Leisure Time Activities in Middle Childhood

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Abstract

This paper focuses on children's time in leisure activities. We use time diary data from the 1997 Child Development Supplement (CDS) of the Panel Study of Income Dynamics (PSID) to examine the amount of weekly time that children 6-12 years of age spend in various leisure activities—playing, studying, computer usage, watching television, art, hobbies, sports, reading, time outdoors, church activities, housework , and shopping. Average time per day and per week engaged in each activity is presented by gender and age of the child. Finally, the average weekly time spent in these activities is linked to various measures of the child's cognitive and socio-emotional development. The results indicate that three types of activities—reading, participating in sports, and church activities—are consistently and positively linked to children's achievement as measured by standardized tests.

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INTRODUCTION

We often assume that how children spend their time affects their cognitive and social development. We complain that they spend too little time studying, reading, or helping around the house, and too much time watching television or hanging out with friends. A recent CDC health campaign ("VERB: It's what you do") promotes physical activity. However, in spite of the use of language in which time is the measure of children's activities and behavior, rarely is time studied. In this paper we take advantage of national data collected in 1997 to measure children's involvement in a variety of leisure time activities and whether variations in time use are associated with children's achievement and behavior.

BACKGROUND

The time that children spend in various activities can measure productive engagement and can also be indicative of their potential contributions to society as a whole. The benefits of certain activities, such as time spent in school and studying are obvious. In economic terms, this time can be considered to reflect investments in "human capital" because the knowledge and learning skills gained can ultimately be used by the individual to earn money but also to contribute to the overall society.

The benefits of nonacademic uses of children's time, particularly leisure activities, are less obvious and the subject of this paper. We use time diary data from the 1997 Child Development Supplement (CDS) of the Panel Study of Income Dynamics (PSID) to examine the amount of weekly time that children 6-12 years of age spend in various leisure activities—playing, studying, computer usage, watching television, art, hobbies, sports, reading, time outdoors, church activities, housework, and shopping.

Differences in leisure time among societies

There is wide variation around the world in the amount of leisure time available to children. In nonindustrial societies, the amount of leisure time children have is primarily dictated by necessity, such as climate and economic conditions (Larson & Verma, 1999). Even among postindustrial societies, there are differences in the leisure time available to children, but these are primarily attributable to the priorities and culture of the particular society. For example, children in North America have much more leisure time than children in East Asia due to differences between countries in priorities for schoolwork versus other areas of personal and social development. East Asian children spend about 2-3 hours a week more in schoolwork than do North American children and have about the same amount less in leisure time (Larson & Verma, 1999). European children are intermediate between North American and East Asian children. Of this leisure time, however, North American and European children spend more time in structured activities, particularly sports, than East Asian children (Larson & Verma, 1999).

Positive benefits of leisure time

The benefits of leisure time are considered to depend on its use, with structured activities generally considered to be more beneficial than unstructured, and active more beneficial than passive. There has been extensive research on the potential effects of watching television (see below), but less on other, less frequent uses of leisure time. It is plausible that many uses of leisure time, both structured and unstructured, have the potential for positive outcomes for children. First, these activities can function as learning environments for mastering specific skills and techniques (Larson & Verma, 1999). A child participating in sports is

learning the particular rules and becoming proficient at the skills required of the game chosen. A child participating in various arts and hobbies learns the specific techniques involved and can become more familiar with the culture surrounding the activity.

The other valuable aspect of these activities is that they promote positive relationships with adults and with peers (Larson, 1994). An athletic team is coached by an adult, made up of peers, and supported by parents. Adults give lessons; outdoor activities, hobbies, and arts activities often involve adults and peers. Such activities provide opportunities to work with adults other than parents in a variety of settings and roles. They also provide the opportunity to engage with peers in activities with common objectives and goals. Thus, many leisure activities can provide opportunities for learning and for positive behavioral and health outcomes depending on quality of the experience and the particular characteristics of the child.

