviors by their senior year, 1990-1992



* = *reliably greater (or less than) 1.00*

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followup Surveys, 1990 and 1992.

Table 1. School Dropout, Teen Parenthood, and Student Arrest Predicted from 10th Grade Participation in Extracurricular Activities (Number of Hours per Week) and Other Student, Family, and School Characteristics, Both Sexes (Mulitple Logistic Regression)

Predictor Variables	School Dropout		Teen Parent		Ever Arrested	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
No time per week	.45 **	1.57	.32 **	1.37	.24 *	1.27
5-19 hours per week	-.81 **	.45	-.07	.93	-.24 +	.79
20 or more hours per week	-.28	.76	.49	1.63	.35	1.42
Sex	.10	1.10	.75 **	2.12	-1.44 **	.24
Student's Grades and School Program						
Grade quartile (8th grade)	-.40 **	.67	-.33 **	.72	-.34 **	.71
General program	.97 **	2.63	.68 **	1.98	.34 **	1.40
Vocational/technical program	1.23 **	3.42	.84 **	2.33	.39 **	1.48
Other program	1.05 **	2.86	.75 **	2.12	40 *	1.49
Family SES						
Parent education	-.15 **	.86	-.20 **	.82	-.14 *	.87
SES quartile	-.24 **	.79	-.19 **	.83	.15 *	1.16
Welfare receipt	.34 +	1.41	.37 *	1.44	.15	1.16
Language minority	-.24 +	.79	-.13	.88	.05	1.05
Parent Involvement						
Low	-.33 **	.72	-.04	.97	.18	1.20
High	-.15	.86	-.06	.94	-.22 +	.81
Missing	-.02	.98	.36 **	1.43	-.06	.94
Family Structure						
Mother only	.32 **	1.38	.13	1.14	.12	1.13
Mother-stepfather	.73 **	2.07	.86 **	2.36	.48 **	1.61
Father only	1.12 **	3.07	.73 **	2.07	.55 **	1.73
Father-stepmother	.70 **	2.01	-.61 +	.54	.26	1.29
Neither parent	.90 **	2.47	.65 **	1.92	.07	1.07
Ethnic Background						
Black	-.47 **	.63	.72 **	2.05	-.24	.79
Hispanic	.00	1.00	.14	1.15	-.38 *	.68
Asian	-.45	.64	.18	1.19	-.28	.76
Type of School						
Private religious	-.73 **	.48	-.82 **	.44	03	1.03
Other private	1.02 **	2.78	-.38	.68	.43	1.54
High minority enrollment	.52 **	1.68	.27 *	1.31	.09	1.10
Medium minority enrollment	.36 **	1.43	.32 **	1.38	.07	1.07
Intercept	-1.65 **		-2.36 **		-1.73 **	
Multiple R (Somer's D)	.61 **		.56 **		47 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 2. Smoking, Drug Use, and Binge Drinking Predicted from 10th Grade Participation in Extracurricular Activities (Number of Hours per Week) and Other Student, Family, and School Characteristics, Both Sexes (Multiple Logistic Regression)

Predictor Variables	Ever Smoker		Used Drugs		Binge Drinking	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
No time per week	.30 **	1.35	.40 **	1.49	.04	1.04
5-19 hours per week	-.23 **	.80	-.09	.92	.02	1.02
20 or more hours per week	-.03	98	-.18	.84	-.06	.94
Sex	-.01	.99	-.33 **	.72	-.61 **	.54
Student's Grades and School Program						
Grade quartile (8th grade)	-.29 **	.75	-.27 **	.76	-.27 **	.77
General program	.25 **	1.29	.02	1.02	.23 **	1.26
Vocational/technical program	.34 **	1.41	-.03	.97	.23 **	1.26
Other program	.40 **	1.49	-.02	.98	.34 **	1.40
Family SES						
Parent education	-.06 +	.95	-.01	.99	-.10 **	.91
SES quartile	.07 *	1.07	.15 **	1.17	.07 *	1.07
Welfare receipt	.18	1.20	.30 +	1.34	-.11	.90
Language minority	-.48 **	.62	-.37 **	.69	-.35 **	.71
Parent Involvement						
Low	.08	1.09	.01	1.01	.03	1.03
High	-.26 **	.77	-.24 **	.79	-.08	.92
Missing	-.29 **	75	-.19 *	.82	.07	1.07
Family Structure						
Mother only	.12 +	1.13	.42 **	1.53	.06	1.07
Mother-stepfather	.31 **	1.37	.42 **	1.52	.07	1.07
Father only	.30 *	1.36	.85 **	2.34	.45 **	1.57
Father-stepmother	.52 **	1.68	.46 **	1.59	.12	1.13
Neither parent	.54 **	1.71	.47 **	1.60	08	1.08
Ethnic Background						
Black	-1.47 **	.23	-.75 **	.47	-.70 **	.50
Hispanic	-.10	91	.20 +	1.22	.20 *	1.22
Asian	-.57 **	57	-.50 **	.61	-.66 **	.52
Type of School						
Private religious	.24 **	1.27	-.02	.98	18 *	1.20
Other private	.46 *	1.59	34 +	1.40	.32 +	1.37
High minority enrollment	-.24 **	78	-.09	.91	-.17 *	.85
Medium minority enrollment	.01	1.01	.21 **	1.23	-.00	1.00
Intercept	-.32 **		-.75 **		.69 **	
Multiple R (Somer's D)	.36 **		.33 **		.30 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992

Table 3. School Dropout, Teen Parenthood, and Student Arrest Predicted from 10th Grade Participation in Extracurricular Activities (Number of Hours per Week) and Other Student, Family, and School Characteristics, Males (Mulitple Logistic Regression)

