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Healthy Mind, Healthy Habits

The Influence of Activity Involvement in Middle Childhood

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There is growing evidence that participating in extracurricular and out-of-school activities during adolescence is associated with both short- and long-term indicators of positive development (e.g., Eccles & Barber, 1999; Eccles & Templeton, 2002; Mahoney, 2000). Yet, few researchers have questioned whether these relations are solely the result of activity participation during adolescence or if they are the culmination of a process that began in middle childhood. Middle childhood is marked by many physical, cognitive, social, and contextual changes. It is during this time that children develop multiple cognitive skills, such as reasoning and the ability to reflect on one's accomplishments, experiences, and aspirations. Children's social worlds broaden as they begin to participate in organized out-of-school activities. The changes in children's abilities and skills coupled with the new contexts in which children develop suggest that middle childhood is an important period for the development of skills and beliefs through participation in out-of-school activities. Although entry into adolescence and adulthood brings new abilities and interests, some of the benefits of adolescent participation may not be realized unless the groundwork is laid in middle childhood.

There is little evidence available concerning developmental hypotheses about the reasons or mechanisms for these associations. Longitudinal studies over extended periods of time afford an opportunity to examine positive and negative consequences of participation based on activity characteristics as well as other potential influences such as parental encouragement or child talent. The purpose of this chapter is to extend previous research by examining how participation in academic and nonacademic activities during middle childhood relates to youths' participation in these activities during adolescence, as well as the impact of these choices on positive youth outcomes.

This research is guided by the developmental model presented in Figure 14.1, which is based on the Eccles Expectancy-Value model (see

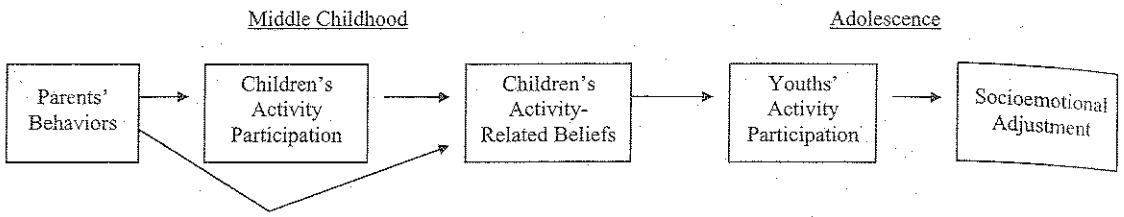

FIGURE 14.1. Theoretical model guiding the current investigation.

Eccles, 1993, for a full description of the model). This model posits that children's motivational beliefs about their ability (self) and about the value of participating in any given activity (task) emerge over middle childhood. Parents' behaviors and children's activity participation during middle childhood can set children on a path of future participation and beneficial outcomes. More specifically, parents affect their children's activity participation through three basic mechanisms: role modeling, direct provision of activity-related experiences (e.g., provision of tools and experiences), and expectancy/value socialization (e.g., by the messages they give regarding their children's competence and potential for different activities). These behaviors are likely to influence the development of children's beliefs about and participation in activities. In turn, children who participate in activities in middle childhood and have formed more favorable self and task beliefs during these ages are more likely to participate in these activities during adolescence, and it is more likely that this adolescent participation will lead to positive outcomes. Given these basic assumptions of the model, we address the following three questions in this chapter:

1. What is the role of parents in promoting math and sport activity participation and activity-related beliefs in middle childhood?
2. What are the associations between children's math and sport activity participation and activity-related beliefs from middle childhood through adolescence?
3. How is youths' activity participation in high school organized sports associated with academic, social, and health promoting behaviors?

METHOD

The Childhood and Beyond Study (CAB) is a longitudinal study of primarily white middle class parents and children who attended 12 public schools in southeastern Michigan. Data collection began in 1987 with approximately 900 children (i.e., 75% of the eligible children) and 65% of their parents when children were in kindergarten, first, and third grade. Nine waves of data were collected: four waves when the children were in elementary school, four when they were in middle and high school, and one approximately at age 20. For example, we have data on the oldest cohort when the participants were in grades 3–6, grades 10–12, and age 20.