Computer, television, and media use. In the past decade the use of electronic media has skyrocketed. The amount of time watching television is the largest of this category, averaging one-quarter of children's free time, some 13-14 hours per week, 2 hours per day (Hofferth & Sandberg, 2001b). However, the use of other media has risen. Today every school has computers, but so do most homes. Even in 1997, when our diary data were collected, the Internet had not penetrated into middle-class homes the way it has today. According to a 1998-99 study, 69% of American homes have a computer and 45% have access to the Internet (Roberts, Foehr, Rideout & Brodie, 1999). The same study estimated that children 8-13 spend 6.75 hours each day interacting with media, from television to games to CDs to computers (Roberts, et al., 1999). While this is probably an overestimate of time, it points to a high degree of media involvement. Here we examine computer and television viewing separately. In this study watching videos referred to watching movies on video and not playing video games.

Future research also needs to include video games, which are heavily used by boys. Although television viewing may be individual in nature, parents often work on the computer with their children, and children often play video games together. Television viewing has been studied extensively; the nature of the programs viewed have been shown to be more important than total time (Anderson, Huston, Schmitt & Linebarger, 2001). However, television may reduce achievement by displacing more positive activities.

Sports and outdoor activities. Between 1981 and 1997 there was a 35% increase in the amount of time 9-12 year olds spent in sports activities (Hofferth & Sandberg, 2001b). Consistent with the increased emphasis on team activities, both boys and girls increased their participation between 1981 and 1997. Although the passage of Title IX in the 1970s increased the opportunities for girls, boys are more likely to participate in sports and spend about 50% more time at it, a ratio of about 3 to 2 in terms of time (Hofferth & Sandberg, 2001b).

Previous research has shown a negative association between sports participation and delinquency; however, this appears to be due to the fact that delinquency reduces eligibility for sports participation rather than the other way around (Larson, 1994). In fact, Eccles found evidence that participation in team sports in high school is associated with increased alcohol use (Eccles & Barber, 1999).

Outdoor activities such as camping and walking comprise less than ½ hour per week. Time spent actually declined for the 9-12 year age group (Hofferth & Sandberg, 2001b).

Quiet activities – reading and studying The time children spend not only in school but also in school-related activities at home such as doing homework may boost their human capital and improve their cognitive achievement. Reading for pleasure is linked to higher verbal achievement (Hofferth & Sandberg, 2001b). One would expect that studying would also be

linked to development; however, causality may go the other direction such that children who are having problems in school may spend more time on homework.

Research shows that the weekly time US children spent studying outside the school setting increased between 1981 and 1997 (Hofferth & Sandberg, 2001b). Studying, of course, varies by age of child. In 1981 3-5-year-olds were said to study about 25 minutes. In contrast, 6-8-year-olds spent 52 minutes studying and 9-12-year-olds spent 3 hours 22 minutes studying. By 1997 the time all children spent studying had risen, more for the younger than for the older children. As children spent more time in school and day care at younger ages, the time 3-5 year olds spent in homework rose to 36 minutes a week (up 44%) in 1997, to 2 hours and 8 minutes for 6-8 year olds (up 144%) and to 3 hours 41 minutes (up 9%) for 9-12 year olds.

Adolescents spend more time in homework than do younger children. Leone and Richards found children in grades 5-9 spending about 15 hours per week in class actually doing academic work and another 6.5 hours per week studying (Leone & Richards, 1989). By the time they get to age 16 or 17, teenagers in the US report spending some 10 hours per week studying (Fuligni & Stevenson, 1995).

Hobbies and Art Activities. It is in activities developing specific skills that one would anticipate participation to have its greatest long-term benefits. Besides learning a skill, children learn about a specific craft or hobby that may sustain their interest until adulthood and beyond. Although overall time spent in them is quite small, the amount of time spent in hobbies and art activities more than doubled between 1981 and 1997 for school-age children (Hofferth & Sandberg, 2001b). Girls spend more time than boys in art activities, which includes dance and music lessons, gender-typed activities. Boys and girls spend about the same low amount of time

in hobbies. Research shows that hobby participation in 9-10th grade is associated with lower delinquency in the 11th-12th grades (Larson, 1994).