Predictor Variables	School Dropout		Teen Parent		Ever Arrested	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
No time per week	.42 **	1.52	.15	1.16	.20 +	1.22
5-19 hours per week	1.06 **	.35	-.04	.96	-.24 +	.78
20 or more hours per week	-.01	.99	.18	1.19	.23	1.26
Student's Grades and School Program						
Grade quartile (8th grade)	-.42 **	.65	-.28 **	.75	-.32 **	.72
General program	1.08 **	2.93	.61 **	1.84	.30 *	1.35
Vocational/technical program	1.41 **	4.09	.96 **	2.62	.50 **	1.65
Other program	1.13 **	3.09	.94 **	2.56	.37 +	1.45
Family SES						
Parent education	- 11	.90	-.16 +	.85	-.18 **	.83
SES quartile	-.19 *	.82	-.17 +	.85	.20 **	1.22
Welfare receipt	42	1.52	.35	1.42	.07	1.07
Language minority	- 48 *	.62	-.24	.79	.23	1.26
Parent Involvement						
Low	-.25 +	78	-.06	.94	.33 *	1.39
High	-.14	.87	.19	1.20	-.15	.87
Missing	-.06	.94	.63 **	1.88	.02	1.02
Family Structure						
Mother only	.47 **	1.59	-.07	94	.25 +	1.29
Mother-stepfather	.73 **	2.08	.55 **	1.74	.37 *	1.45
Father only	1.23 **	3.41	.42	1.53	.38	1.46
Father-stepmother	82 **	2.28	-.77	.46	.36	1.43
Neither parent	.94 **	2.56	.04	1.04	.20	1.22
Ethnic Background						
Black	-.48 **	.62	.66 **	1.93	-.18	.83
Hispanic	.15	1 16	.21	1.23	-.50 *	.61
Asian	- 80 +	45	.57	1.77	-.50	.61
Type of School						
Private religious	-.99 **	.37	-.75 +	.47	.15	1.16
Other private	1.71 **	5.53	-.14	.87	.58	1.78
High minority enrollment	.68 **	1 97	.55 **	1.73	.17	1.19
Medium minority enrollment	.48 **	1.61	.42 *	1.52	.09	1.10
Intercept	-1.98 **		-2.61 **		-1.86 **	
Multiple R (Somer's D)	61 **		.50 **		.30 **	

** p = < .01; * p = < 05; + p = < .10

Source. N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 4. Smoking, Drug Use, and Binge Drinking Predicted from 10th Grade Participation in Extracurricular Activities (Number of Hours per Week) and Other Student, Family, and School Characteristics, Males (Multiple Logistic Regression)

Predictor Variables	Ever Smoker		Used Drugs		Binge Drinking	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
No time per week	.30 **	1.34	.41 **	1.50	.03	1.04
5-19 hours per week	-.19 *	.83	-.02	.98	.06	1.06
20 or more hours per week	-.08	.93	-.13	.88	.01	1.01
Student's Grades and School Program						
Grade quartile (8th grade)	-.23 **	.79	-.31 **	.73	-.29 **	.75
General program	.31 **	1.37	.03	1.03	.12 +	1.13
Vocational/technical program	.48 **	1.62	.07	1.08	.14	1.15
Other program.	.34 *	1.40	-.26	.77	.20	1.22
Family SES						
Parent education	-.08 +	.92	-.07	.94	-.19 **	.83
SES quartile	.09 *	1.10	22 **	1.24	.10 *	1.11
Welfare receipt	.51 *	1.67	.56 **	1.75	.10	1.11
Language minority	-.37 **	.69	-.47 **	.63	-.48 **	.62
Parent Involvement						
Low	.29 **	1.33	.10	1.10	-.02	.98
High	-.00	1.00	-.04	.96	.04	1.04
Missing	-.07	.93	.18 +	1.20	.33 **	1.39
Family Structure						
Mother only	.09	1.10	.38 **	1.47	.01	1.01
Mother-stepfather	.30 **	1.35	.40 **	1.49	.20 *	1.23
Father only	.00	1.01	.51 **	1.66	.39 *	1.48
Father-stepmother	.60 **	1.82	.25	1.28	.37 +	1.45
Neither parent	.37 +	1.45	.55 *	1.73	.07	1.07
Ethnic Background						
Black	-1.26 **	.28	-.61 **	.54	-.74 **	.48
Hispanic	-.04	.96	.41 **	1.50	.18	1.20
Asian	-.62 **	.54	-.33	.72	-.67 **	.51
Type of School						
Private religious	.45 **	1.57	.14	1.15	.13	1.14
Other private	.54 *	1.72	.60 *	1.83	.30	1.35
High minority enrollment	-.17 +	.85	-.04	.96	-.06	.94
Medium minority enrollment	.01	1.01	.15	1.16	-.03	.97
Intercept	-.65 **		-.80 **		.91 **	
Multiple R (Somer's D)	.32 **		.29 **		.26 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 5. School Dropout, Teen Parenthood, and Student Arrest Predicted from 10th Grade Participation in Extracurricular Activities (Number of Hours per Week) and Other Student, Family, and School Characteristics, Females (Mulitple Logistic Regression)