TABLE 14.1. *Reliability, Means, and Standard Deviations of Youth Reported Activity Participation, Expectancies/Values, and Adolescent Outcomes*

	Sports			Math		
Item	**Reliability**	***M***	***SD***	**Reliability**	***M***	***SD***
Aptitude	N/A	48.96	10.51	N/A	5.13	1.54
Activity participation						
Wave 3	.63	2.92	1.84	N/A	2.54	1.82
Wave 4	.77	3.64	1.69	N/A	2.93	1.68
Wave 5	N/A	3.76	2.12	–	–	–
Math courses – Wave 7	–	–	–	N/A	2.74	1.90
Expectancies/values						
Self-concept – Wave 3	.85	5.56	1.15	.78	5.42	1.02
Interest – Wave 3	.86	6.30	1.33	.81	4.85	1.93
Importance – Wave 3	.84	4.88	1.46	.61	5.36	1.03
Self-concept – Wave 4	.89	5.43	1.61	.85	5.33	1.10
Interest – Wave 4	.89	5.84	1.48	.84	4.70	1.89
Importance – Wave 4	.89	4.53	1.61	.71	5.26	1.02
Adolescent outcomes – Wave 5						
Risky behavior	.90	1.68	0.90			
Depression	.86	1.27	1.61			
Negative friends	.84	2.39	1.10			
Positive friends	.72	3.52	1.11			
School belonging	.73	5.04	1.08			
Self-esteem	.78	3.05	0.57			

Note: Wave 3 = second, third, and fifth grades. Wave 4 = third, fourth, and sixth grades. Wave 5 = seventh, eighth, and tenth grades.

twelfth grades). Children's data were collected at school in the spring of each year. Children's aptitude was measured with the Bruininks-Oseretsky Test of Motor Proficiency for physical abilities at Wave 1 and with teacher's report of children's math skills at Wave 3. During Wave 3, self-administered parent questionnaires were mailed home with a stamped, return envelope. Youths completed questionnaires on their participation, values, self-competencies, and outcomes in their classroom while being supervised by several staff members at Waves 3, 4, 5, and 7. During Waves 3 and 4, the questionnaires were read aloud to the entire class.

Child Measures

Activity Participation. Children described how often they participated in sport and math activities at Wave 3 (i.e., second, third, and fifth grades), one year later at Wave 4 (i.e., third, fourth, and sixth grades), and five years later at Wave 5 (i.e., seventh, eighth, and tenth grades; see Table 14.1 for

descriptives). Children reported how often they played organized sport activities with two items at Waves 3 and 4: "How often do you play sports with friends around the neighborhood where someone keeps score" and "How often do you play sports on organized teams where someone keeps score" (0 = *never*, 6 = *a lot*). At Wave 5, youths described about many hours they spent on organized sport activities during the last week (1 = *none*, 8 = *21 or more hours*). At each of the three waves, children also described how often they did other athletic activities for fun. Finally, at Waves 3, 4, and 5, the number of organized sports was assessed through summing the number of activities in which children participated.

In Waves 3 and 4, children reported how often they engaged in math activities after school (0 = *never*, 6 = *a lot*). Adolescents' participation in out-of-school math activities besides time spent on homework wanes. They, however, often make other achievement-related choices in adolescence, such as the math courses they take in high school. Due to this developmental change in youths' math choices, we gauged adolescents' participation in math by summing the number of math courses they took throughout high school. In twelfth grade (i.e., Wave 7 for the oldest cohort), participants reported whether they had taken algebra, algebra II, geometry, precalculus, trigonometry, calculus, and AP calculus/AP analysis courses at any point during high school.