Household work and shopping. Household work would appear to combine skill-building with needed family work. In preindustrial societies, children spend considerable time in the work of the family, estimated at 6.7 hours for 10-12 year old girls in rural Bangladesh (Cain, 1980). Such children spend little time in school. While in preindustrial societies household work is not optional, in industrial societies household work time is considerably more variable and discretionary. Parents tend not to train children in gender-linked household tasks as much as in the rural past. In Western countries, children do not spend much time in helping their parents with household chores. In 1997 two out of three 6-8 year olds and three-quarters of 9-12 years olds spent some time doing chores around the house, 6-8 year olds spent about 2 hours per week, and 9-12 year olds spent 3.75 hours per week (about 30 minutes per day). The trends in household chores for children are similar to those of parents – a general decline in housework for women has been shown in numerous studies (Gershuny & Robinson, 1988). On the other side, more goods and services are purchased outside the home instead of being produced at home. The time children spent accompanying their parents shopping to purchase goods and services increased significantly over the same period. Weekly shopping time rose from 2 hours to almost 3 hours (Hofferth & Sandberg, 2001b).

Play. In fact, play and school are considered the "work" of children. Since there is so little discretion over time in school, which varies by community, we do not focus on it. Instead, we focus some attention on "play." Play as a category of time encompasses most of children's activities that are not formally organized, such as board games and playing around the house.

This informal play comprises about one-quarter of children's free time. There was little change in time devoted to play between 1981 and 1997 (Hofferth & Sandberg, 2001b).

Church attendance. Finally, the last category of activities that we discuss is attendance at religious services. Research has found evidence that family church attendance is associated with positive behavior such as delayed entry into sexual activity (Udry & Billy, 1987). However, church attendance has been declining in the US. Between 1981 and 1997 time spent in church declined 22 percent for 6-8 year olds and 44 percent for 9-12 year olds (Hofferth & Sandberg, 2001b).

DATA AND METHODS

The 1997 Child Development Supplement

Data for this study on children's time use come from 24 hour time diaries used in the *1997 Child Development Supplement(CDS) to the Panel Study of Income Dynamics (PSID),* collected by the University of Michigan (Hofferth, Davis-Kean, Davis & Finkelstein, 1999). The PSID is a 30-year longitudinal survey of a representative sample of U.S. men, women, children, and the families in which they reside. In 1997, the PSID added a refresher sample of immigrants to the United States (since 1968) so that the sample represents the U.S. population in 1997. When weights are used, the PSID has been found to be representative of U.S. individuals and their families (Fitzgerald, Gottschalk & Moffitt, 1998a). With funding from the National Institute of Child Health and Human Development (NICHD), data were collected in 1997 on up to two randomly selected 0-12-year-old children of PSID respondents both from the primary caregivers and from the children themselves. The CDS survey period began in March 1997 and, with a break from mid-June through August, ended on December 6, 1997. Child interviews took

place only during the school year. Interviews were completed with 2,380 households containing 3,563 children. The response rate was 90% for those families regularly interviewed in the core PSID and 84% for those contacted the first time this year for the immigrant refresher to the sample, yielding a combined response rate for both groups of 88%. Post-stratification weights based upon the 1997 Current Population Survey are used to make the data nationally representative. The individual level child file used in this analysis is weighted by the product of the core PSID family weight, a post-stratification factor (by race and education of household head) based on comparison to the 1997 Current Population Survey, and a sub-selection weight that adjusts for the probability that a child in a given household was sampled and also for non-response of sampled children.