Predictor Variables	School Dropout		Teen Parent		Ever Arrested	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
No time per week	.49 **	1.63	.41 **	1.50	.38 +	1.46
5-19 hours per week	-.55 **	.58	-.11	.90	-.19	.82
20 or more hours per week	-.86	.42	.65	1.92	.92	2.50
Student's Grades and School Program						
Grade quartile (8th grade)	-.38 **	.69	-.36 **	.70	-.42 **	.66
General program	.90 **	2.46	.73 **	2.07	.46 *	1.58
Vocational/technical program	1.08 **	2.96	.74 **	2.10	-.16	.85
Other program	1.03 **	2.79	.62 **	1.86	.41	1.50
Family SES						
Parent education	-.19 **	.83	-.22 **	.81	-.01	.99
SES quartile	-.29 **	.75	-.20 **	.82	-.01	.99
Welfare receipt	.28	1.32	.33	1.39	.28	1.32
Language minority	-.06	.94	-.06	.94	-.74	.48
Parent Involvement						
Low	-.38 **	.68	-.05	.96	-.23	.79
High	-.15	.86	-.19	.83	-.45 +	.64
Missing	.02	1.02	.15	1.17	-.39	.68
Family Structure						
Mother only	.20	1.22	.27 *	1.31	-.31	.73
Mother-stepfather	.73 **	2.07	1.00 **	2.72	.67 **	1.95
Father only	.90 **	2.46	1.01 **	2.75	1.25 **	3.48
Father-stepmother	.59 +	1.81	-.49	.62	-.25	.78
Neither parent	.89 **	2.43	1.02 **	2.78	-.60	.55
Ethnic Background						
Black	-.48 **	.62	.73 **	2.08	-.49	.61
Hispanic	-.09	.92	.10	1.11	.03	1.04
Asian	-.16	.85	-.23	.80	.36	1.44
Type of School						
Private religious	-.54 +	.58	-.86 **	.42	-.64	.53
Other private	-.79	.45	-.69	.50	-1.06	.35
High minority enrollment	.40 **	1.49	.12	1.13	-.16	.85
Medium minority enrollment	.26 +	1.30	.27 +	1.31	-.02	.98
Intercept	-1.27 **		-1.48 **		-2.78 **	
Multiple R (Somer's D)	.62 **		.59 **		.35 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 6. Smoking, Drug Use, and Binge Drinking Predicted from 10th Grade Participation in Extracurricular Activities (Number of Hours per Week) and Other Student, Family, and School Characteristics, Females (Multiple Logistic Regression)

Predictor Variables	Ever Smoker		Used Drugs		Binge Drinking	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
No time per week	.32 **	1.38	.43 **	1.53	.08	1.08
5-19 hours per week	-.29 **	.75	-.19 +	.83	-.03	.97
20 or more hours per week	.00	1.00	-.32	.73	-.25	.78
Student's Grades and School Program						
Grade quartile (8th grade)	-.35 **	.70	-.23 **	.80	-.25 **	.78
General program	.20 **	1.22	.04	1.04	.35 **	1.41
Vocational/technical program	.15	1.17	-.20	.82	.33 **	1.39
Other program	.51 **	1.66	.29 +	1.34	.49 **	1.64
Family SES						
Parent education	-.02	.98	.06	1.06	.00	1.00
SES quartile	.05	1.05	.09 +	1.10	.03	1.03
Welfare receipt	-.23	.79	-.08	.93	-.34	.71
Language minority	-.62 **	.54	-.24	.78	-.19	.83
Parent Involvement						
Low	-.10	.91	-.07	.93	.07	1.07
High	-.53 **	.59	-.47 **	.62	-.23 **	.80
Missing	-.54 **	.58	-.73 **	.48	-.24 *	.79
Family Structure						
Mother only	.17 +	1.19	.50 **	1.65	.14	1.16
Mother-stepfather	.34 **	1.40	.46 **	1.58	-.04	.96
Father only	.80 **	2.23	1.35 **	3.87	.54 *	1.72
Father-stepmother	.42 +	1.52	.75 **	2.13	-.22	.80
Neither parent	.73 **	2.07	.35	1.43	.06	1.06
Ethnic Background						
Black	-1.72 **	.18	-.98 **	.38	-.69 **	.50
Hispanic	-.17	.84	-.05	.95	.19	1.21
Asian	-.60 **	.55	-.73 **	.48	-.67 **	.51
Type of School						
Private religious	.01	1.01	-.22	.80	.23 *	1.25
Other private	.33	1.40	-.16	.85	.38	1.46
High minority enrollment	-.30 **	.74	-.11	.90	-.28 **	.76
Medium minority enrollment	.02	1.02	.28 **	1.33	.03	1.03
Intercept	-.01		-1.10 **		-.19	
Multiple R (Somer's D)	.40 **		.35 **		.28 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 7. School Dropout, Teen Parenthood, and Student Arrest Predicted from 10th Grade Participation in Extracurricular Activities and Other Student, Family, and School Characteristics, Males (Multiple Logistic Regression)