Activity-Related Expectancies/Values. Children described their expectancies and values concerning sports and math at Waves 3 and 4 (Table 14.1). Based on factor analysis and theoretical considerations, scales were created to assess competence (5-item scale; e.g., "How good at math are you?"), interest (3-item scale; e.g., "How much do you like doing math?"), and importance in each of these domains (4-item scale; e.g., "In general, how useful is what you learn in math?"). These scales have excellent face, convergent, and discriminant validity, and strong psychometric properties (Eccles, Wigfield, Harold, & Blumenfeld, 1993).

Adolescent Outcomes. One of the central topics of this chapter is to examine the outcomes associated with *adolescents'* participation in activities. Adolescents were asked a series of questions about a range of outcomes including risk behavior, feelings of depression, self-esteem, school belonging, characteristics of their peer group, and activity participation at Wave 5 (Table 14.1). Adolescent risk behavior described youths' engagement in a variety of behaviors (e.g., skipping school) over the past six months (1 = *never*, 8 = *31 or more times*; 7-item scale). Youths' self-report of depression was drawn from Kovac's (1985) Children's Depression Inventory. Students' self-esteem was measured with Harter's Self-Worth scale (Harter, 1982). The scale measuring school belonging tapped whether students felt that they mattered, belonged, or were left out in school (1 = *never*, 7 = *all of*

RESULTS

Question 1: What Is the Role of Parents in Promoting Math and Sport Activity Participation and Activity-Related Beliefs in Middle Childhood?

In the model presented in Figure 14.1, we hypothesized that parents' behaviors promote children's activity involvement and activity-related beliefs in middle childhood, which, in turn, are associated with adolescent participation. We tested the first part of this model – parent behaviors promote participation and beliefs – by examining the association between parents' behaviors and beliefs and children's math and sport activity participation and beliefs during middle childhood.

In order to understand the associations between parents' behaviors and beliefs and children's activity-related outcomes, we used an approach similar to one utilized by risk/resiliency researchers to create family profiles based on cumulative promotive scores. Risk and resiliency researchers have used cut points on various risk factors to examine the impact of cumulative risk and promotive/protective factors on children's functioning (Rutter, 1988; Sameroff, Bartko, Baldwin, Baldwin, & Seifer, 1998). Because multiple influences can put children at risk, the number of risk/resiliency factors in a child's life may be more important than the specific types of factors. Our qualitative analyses suggest that children engage in particular activities for a variety of reasons (Fredricks et al., 2002). Hence, we have adapted the risk/resiliency approach to examine the relations between parents' beliefs and behaviors and children's activity involvement.

In these analyses, the promotive scores included parents' (a) ratings of children's sport or math competence, (b) value of sports or math, (c) level of encouragement of sports or math, (d) time involvement with their child in sport or math activities, (e) purchases of sport or math materials, and (f) own time involvement in sports or math. Sport promotive scores also included a seventh item: father coaches a team. To create an index of family-level promotive behaviors, mothers' and fathers' behaviors were averaged. Then, parents were given a 1 or 0 for each variable depending on whether they were above or below the top 25% cutoff (i.e., above the cutoff = 1, below the cutoff = 0). All promotive behaviors were summed to create an index of family-level promotive climate. A higher score signified that parents engaged in more behaviors that promote children's sport or math participation and beliefs.

Parents' sport promotive scores ranged from 0 to 7, with a *mean* of 1.76. For subsequent analyses, families with four or more promotive scores were combined into a single group so that there was adequate sample size in each group. Parents' math promotive scores ranged from 0 to 6, with a

mean of 1.94. Because of the low frequencies of families with 4, 5, or 6 math promotive scores, we combined these family types into one group.

Analysis of covariance (ANCOVA) was used to examine the relations between the number of promotive scores at Wave 3 (second, third, and fifth grades) and each of the standardized scores of children's ability self-concept, interest, importance, and participation at Wave 3 and one year later at Wave 4 (third, fourth, and sixth grades). Separate ANCOVAs were computed for each of the four outcomes at Waves 3 and 4. In the cross-sectional analyses, family income, parent education, child gender, child grade, and aptitude were included as covariates. In the longitudinal analyses, the controls from the cross-sectional analyses and the outcome measured at Wave 3 were included as covariates.