Time Diaries in the CDS

The Child Development Supplement collected a complete time diary for one weekday and one weekend day for each child age 0-12 in the family. The time diary, which was interviewer-administered to parent and child, asked several questions about the child's flow of activities over a 24-hour period beginning at midnight of the designated day. These questions ask the primary activity that was going on at that time, when it began and ended, and whether any other activity was taking place. In the coding process, children's activities are classified into ten general activity categories (paid work, household activities, child care, obtaining goods and services, personal needs and care, education, organizational activities, entertainment/social activities, sports, hobbies, active leisure, passive leisure), and further subdivided into 3-digit subcategories (such as parent reading to a child) that can be recombined in a variety of ways to characterize children's activities. Time spent traveling for the purposes of engaging in a specific

activity is included in that category. Time spent doing secondary activities is not included here. For example, time spent doing housework with the television on where housework was the primary activity is not counted as time "watching television." Thus, some activities that are often secondary may be underestimated. Given that many activities are occasional, we would not expect all children to engage in most of these on a daily basis. However, we want to abstract from this to describe the activities of American children in general. Since not all children do every activity each day, the total time children spend in an activity is a function of the proportion that engage in the activity and the time those participating spend in it. An estimate of weekly time is computed by multiplying weekday time (including those who do not participate and have zero time) by 5 and weekend day time by 2, after removing children who do not have both a weekend and weekday diary.

Time use data are by its nature quite sensitive to errors resulting in extreme or unusually large values for a particular activity; an error in reporting not only has ramifications for estimates of time spent in that particular activity, but in all other activities in the day as well. In addition, imputing daily values to a hypothetical week as we do here exacerbates these problems. The large sample size of the CDS diminishes the impact of these problems somewhat. Though care was taken during the data coding and cleaning stage to assure that all activities were temporally contiguous and that they summed to 24 hours for a given day, there are some outlying values in major activities that deserve special attention. Time use estimates were analyzed for extreme values, and where the authors deemed there to be a substantial probability of data error, that case was removed from the analyses completely. After selecting children 6-12 with two time diaries and excluding extreme values, the sample size was reduced to 1,461.

Robinson and Godbey (Robinson & Godbey, 1997) distinguish among contracted time (work, school), committed time (household and child care obligations), personal time (eating, sleeping, personal care), and free time (everything else). We generally use this model with some small changes because we are concerned with children, not adults. Since they have to be in school but don't have to work, we treat school rather than work as children's "contracted" time. Personal care time is time spent eating, sleeping, and caring for their personal needs. Few children have "committed" time; we include household work and homework along with free time. The leisure time reported in this paper is the time children have in a day when personal time (sleeping, eating, and personal care) and contracted time (time in school) is subtracted from the daily time. Free or discretionary time, therefore, consists of household work and shopping, studying, church attendance, youth groups, visiting, sports, outdoors activities, hobbies, art activities, which includes dance and music lessons, playing, TV watching, reading, household conversations, and other passive leisure (which includes going to movies and sports events as a spectator). In this paper we discuss all of these except youth groups, visiting, household conversations, day care, and other passive leisure. The latter includes attending events, listening to CDs, and doing nothing. These activities comprise only a small fraction of children's time.

The Validity and reliability of Time Diary data

Substantial methodological work has established the validity and reliability of data collected in time-diary form for adults (Juster & Stafford, 1985). For children, Hofferth (1999) compared maternal verbal reports of whether they read to their child every day with an estimate based upon two diary days, that is, whether the child was reported as read to either on a weekend or weekday in the time diary. The frequency from the stylized question was 47% compared with

42% from the time diaries. While the report from the stylized question is higher than the time diary estimate, the correlation between the two measures is .34. As an additional test, she regressed verbal achievement on the stylized question and separately on the time diary question, in each case controlling for demographic factors. The coefficients were not significantly different. This suggests a high degree validity of the time diary measures, compared with other already existing measures. The same was done for television viewing, and, again, the two different types of reports were quite similar. These are the only time measures asked in most surveys.