Predictor Variables	School Dropout		Teen Parent		Ever Arrested	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
In no activities	.72 **	2.05	-.05	.95	.24 +	1.27
In two activities	-.12	.89	.28	1.32	-.24 +	.79
In three or more activities	-.03	.97	.28	1.32	-.10	.90
Student's Grades and School Program						
Grade quartile (8th grade)	-.43 **	.65	-.38 **	.68	-.34 **	.71
General program	1.24 **	3.46	.64 **	1.90	.50 **	1.66
Vocational/technical program	1.48 **	4.40	1.00 **	2.72	.65 **	1.92
Other program	1.13 **	3.11	.42	1.53	.43 +	1.54
Family SES						
Parent education	-.06	.94	-.22 *	.81	-.16 *	.86
SES quartile	-.24 **	.79	-.19 +	.83	.21 **	1.23
Welfare receipt	.54 *	1.71	.28	1.33	-.02	.98
Language minority	-.35	.71	-.19	.83	.33	1.40
Parent Involvement						
Low	-.27 +	.76	-.04	.96	.40 **	1.49
High	-.08	.93	.09	1.10	-.05	.96
Missing	-.10	.90	.44 *	1.56	-.01	.99
Family Structure						
Mother only	.60 **	1.82	-.04	.96	.33 *	1.39
Mother-stepfather	.75 **	2.11	.67 **	1.95	.36 *	1.44
Father only	1.35 **	3.85	.38	1.46	.54 *	1.71
Father-stepmother	.72 *	2.06	-.89	.41	.38	1.47
Neither parent	1.11 **	3.03	-.14	.87	.17	1.19
Ethnic Background						
Black	-.46 *	.63	.56 **	1.74	-.08	.92
Hispanic	.00	1.00	.40	1.49	-.67 **	.51
Asian	-1.10 *	.33	.65	1.91	-.66 +	.52
Type of School						
Private religious	-.91 *	.40	-.54	.58	.41 *	1.50
Other private	1.73 **	5.66	-.09	.91	.68 +	1.98
High minority enrollment	.68 **	1.97	.44 *	1.56	.24	1.27
Medium minority enrollment	.37 *	1.45	.42 *	1.52	-.10	.90
Intercept	-2.23 **		-2.23 **		-2.14 **	
Multiple R (Somer's D)	.60 **		.52 **		.30 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 8. Smoking, Drug Use, and Binge Drinking Predicted from 10th Grade Participation in Extracurricular Activities and Other Student, Family, and School Characteristics, Males (Multiple Logistic Regression)

Predictor Variables	Ever Smoker		Used Drugs		Binge Drinking	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
In no activities	.50 **	1.64	.26 **	1.30	.06	1.06
In two activities	-.01	.99	-.18 +	.84	-.04	.96
In three or more activities	-.00	1.00	-.10	.90	-.08	.93
Student's Grades and School Program						
Grade quartile (8th grade)	-.25 **	.78	-.33 **	.72	-.29 **	.75
General program	.36 **	1.43	.09	1.10	.12	1.12
Vocational/technical program	.51 **	1.67	.18	1.20	.16	1.17
Other program	.41 **	1.51	-.33 +	.72	.06	1.06
Family SES						
Parent education	-.07	.93	-.05	.95	-.17 **	.85
SES quartile	.08	1.09	.20 **	1.23	.11 *	1.11
Welfare receipt	.51 *	1.67	.66 **	1.94	.17	1.18
Language minority	-.40 **	.67	-.48 **	.62	-.50 **	.61
Parent Involvement						
Low	.24 *	1.27	.14	1.15	-.07	.94
High	-.06	.94	-.10	.90	.03	1.03
Missing	-.10	.90	.13	1.14	.20 *	1.22
Family Structure						
Mother only	.10	1.11	.48 **	1.61	.03	1.03
Mother-stepfather	.22 +	1.24	.34 **	1.40	.21 +	1.23
Father only	.02	1.02	.44 *	1.55	.39 *	1.48
Father-stepmother	.55 **	1.73	.19	1.20	.28	1.33
Neither parent	.35	1.41	.46 +	1.58	.09	1.10
Ethnic Background						
Black	-1.23 **	.29	-.63 **	.53	-.79 **	.45
Hispanic	.01	1.01	.41 *	1.50	.27 +	1.31
Asian	-.54 *	.58	-.22	.80	-.61 **	.54
Type of School						
Private religious	.39 **	1.48	.24 +	1.27	.10	1.10
Other private	.60 *	1.82	.69 **	1.99	.31	1.37
High minority enrollment	-.18 +	.83	.02	1.02	-.07	.93
Medium minority enrollment	.04	1.04	.12	1.13	-.05	.95
Intercept	-.66 **		-.66 **		.87 **	
Multiple R (Somer's D)	.31 **		.28 **		.25 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 9. School Dropout, Teen Parenthood, and Student Arrest Predicted from 10th Grade Participation in Extracurricular Activities and Other Student, Family, and School Characteristics, Females (Multiple Logistic Regression)

Predictor Variables	School Dropout		Teen Parent		Ever Arrested	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
In no activities	.55 **	1.73	.17	1.18	.47 +	1.61
In two activities	-.12	.89	-.27 +	.76	-.07	.93
In three or more activities	-.35 *	.71	-.33 *	.72	.10	1.11
Student's Grades and School Program						
Grade quartile (8th grade)	-.37 **	.69	-.37 **	.69	-.39 **	.68
General program	.91 **	2.49	.72 **	2.06	.39	1.48
Vocational/technical program	1.07 **	2.92	.82 **	2.27	-.24	.79
Other program	1.01 **	2.76	.50 *	1.64	.46	1.59
Family SES						
Parent education	-.28 **	.76	-.26 **	.77	-.23	.80
SES quartile	-.21 **	.81	-.17 *	.84	.22	1.24
Welfare receipt	.53 *	1.71	.42 +	1.53	-.08	.92
Language minority	.02	1.02	-.10	.90	-.77	.46
Parent Involvement						
Low	-.34 *	.71	-.03	.97	-.10	.90
High	-.20	.82	-.24	.79	-.38	.68
Missing	-.01	.99	.13	1.14	-.12	.89
Family Structure						
Mother only	.31 *	1.36	.37 **	1.45	-.39	.68
Mother-stepfather	.70 **	2.02	.98 **	2.68	.68 **	1.98
Father only	1.05 **	2.85	1.13 **	3.09	1.37 **	3.94
Father-stepmother	.71 *	2.04	-.47	.63	-.62	.54
Neither parent	.78 **	2.18	1.09 **	2.96	-.55	.58
Ethnic Background						
Black	-.37 *	.69	.79 **	2.21	-.36	.70
Hispanic	-.17	.84	.10	1.11	.19	1.21
Asian	-.24	.79	-.13	.88	-.17	.84
Type of School						
Private religious	-.48	.62	-.82 *	.44	-.61	.54
Other private	-.66	.52	-.62	.54	-.99	.37
High minority enrollment	.39 **	1.48	.09	1.09	-.19	.83
Medium minority enrollment	.26	1.29	.33 *	1.39	.10	1.11
Intercept	-1.17 **		-1.14 **		-2.86 **	
Multiple R (Somer's D)	.61 **		.59 **		.35 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 10. Smoking, Drug Use, and Binge Drinking Predicted from 10th Grade Participation in Extracurricular Activities and Other Student, Family, and School Characteristics, Females (Multiple Logistic Regression)