The number of sport and math promotive scores positively predicted children's sport and math ability self-concept, interest, importance, and participation at both waves. Figure 14.2 shows the adjusted means of children's self-concept, interest, importance, and participation by the number of promotive scores. In general, these results show a linear relation between the number of promotive scores and children's beliefs and participation, indicating that promotive scores have a cumulative positive relation to children's motivation and participation. Children's concurrent (i.e., Wave 3) math and sport beliefs and participation were significantly predicted by parents' promotive scores even after controlling for family- and child-level differences. Parents' sport promotive scores also significantly predicted children's sport outcomes one year later (i.e., Wave 4). With the exception of math importance, children's math outcomes at Wave 4 were not predicted by parents' promotive scores once we controlled for children's outcomes measured at Wave 3. That is, parents' promotion of sports predicted increasing involvement and beliefs about sports over the subsequent year, but their promotion of math did not lead to significant increases beyond those observed at Wave 3. The longitudinal predictions of parents' promotive scores were reduced by the stability of these indicators across time.

Question 2: What Are the Associations Between Children's Math and Sport Activity Participation and Activity-Related Beliefs from Middle Childhood Through Adolescence?

The Eccles Expectancy-Value model asserts that children's activity participation and activity-related beliefs reciprocally influence one another across development. In line with this model, we expected that children's activity participation would predict their beliefs, which, in turn, would predict adolescent participation. These two sections of the model presented in Figure 14.1 were tested separately. First, we examined the relations between children's activity participation and beliefs within middle childhood.