Measurement of the Demographic Control Variables

The demographic control variables used to analyze the impact of family factors on the time use of children 6-12 include characteristics of the individual child, the head of the household, the family, and the child's mother. Characteristics of the individual child include the age of child and their gender. The age, gender, race/ethnicity, and education of the head of household are also included. Characteristics of the family that are included in the multivariate analysis are the number of children in the family, a combined family structure/working status of the parent(s) variable and the ratio of family income to needs, equivalent to the ratio of income to the poverty line. Finally, the mother's score on the passage comprehension subtest of the Woodcock- Johnson Test of Basic Achievement is also used a control variable (see below for more details).

Child Assessments and Analysis Plan

A child's cognitive development was assessed by using four subtests of the Woodcock-Johnson Revised Test of Basic Achievement: letter-word identification, a test of the children's ability to respond to letters and words; passage comprehension, a test that measures vocabulary and comprehension skills; calculation, a test of mathematical calculation performance; and applied problems, a test of skill in analyzing and solving practical numerical problems (Woodcock & Mather, 1989). A child's socio-emotional development was measured by the Behavior Problems Index, a 30-item scale which attempts to quantify the existence and severity of child behavior problems (Peterson & Zill, 1986). From this scale, two subscales can be derived which measure two general types of behavior problems: internalizing, distressed or withdrawn behavior; and externalizing, aggressive behavior. We first examine the distribution of children's time use over a week and then regress (using Ordinary Least Squares (OLS)) cognitive achievement and behavior on the average time use net of the demographic controls.

RESULTS

Leisure time available

Table 1 shows the total amount of leisure time available to children by age of the child (6-8 years or 9-12 years) and gender for a weekday and a weekend day. On a given weekday, children 6-8 years old have about 331 minutes (5.5 hours) of leisure time compared with 353 minutes (5.8 hours) for children 9-12 years old. While older children spend a little bit more time in school, they sleep about a half hour less per day than younger children. This accounts for the slightly higher leisure time for older children.

The amount of leisure time available to children on a weekend day is nearly twice that of a weekday—646 minutes (10.7 hours) for children ages 6-8 and 663 minutes (11 hours) for

children ages 9-12. The difference is the 6 and 1/2 hours typically spent in school. Once again, the slightly higher amount of leisure time available to the older children is primarily because they sleep less than younger children.

There are small differences in the amount of leisure time available to children by gender, with no consistent pattern. There is a one-half hour difference between groups at most. In general, girls tend to spend slightly more time in personal care and boys slightly more time at school, which affects the amount of leisure time available. There are no consistent patterns of gender differences in sleeping and eating time.

Table 2 shows that there is some variation in the amount of leisure time available to children by the particular day of the week. For weekdays, children have the most leisure time on Fridays, 398 minutes (6 hours and 38 minutes) for children 6-8 years and 395 minutes (6 hours 35 minutes) for children 9-12 years. Children have the least amount of leisure time on Thursdays, 292 minutes (4 hours and 52 minutes) for children 6-8 years old and 333 minutes (5 hours and 33 minutes) for children 9-12 years old. Most of this difference is due to differences in the time spent in school. On average, children spend over an hour longer in school on Thursday than on Friday. For weekend days, there is about an hour more leisure time available on Saturday than Sunday. This difference is largely due to the fact that children sleep almost an hour more on Sunday than Saturday.

Participation in Leisure Activities

Table 3 lists the most common leisure activities, proportion of children who engage in the activity in a typical week, and the average weekly hours engaged in the activity by age and gender of child. For children 6-8 years of age, watching television is the most universal use of

leisure time with 96% of children engaging in this activity. More than 9 out of 10 children of this age play and about 8 out of 10 participate in housework. Activities with the least frequent participation include hobbies (2%), using the computer (13%) and time spent in outdoor activities (excluding playing)(14%). Girls in this group are much more likely than boys to participate in art and shopping. Girls are slightly more likely than boys to read for pleasure, while boys are more likely to study.