Predictor Variables	Ever Smoker		Used Drugs		Binge Drinking	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
In no activities	.47 **	1.61	.48 **	1.62	.24 **	1.28
In two activities	-.06	.94	-.15	.86	.08	1.09
In three or more activities	-.09	.91	-.15	.86	.17 +	1.18
Student's Grades and School Program						
Grade quartile (8th grade)	-.35 **	.70	-.23 **	.79	-.24 **	.79
General program	.21 **	1.23	.02	1.02	.37 **	1.44
Vocational/technical program	.18	1.20	-.19	.83	.38 **	1.46
Other program	.54 **	1.71	.32 +	1.38	.54 **	1.72
Family SES						
Parent education	-.07	.93	.03	1.03	-.02	.98
SES quartile	.09 +	1.10	.11 +	1.11	.08 +	1.08
Welfare receipt	-.06	.94	.03	1.03	-.22	.81
Language minority	-.66 **	.52	-.33 +	.72	-.22	.80
Parent Involvement						
Low	-.12	.89	-.09	.91	.06	1.06
High	-.58 **	.56	-.53 **	.59	-.27 **	.76
Missing	-.48 **	.62	-.67 **	.51	-.20 +	.82
Family Structure						
Mother only	.26 *	1.29	.50 **	1.64	.19 *	1.21
Mother-stepfather	.32 **	1.38	.45 **	1.57	-.02	.98
Father only	.92 **	2.50	1.26 **	3.53	.59 *	1.80
Father-stepmother	.53 *	1.70	.78 **	2.19	-.22	.80
Neither parent	.66 **	1.93	.34	1.40	.01	1.01
Ethnic Background						
Black	-1.76 **	.17	-.97 **	.38	-.63 **	.53
Hispanic	-.16	.86	-.03	.97	.17	1.19
Asian	-.47 *	.63	-.68 **	.51	-.63 **	.53
Type of School						
Private religious	-.06	.95	-.31 *	.73	.20 +	1.22
Other private	.36	1.44	-.21	.81	.33	1.39
High minority enrollment	-.34 **	.71	-.14	.87	-.23 *	.79
Medium minority enrollment	-.01	.99	.26 *	1.30	.05	1.05
Intercept	.04		-.87 **		-.38 *	
Multiple R (Somer's D)	.40 **		.34 **		.27 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 11. School Dropout, Teen Parenthood, and Student Arrest Predicted from 10th Grade Participation in Varsity Sports and Other Student, Family, and School Characteristics, Males (Multiple Logistic Regression)

	School Dropout		Teen Parent		Ever Arrested	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Predictor Variables						
Student Participation						
In varsity or JV sports	.86 **	.42	.32 *	1.38	.14	1.15
Student's Grades and School Program						
Grade quartile (8th grade)	-.47 **	.62	-.32 **	.72	-.36 **	.70
General program	1.09 **	2.97	.55 **	1.74	.36 **	1.43
Vocational/technical program	1.31 **	3.69	1.09 **	2.99	.61 **	1.84
Other program	.92 **	2.52	.81 **	2.24	.38 +	1.47
Family SES						
Parent education	-.09	.92	-.23 *	.79	-.23 **	.80
SES quartile	-.24 **	.79	-.10	.91	.21 **	1.23
Welfare receipt	.38	1.47	.26	1.30	.02	1.02
Language minority	-.71 **	.49	-.17	.85	.31	1.36
Parent Involvement						
Low	-.25 +	.78	.12	1.13	.43 **	1.53
High	-.12	.89	.03	1.03	-.26 *	.77
Missing	.09	1.09	.51 **	1.67	-.10	.90
Family Structure						
Mother only	.49 **	1.63	.03	1.03	.25 +	1.28
Mother-stepfather	.68 **	1.98	.52 **	1.69	.36 *	1.44
Father only	1.30 **	3.66	.20	1.23	.36	1.43
Father-stepmother	.83 **	2.29	-.51	.60	.32	1.37
Neither parent	1.01 **	2.74	.14	1.16	.20	1.22
Ethnic Background						
Black	-.35 *	.70	.64 **	1.90	-.29 +	.75
Hispanic	.48 *	1.62	.27	1.32	-.67 **	.51
Asian	-.50	.61	.60	1.82	-.49	.61
Type of School						
Private religious	-.80 *	.45	-.73 +	.48	.23	1.26
Other private	1.70 **	5.46	-.21	.81	.54	1.72
High minority enrollment	.67 **	1.95	.45 *	1.56	.23 +	1.26
Medium minority enrollment	.44 **	1.55	.33 +	1.39	.04	1.04
Intercept	-1.41 **		-2.54 **		-1.71 **	
Multiple R (Somer's D)	.61 **		.50 **		.29 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 12. Smoking, Drug Use, and Binge Drinking Predicted from 10th Grade Participation in Varsity Sports and Other Student, Family, and School Characteristics, Males (Multiple Logistic Regression)