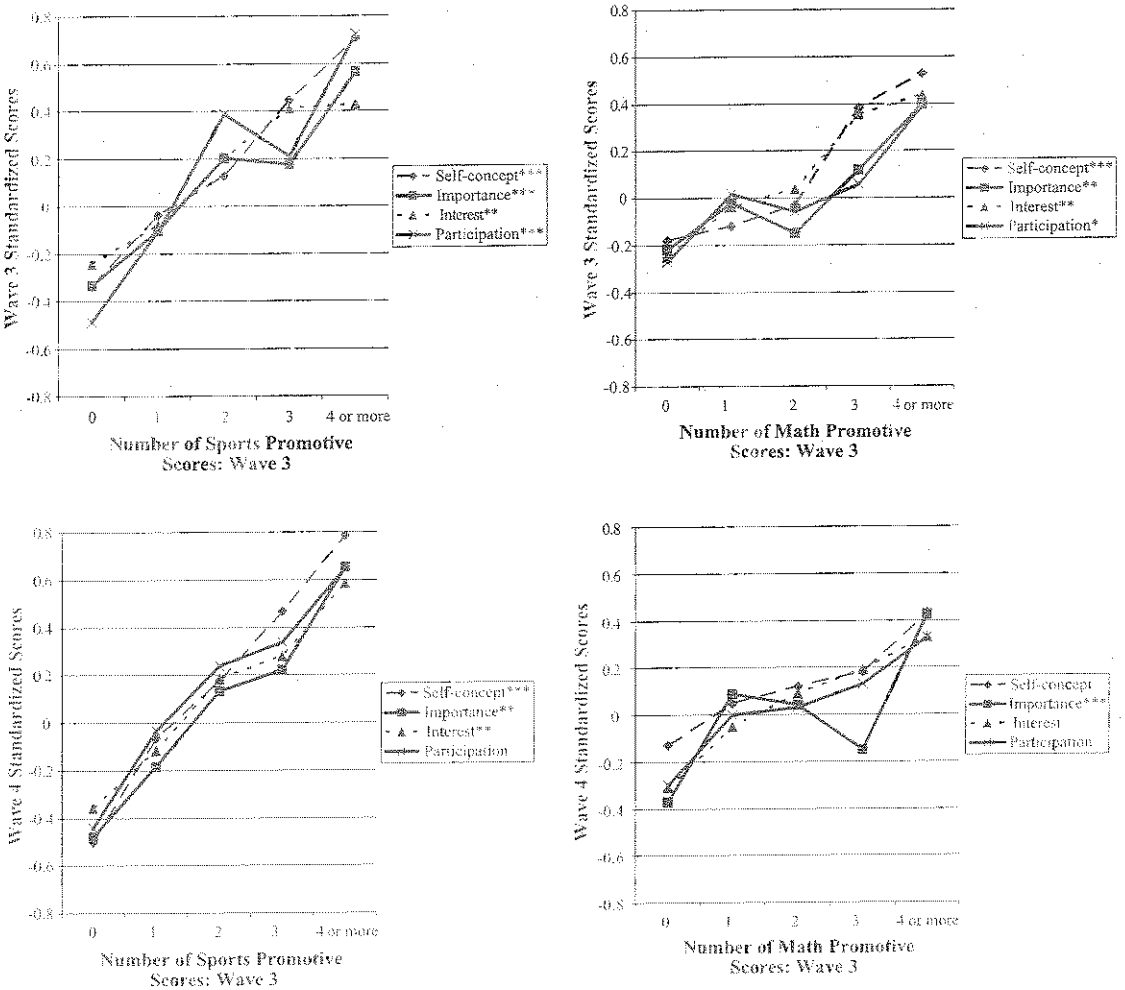

FIGURE 14.2. The standardized adjusted means of children's sport and math expectancies, values, and time use at Wave 3 (second, third, and fifth grades) and Wave 4 (third, fourth, and sixth grades) by the number of parental promotive scores at Wave 3. The significance of the parental promotive scores' main effect in the ANCOVA analyses is designated with $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Second, we tested the associations between children's beliefs in middle childhood and their participation in adolescence.

Participation Predicting Beliefs in Middle Childhood. We hypothesized that children's participation in math and sport activities should positively predict their beliefs concerning math and sports. These associations were tested with cross-sectional (i.e., all indicators were measured in Wave 3 when children were in second, third, and fifth grades) and longitudinal regression analyses (i.e., Wave 3 predictors and Wave 4 outcomes). As in previous analyses, parent education, parent income, grade level, gender, and aptitude were used as controls in both analyses. The controls in the longitudinal analyses also included the outcome measured at Wave 3.

Overall, participation in sport and math activities predicted children's expectancies and values in these domains. Children's beliefs concerning

their competence and interest in and the importance of sports and math at Wave 3 were positively predicted by their concurrent participation in these domains (Table 14.2). In addition, participation at Wave 3 also predicted beliefs at Wave 4 even when controlling for their beliefs measured at Wave 3 (Table 14.3). These analyses suggest that the time children spend in math and sport activities is associated with higher expectancies and values in these domains, and that participation predicts increasing expectancies and values over the course of a year.

Beliefs in Middle Childhood Predicting Adolescent Participation. The findings discussed in the previous section suggested that participation predicted children's expectancies and values in middle childhood, specifically in third, fourth, and sixth grades (i.e., Wave 4). The next step in our model was examining our hypothesis that these expectancies and values in middle childhood would be associated with activity participation in high school. As mentioned in the Method section, participants were in third, fourth, and sixth grade at Wave 4 and in seventh, eighth, and tenth grade four years later in Wave 5. In order to predict high school participation at Wave 5, we had to restrict our analyses to the oldest cohort who were in sixth grade in Wave 4 and tenth grade at Wave 5. Separate regressions included competence, importance, and interest to avoid issues of multicolinearity; aptitude, gender, parent education, and parent income were included as controls.

Children's self-perceptions of competence, importance, and interest in sports in sixth grade were positively associated with adolescents' sport participation in tenth grade, after controlling for child and family differences (see Table 14.4). Children's competence and value beliefs were positively related to all three measures of sport participation (i.e., time on organized sport activities, number of organized sport activities, and time on sports for fun). Thus, children are more likely to participate in sports when they perceive that they have ability in sports, value the activity, and enjoy participating in middle childhood.