Television watching is also the most universal use of leisure time among children 9-12 years of age (94%) and more than 8 out of 10 of children play and participate in housework. Only 4% of these older children participate in art and 17% participate in outdoor activities. Although computer usage was low in 1997 for all children, older children were almost twice as likely to use the computer (22%) as children 6-8 years of age (13%). As for the younger children, girls 9-12 are twice as likely as boys to participate in art and more than a third more likely to shop. The disparity between genders in reading is greater for older than younger children, with boys decreasing their participation with age more than girls. A higher proportion of older than younger children study, but boys are still more likely than girls to do so. Sports participation among older children reveals a gender disparity that is not evident for children 6-8 years of age. About 83% of boys 9-12 years of age participate in sports, compared with 69% of girls. This disparity develops because boys increase their participation in sports with age while the reverse is true for girls.

The average weekly hours engaged in various leisure activities include both children who participate and those who do not, with the latter group contributing no minutes. Children 6-8 years of age spend about 13 hours per week watching television and about 12 hours playing. These two activities occupy half their total weekly leisure time of 49 hours. These children

spend a little over 2 hours per week studying and about 5 hours in sports. Children spend less than an hour of weekly leisure time using the computer, or participating in art, hobbies, or outdoor activities. Church activities and reading occupy only about 1 hour each of children's leisure time. The "other" category, which includes conversing, visiting, and passive leisure, amounts to about 8 hours per week. Boys spend more time playing, studying, watching television and participating in sports while girls spend more time doing housework and in other leisure.

Most of the same patterns that are evident for children 6-8 are also found for children 9-12 except that older children spend more time studying and participating in sports than younger children, and less time playing. Gender differences also persist except that whereas younger girls watch less television, older girls watch more television than boys.

Day of Week Differences in Leisure Time

In general, children's time use is similar on weekdays and similar on Saturday and Sunday, with small exceptions. On Fridays children spend much more time watching television compared with other weekdays (data not shown). Children spend more time in nearly all leisure activities on Saturday compared with Sunday, except for activities related to church. Church activities occupy about an hour of children's leisure time on Sunday compared with less than 15 minutes on Saturday. Due to the similarity in time use among the weekdays and weekend days, with the exceptions mentioned above, we focus on a weekly estimate.

Leisure Time and Children's Cognitive Achievement

Table 4 shows the results of regressing children's cognitive outcomes on their leisure time activities, controlling for demographic factors. Demographic factors such as parental education, number of children in the family, the child's gender, the mother's passage comprehension score, family structure/employment, and the ratio of income to needs significantly affect achievement. Even so, there are some significant effects of leisure activities.

Positive Indicators. Time spent reading is positively associated with scores on the passage comprehension, letter-word, and applied problems tests. Time spent participating in sports is associated with positive scores on the calculation and applied problems tests. Other positive associations include time participating in church activities for the passage comprehension and calculation test scores and shopping for the passage comprehension and letter-word scores. The literature discussed earlier consistently shows reading and sports to be positive indicators for high achievement and church involvement to be positive for children's development. Thus these findings are not surprising. The strong positive association for shopping is unexpected. More research needs to be conducted on the activities involved in shopping. If this involves parent-child talking and decision-making, it could be helpful to developing verbal skills. Time spent shopping is not associated with the calculation score, which would be expected if it were linked to math skills.

Negative Indicators. As many people would predict, the time spent watching television is negatively associated with scores on the passage comprehension and applied problems tests. This is probably because it reduces the amount of time spent in positive activities, such as reading. Time spent in art activities is negatively associated with the calculation test score and time in outdoor activities is negatively associated with letter-word and applied problems scores. These negative results may reflect selectivity. Children who are less interested in school-work

and academics may be the most likely to participate in art activities and to spend time in outdoor activities. The strongest and most consistent finding is a negative association between the time that children spend doing housework and all of the achievement test scores. While this is surprising, it probably reflects something about the families in which children spend more time in household work. It doesn't reflect family size and family income, since they are both controlled. Too-heavy home responsibilities may interfere with achievement.