	Ever Smoker		Used Drugs		Binge Drinking	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Predictor Variables						
Student Participation						
In varsity or JV sports	-.44 **	.65	-.09	.92	.42 **	1.52
Student's Grades and School Program						
Grade quartile (8th grade)	-.26 **	.77	-.34 **	.71	-.31 **	.73
General program	.33 **	1.39	.05	1.05	.14 *	1.15
Vocational/technical program	.50 **	1.65	.07	1.07	.20 +	1.22
Other program	.32 *	1.38	-.37 *	.69	.18	1.20
Family SES						
Parent education	-.09 +	.92	-.06	.94	-.18 **	.83
SES quartile	.10 *	1.11	.20 **	1.22	.10 *	1.11
Welfare receipt	.55 **	1.74	.66 **	1.93	.13	1.14
Language minority	-.35 *	.71	-.49 **	.61	-.50 **	.61
Parent Involvement						
Low	.31 **	1.36	.17 +	1.19	.04	1.04
High	-.02	.98	-.12	.89	-.03	.97
Missing	-.11	.90	.13	1.14	.27 **	1.31
Family Structure						
Mother only	.09	1.09	.39 **	1.47	.02	1.02
Mother-stepfather	.27 **	1.31	.35 **	1.42	.19 +	1.21
Father only	-.04	.96	.48 *	1.61	.38 *	1.46
Father-stepmother	.42 *	1.52	.12	1.12	.35 +	1.43
Neither parent	.32	1.38	.48 *	1.61	.08	1.08
Ethnic Background						
Black	-1.32 **	.27	-.67 **	.51	-.88 **	.42
Hispanic	-.05	.95	.42 **	1.52	.18	1.20
Asian	-.58 **	.56	-.23	.80	-.63 **	.53
Type of School						
Private religious	.46 **	1.58	.19	1.21	.11	1.11
Other private	.68 **	1.98	.71 **	2.04	.37	1.44
High minority enrollment	-.17 +	.84	.02	1.02	.02	1.02
Medium minority enrollment	.02	1.02	.13	1.14	-.04	.97
Intercept	-.30 +		-.46 **		.75 **	
Multiple R (Somer's D)	.32 **		.26 **		.27 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 13. School Dropout, Teen Parenthood, and Student Arrest Predicted from 10th Grade Participation in Varsity Sports and Other Student, Family, and School Characteristics, Females (Multiple Logistic Regression)

	School Dropout		Teen Parent		Ever Arrested	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Predictor Variables						
Student Participation						
In varsity or JV sports	-.51 **	.60	-.40 **	.67	.34 +	1.40
Student's Grades and School Program						
Grade quartile (8th grade)	-.42 **	.66	-.38 **	.69	-.48 **	.62
General program	.95 **	2.59	.78 **	2.17	.48 *	1.62
Vocational/technical program	1.08 **	2.94	.78 **	2.18	-.20	.82
Other program	1.07 **	2.91	.63 **	1.87	.53	1.69
Family SES						
Parent education	-.21 **	.81	-.25 **	.78	-.04	.96
SES quartile	-.28 **	.76	-.17 *	.84	-.01	.99
Welfare receipt	.43 +	1.53	.40 +	1.50	-.31	.74
Language minority	-.03	.97	-.09	.92	-.69	.50
Parent Involvement						
Low	-.34 *	.71	-.02	.98	-.09	.92
High	-.30 *	.74	-.22	.81	-.54 *	.58
Missing	-.00	1.00	.14	1.15	-.34	.71
Family Structure						
Mother only	.26 +	1.30	.33 *	1.39	-.39	.68
Mother-stepfather	.71 **	2.04	.97 **	2.64	.68 **	1.97
Father only	1.00 **	2.73	1.10 **	3.00	1.44 **	4.20
Father-stepmother	.69 *	1.99	-.46	.63	-.26	.77
Neither parent	.85 **	2.35	1.01 **	2.76	-.58	.56
Ethnic Background						
Black	-.45 *	.64	.80 **	2.22	-.36	.70
Hispanic	-.08	.92	.13	1.14	.10	1.10
Asian	-.09	.92	-.13	.88	.12	1.13
Type of School						
Private religious	-.49 +	.61	-.83 **	.44	-.57	.57
Other private	-.71	49	-.66	.52	-1.12	.33
High minority enrollment	.40 **	1.49	.09	1.09	-.18	.84
Medium minority enrollment	.21	1.23	.26 +	1.30	.03	1.03
Intercept	-.88 **	.42	-1.15 **		-2.58 **	
Multiple R (Somer's D)	.61 **		.59 **		.35 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 14. Smoking, Drug Use, and Binge Drinking Predicted from 10th Grade Participation in Varsity Sports and Other Student, Family, and School Characteristics, Females (Multiple Logistic Regression)