Adolescents' participation in out-of-school math activities besides time spent on homework is minimal. During adolescence, however, youths can often choose whether they take math courses throughout high school. Due to this developmental change in youths' math choices, we tested the relations between middle childhood beliefs and the number of math courses they took in high school. In addition, youths' math courses and experiences are very different through the years spanning middle childhood through high school. As a result, youths' expectancies and values change across this period (Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002). We used two sets of analyses to examine the associations between children's beliefs concerning math in middle childhood and the number of math courses they took in high school. First, children's middle childhood beliefs were

TABLE 14.2. *Regression Results Predicting Sport and Math Expectancies and Values at Wave 3 from Activities at Wave 3 (second, third, and fifth grades)*

	Sports			Math		
	Competence	Importance	Interest	Competence	Importance	Interest
Model Summary	β	β	β	β	β	β
Predictors						
Time in activities	.36***	.33***	.33***	.15***	.12**	.23***
Aptitude	.10*	.00	.00	.12**	.07†	.14***
Gender	−.28***	−.15***	−.15***	.19***	.05	.08*
Cohort status	−.15***	−.12**	.02	−.06	−.03	−.07
Parent education	.01	.09†	.13*	.00	−.11*	−.09*
Parent income	.01	−.20*	−.23*	.06	.04	.05
Model F[a]	44.79***	20.89**	20.54***	8.37***	3.16**	5.60***
Adjusted R^2	.30	.16	.16	.07	.02	.08

[a] $df = 7,711$ for sport models; $df = 6,569$ for math models.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 14.3. *Regression Results Predicting Sport and Math Expectancies and Values at Wave 4 (third, fourth, and sixth grades) from Activities at Wave 3 (second, third, and fifth grades)*

	Sports			Math		
	Competence	Importance	Interest	Competence	Importance	Interest
Model Summary	β	β	β	β	β	β
Predictors						
Time in activities	.19***	.22***	.20***	.04	.09*	.13***
Prior belief	.50***	.39***	.36***	.39***	.35***	.39***
Aptitude	.09*	.05	.10*	.21***	.01	.09*
Gender	−.14***	−.17***	−.15***	.16***	.06	.03
Cohort status	−.10**	−.12**	−.12**	−.05	−.01	−.11**
Parent education	.03	.06	.01	.01	−.01	.03
Parent income	.02	−.15*	−.04	.05	.04	−.05
Model F^a	84.21***	51.05***	39.30***	30.03***	13.05***	24.28***
Adjusted R^2	.49	.37	.31	.28	.14	.24

[a] $df = 8,685$ for sport models; $df = 7,525$ for math models.

*$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 14.4. *Regression Results Predicting Youths' Sport Activities at Wave 5 (tenth grade) from Their Expectancies and Values at Wave 4 (sixth grade)*

	Time in Organized Sports			Number of Organized Sports			Time in Sports for Fun		
Model Summary	β	β	β	β	β	β	β	β	β
Predictors									
Sport competence -6th	.33***	–	–	.32***	–	–	.28***	–	–
Sport importance -6th	–	.29***	–	–	.27***	–	–	.21***	–
Sport interest -6th	–	–	.26***	–	–	.25***	–	–	.23***
Aptitude	.06	.10	.09	.15*	.18**	.17**	.03	.07	.05
Gender	.06	.03	.00	.11*	.08	.07	−.09*	−.13**	−.13**
Parent education	.15*	.13*	.14*	.12	.10	.11	−.03	−.04	−.03
Parent income	−.04	.04	.01	−.02	.06	.03	.08	.14	.12
Model F[a]	11.28***	10.16***	8.58***	12.93***	11.15***	10.77***	10.43***	8.07***	8.77***
Adjusted R^2	.11	.10	.09	.15	.13	.12	.11	.08	.09

[a] $df = 7,150$.