Leisure Time and Children's Behavior Problems

Many demographic variables, particularly parental education and family structure/work and maternal warmth (Table 5), have strong associations with behavioral problems but few of children's leisure time activities are associated with such problems. Time spent watching television is associated with more externalizing behavior problems, but the coefficient is quite small and the significance is marginal. Time spent playing is marginally associated with internalizing problems, but again the coefficient is quite small. The amount of time that children spend doing housework is positively associated with both types of behavior problems and this coefficient is reasonably large. Given its negative association with achievement and positive association with behavior problems, more research needs to be done on the meaning of household work for children and the circumstances in which they do more or less of it.

SUMMARY AND CONCLUSIONS

In general, the amount of leisure time available to children 6-12 years by age or gender on a typical weekday—averages 5.5 to 6 hours. Virtually all groups had twice the leisure time on a weekend day (about 10.5 to 11.25 hours) compared with a weekday because they spent no

time in school. Friday was the weekday with the most leisure time available, averaging over an hour more than Thursday, the day with the least amount of leisure time. Nearly all of this difference was accounted for the difference in time spent in school. Children had about an hour more leisure time on Saturday than Sunday because they slept more on Sunday.

The vast majority of children were likely to use some of their leisure time watching television, playing, and doing housework, and about half of children's leisure time was spent watching television and playing. This was true on weekends as well as weekdays. Only a very small proportion of children used leisure time to engage in hobbies and participate in outdoor activities, and very little time was spent in these activities. Girls were more likely than boys to participate in art, reading, and shopping while boys were slightly more likely to study. At older ages, boys participated in sports more than girls and at all ages they spent more time at it.

Can any of these activities be considered as measures of positive behavior in middle childhood? There are three: 1) reading for pleasure, 2) church activities, and 3) participation in sports. Considerable previous research focused on reading as positive behavior. Our research based upon actual time spent supports reading for pleasure as a positive indicator of children's leisure time. Reading is consistently associated with higher cognitive test scores. Participation in sports activities has been studied among adolescents. It is, for children in middle childhood, consistently associated with higher achievement test scores. Thus it qualifies as an indicator of positive behavior for them as well. Time spent in church and church-related activities is not as frequently measured. Time spent in church activities is consistently positively related to achievement and could be used as a measure of positive behavior.

At the time this survey was conducted, the use of computers at home was experiencing rapid growth. Even with the relatively small amount of time spent by children in our study and

their young age, we found a positive association with applied problem scores. More research needs to be conducted as to what type of and under what circumstances computer use benefits children before considering it as a positive indicator of behavior. Some of the other activities expected to be positively associated with cognitive achievement and lower behavior problems simply occurred too infrequently to obtain in a diary. The shortcoming of the time diary methodology is that it more accurately reflects regular than occasional activities.

Finally, this study separated shopping from housework. We know that time spent in household work has been declining for women and children, while time spent shopping has been increasing. There is a presumption that time spent helping out around the house is a positive use of children's time. However, we found no evidence to support this. In fact, more time spent in household work is negatively associated with achievement and positively associated with behavior problems. We do not yet know how to interpret the positive association between shopping and achievement. More research needs to be conducted before including shopping as an indicator of positive behavior.

A number of leisure time activities were found to have negative associations with achievement and, therefore, are not positive behavior indicators. This includes art and outdoor activities. Television watching can be viewed as a negative measure since more time spent watching TV was associated with lower achievement and having more behavior problems. One indicator that was unexpectedly negative is studying. While never statistically significant, the coefficient was uniformly negatively associated with achievement, suggesting that studying follows poor performance rather than leading to good performance.

In sum, this study has identified several activities that could be included as positive indicators (reading, church activities, sports), and several for which more research needs to be conducted (computer use, shopping).

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