	Ever Smoker		Used Drugs		Binge Drinking	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Predictor Variables						
Student Participation						
In varsity or JV sports	-.14 *	.87	.05	1.05	.24 **	1.27
Student's Grades and School Program						
Grade quartile (8th grade)	-.39 **	.68	-.27 **	.76	-.25 **	.78
General program	.21 **	1.24	.09	1.10	.39 **	1.47
Vocational/technical program	.14	1.16	-.18	.84	.36 **	1.43
Other program	.51 **	1.66	.35 *	1.42	.56 **	1.75
Family SES						
Parent education	-.04	.96	.04	1.04	-.03	.98
SES quartile	.07	1.07	.09 +	1.10	.06	1.06
Welfare receipt	-.15	.86	-.01	.99	-.20	.82
Language minority	-.61 **	.54	-.23	.80	-.21	.81
Parent Involvement						
Low	-.05	.96	.01	1.01	.12	1.13
High	-.63 **	.54	-.60 **	.55	-.28 **	.76
Missing	-.55 **	.58	-.72 **	.49	-.23 *	.80
Family Structure						
Mother only	.26 **	1.30	.54 **	1.71	.19 *	1.21
Mother-stepfather	.35 **	1.43	.48 **	1.62	-.01	.99
Father only	.92 **	2.52	1.38 **	3.96	.64 **	1.89
Father-stepmother	.49 *	1.63	.79 **	2.19	-.22	.80
Neither parent	.72 **	2.06	.39	1.48	.05	1.06
Ethnic Background						
Black	-1.66 **	.19	-.95 **	.39	-.65 **	.52
Hispanic	-.14	.87	-.05	.95	.19	1.21
Asian	-.48 *	.62	-.69 **	.50	-.65 **	.52
Type of School						
Private religious	.06	1.07	-.18	.84	.24 *	1.27
Other private	.37	1.45	-.14	.87	.38	1.46
High minority enrollment	-.33 **	.72	-.11	.90	-.25 **	.78
Medium minority enrollment	-.04	.96	.27 **	1.31	.03	1.03
Intercept	.23		-.84 **		-.29 +	
Multiple R (Somer's D)	.39 **		.32 **		.28 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 15. School Dropout, Teen Parenthood, and Student Arrest Predicted from 10th Grade Participation in Band, Orchestra, Chorus, School Play or Musical, and Other Student, Family, and School Characteristics, Males (Multiple Logistic Regression)

Predictor Variables	School Dropout		Teen Parent		Ever Arrested	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
In band, orchestra, chorus, school play or musical	-.33 *	.72	.09	1.10	-.26 *	.77
Student's Grades and School Program						
Grade quartile (8th grade)	-.46 **	.63	-.30 **	.74	-.34 **	.71
General program	1.20 **	3.32	.63 **	1.88	.34 **	1.40
Vocational/technical program	1.49 **	4.45	.97 **	2.64	.52 **	1.69
Other program	1.26 **	3.52	.97 **	2.63	.44 *	1.55
Family SES						
Parent education	-.10	.90	-.16 +	.85	-.18 **	.84
SES quartile	-.21 **	.81	-.19 *	.83	.20 **	1.22
Welfare receipt	.41	1.51	.29	1.34	.02	1.02
Language minority	-.34	.71	-.20	.82	.25	1.29
Parent Involvement						
Low	-.15	.86	.01	1.01	.38 **	1.46
High	-.24 +	.79	.15	1.16	-.18	.83
Missing	-.09	.92	.64 **	1.91	-.02	.99
Family Structure						
Mother only	.56 **	1.75	-.05	.95	.26 +	1.30
Mother-stepfather	.67 **	1.96	.53 **	1.70	.32 *	1.38
Father only	1.26 **	3.52	.43	1.53	.35	1.42
Father-stepmother	.80 **	2.22	-.79	.45	.38	1.46
Neither parent	.93 **	2.53	-.05	.95	.21	1.24
Ethnic Background						
Black	-.48 **	.62	.58 **	1.78	-.14	.87
Hispanic	.02	1.02	.16	1.17	-.51 *	.60
Asian	-1.09 *	.34	.56	1.75	-.58 +	.56
Type of School						
Private religious	-.89 *	.41	-.76 +	.47	.20	1.22
Other private	1.57 **	4.81	-.19	.82	.52	1.68
High minority enrollment	.76 **	2.14	.59 **	1.80	.20	1.22
Medium minority enrollment	.44 **	1.56	.48 *	1.61	.08	1.08
Intercept	-1.87 **		-2.51 **		-1.78 **	
Multiple R (Somer's D)	.58 **		.50 **		.29 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 16. Smoking, Drug Use, and Binge Drinking Predicted from 10th Grade Participation in Band, Orchestra, Chorus, School Play or Musical, and Other Student, Family, an l School Characteristics, Males (Multiple Logistic Regression)

Predictor Variables	Ever Smoker		Used Drugs		Binge Drinking	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
In Band, Orchestra, Chorus, School Play or Musical	-.25 **	.78	-.33 **	.72	-.37 **	.69
Student's Grades and School Program						
Grade quartile (8th grade)	-.26 **	.77	- 34 **	.72	-.27 **	.76
General program	.36 **	1.43	.08	1.09	.13 +	1.14
Vocational/technical program	.52 **	1.67	.09	1.09	.14	1.16
Other program	.43 **	1.54	-.21	.81	.24 +	1.28
Family SES						
Parent education	-.09 +	.92	-.06	.95	-.19 **	.83
SES quartile	.09 +	1.09	.20 **	1.22	.11 *	1.11
Welfare receipt	.54 **	1.71	.66 **	1.94	.16	1.18
Language minority	-.37 **	.69	-.43 **	.65	-.48 **	.62
Parent Involvement						
Low	.33 **	1.39	.18 +	1.20	-.05	.95
High	-.05	95	-.09	.92	.09	1.10
Missing	-.09	92	.14	1.16	.33 **	1.39
Family Structure						
Mother only	.11	1.11	.38 **	1.47	.01	1.01
Mother-stepfather	.27 **	1.31	.35 **	1.42	.20 *	1.22
Father only	-.06	.94	46 *	1.59	.34 +	1.40
Father-stepmother	.46 *	1.58	.22	1.25	.40 *	1.49
Neither parent	.38 +	1 47	.53 *	1.71	.12	1.13
Ethnic Background						
Black	-1.28 **	.28	-.63 **	53	-.80 **	.45
Hispanic	-.03	.97	.37 *	1.45	.19	1.21
Asian	-.57 **	.57	-.32	.72	-.64 **	.53
Type of School						
Private religious	.42 **	1.53	.16	1.18	.11	1.12
Other private	.66 **	1.93	.72 **	2.05	.41 +	1.50
High minority enrollment	- 14	.87	.00	1 00	-.07	.93
Medium minority enrollment	.01	1.01	.13	1.14	- 05	.95
Intercept	-.46 **		-.53 **		.95 **	
Multiple R (Somer's D)	30 **		27 **		.27 **	

** p = < .01; * p = < .05, + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992

Table 17. School Dropout, Teen Parenthood, and Student Arrest Predicted from 10th Grade Participation in Band, Orchestra, Chorus, School Play or Musical, and Other Student, Family, and School Characteristics, Females (Multiple Logistic Regression)

Predictor Variables	School Dropout		Teen Parent		Ever Arrested	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
In band, orchestra, chorus, school play or musical	-.41 **	.66	-.25 *	.78	-.46 *	.63
Student's Grades and School Program						
Grade quartile (8th grade)	-.41 **	.66	-.38 **	.68	-.41 **	.66
General program	.92 **	2.52	.75 **	2.12	.44 +	1.55
Vocational/technical program	1.11 **	3.04	.74 **	2.10	-.22	.80
Other program	1.08 **	2.94	.65 **	1.91	.50	1.66
Family SES						
Parent education	-.24 **	.79	-.24 **	.79	-.16	.85
SES quartile	-.26 **	.77	-.20 **	.82	.15	1.16
Welfare receipt	.35	1.41	.36	1.44	.45	1.56
Language minority	-.10	.91	-.10	.90	-.72	.49
Parent Involvement						
Low	-.29 *	.75	.01	1.01	-.12	.88
High	-.24	.79	-.24 +	.79	-.37	.69
Missing	.03	1.04	.15	1 16	-.24	.79
Family Structure						
Mother only	.28 *	1.32	.32 *	1.38	-.18	.84
Mother-stepfather	.77 **	2.15	.99 **	2.70	.75 **	2.12
Father only	1.06 **	2.90	1.14 **	3.12	1.40 **	4.06
Father-stepmother	.77 *	2.15	- 44	.64	-.06	.94
Neither parent	.86 **	2.36	1.01 **	2.76	-.54	.58
Ethnic Background						
Black	-.42 *	.66	.77 **	2.16	-.36	.70
Hispanic	-.09	.91	.09	1.10	.13	1.14
Asian	-.14	.87	-.22	.80	44	1.55
Type of School						
Private religious	-.52 +	.60	-.84 **	.43	-.60	.55
Other private	-.79	.45	-.72	.49	-1.08	.34
High minority enrollment	.44 **	1.55	.14	1.15	-.15	.86
Medium minority enrollment	.30 *	1.35	.29 *	1 33	.02	1.02
Intercept	-.94 **		-1.17 **		-2.67 **	
Multiple R (Somer's D)	.60 **		.58 **		36 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.

Table 18. Smoking, Drug Use, and Binge Drinking Predicted from 10th Grade Participation in Band, Orchestra, Chorus, School Play or Musical, and Other Student, Family, and School Characteristics, Females (Multiple Logistic Regression)

Predictor Variables	Ever Smoker		Used Drugs		Binge Drinking	
	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio	Regression Coefficient	Odds Ratio
Student Participation						
In Band, Orchestra, Chorus, School Play or Musical	-.37 **	.69	-.42 **	.66	-.29 **	.75
Student's Grades and School Program						
Grade quartile (8th grade)	-.38 **	.68	-.27 **	.77	-.25 **	.78
General program	.23 **	1.26	.09	1.09	.36 **	1.43
Vocational/technical program	.16	1.17	-.22	.80	.32 **	1.38
Other program	.55 **	1.73	.35 *	1.42	.52 **	1.68
Family SES						
Parent education	-.04	.96	.05	1.06	-.01	.99
SES quartile	.06	1.06	.08	1.08	.05	1.05
Welfare receipt	-.19	.83	-.04	.96	-.31	.74
Language minority	-.62 **	.54	-.25	.78	-.18	.84
Parent Involvement						
Low	-.06	.94	-.03	.97	.06	1.06
High	-.57 **	.56	-.53 **	.59	-.22 **	.80
Missing	-.49 **	.62	-.68 **	.51	-.22 *	.80
Family Structure						
Mother only	.22 *	1.24	.51 **	1.66	.14	1.15
Mother-stepfather	.31 **	1.37	.44 **	1.56	-.05	.95
Father only	.88 **	2.40	1.31 **	3.72	.53 *	1.70
Father-stepmother	.48 *	1.62	.77 **	2.16	-.25	.78
Neither parent	.71 **	2.03	.35	1.42	.04	1.04
Ethnic Background						
Black	-1.69 **	.19	-.94 **	.39	-.64 **	.53
Hispanic	-.15	.86	-.03	.97	.19	1.21
Asian	-.56 *	.57	-.72 **	.49	-.67 **	.51
Type of School						
Private religious	-.03	.98	-.21	.81	.19 +	1.21
Other private	.29	1.34	-.18	.84	.37	1.45
High minority enrollment	-.30 **	.74	-.11	.90	-.27 **	.76
Medium minority enrollment	.01	1.01	.28 **	1.32	.01	1.01
Intercept	.26		-.72 **		-.12	
Multiple R (Somer's D)	.40 **		.33 **		.29 **	

** p = < .01; * p = < .05; + p = < .10

Source: N. Zill, C.W. Nord, & L.S. Loomis. Analysis of data from the National Educational Longitudinal Study of 1988, First and Second Followups, 1990 and 1992.