*$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 14.5. *Regression Results Predicting the Number of Math Courses Taken in High School from Youths' Math Expectancies and Values in Tenth Grade*

Model Summary	β	β	β
Predictors			
Math competence -10th	.55***	–	–
Math importance -10th	–	.23**	–
Math interest -10th	–	–	.32***
Aptitude	.04	.09	.08
Gender	−.13	−.05	−.05
Parent education	.15	.22*	.20*
Parent income	.06	.01	.02
Model F[a]	14.97***	4.00**	5.72***
Adjusted R^2	.35	.10	.15

[a] $df = 5, 131$.
*$p < .05$. **$p < .01$. ***$p < .001$.

used to predict their beliefs in adolescence. Second, analyses described the relations between adolescents' beliefs and the number of math courses. Children's math expectancies and values in sixth grade were associated with their expectancies and values in tenth grade (competence $\beta = .43$, $p < .001$; importance $\beta = .20$, $p < .01$; interest $\beta = .32$, $p < .001$). Those expectancies and values in tenth grade were positively associated with the number of math courses youths took during high school (Table 14.5). As in the sport domain, youths who have an interest in math, believe they are good at math, and value math are more likely to take math courses in high school.

Question 3: What Outcomes Are Associated with Youths' Activity Participation in High School Organized Sports?

In the previous sections, we have shown that parents' behaviors and beliefs promote youths' participation in activities during middle childhood. Furthermore, these beliefs predict adolescent involvement in those activities. In this section, we examine the last path of the model presented in Figure 14.1 for sport participation by testing whether participation in organized activities during adolescence acted as a resource that improved adolescents' chances of obtaining optimal levels on later outcomes and/or kept adolescents free from risky outcomes. Because few youths participate in organized math activities (e.g., math clubs) in adolescence, these analyses focus on the correlates of youths' participation in organized sport activities.

In these analyses, we defined thresholds as points at which participation in organized sport activities dramatically increased youths' chances

of success and decreased their likelihood of risk. One reason for creating thresholds is that it provides simple but rich measures of the potential benefits of activity involvement that are interpretable by practitioners and policymakers. Specifically, we were interested in whether adolescents who participated at high levels (i.e., 10 or more hours per week) had more optimal developmental outcomes than adolescents who were not involved in athletics. The decision to compare the two groups [high participation (n = 81 students) versus no participation (n = 73 students)] was based on our hypothesis that the intensity of activity involvement mattered and that high rates of sport involvement would act as a resource that improved adolescents' developmental outcomes.

We compared adolescents in the two groups on negative behaviors including frequency of risk behaviors, association with a negative peer group, and level of depression; and positive behaviors including association with a positive peer group, levels of school belonging, and self-esteem. For each developmental outcome, we created a risk and productive group by examining the distribution of each variable to find the cutoff point where differences between individuals scoring above and below this point were as large as possible on related variables. We patterned our analyses on work by Gambone, Klem, and Connell (2002) and did not include covariates in any of these analyses. First, we examined whether participation in high levels of organized sports helped to lessen the probability of ending up in a risk category in tenth grade. Adolescents with high levels of sport participation were 40% less likely to end up in a negative peer group and 40% less likely to be in the depressed category than youths who did not participate in sports (Figure 14.3). Next, we tested whether organized sport participation increased the probability of ending up in the productive group. Youths who participated at high rates accrued benefits from their participation (Figure 14.3) including a 26% increase in the probability of being in a positive peer group, a 25% increase in the probability of being in the high self-esteem group, and a 53% increase in the probability of ending up in the high school belonging category.

DISCUSSION

Our findings extend the work on out-of-school activities by focusing on the developmental period of middle childhood through adolescence. Although most individuals begin participating in activities during middle childhood, researchers have concentrated on adolescence. As a result, we know very little about why children get involved in activities during middle childhood and the consequences of participation. Researchers have theorized that middle childhood is an important time for youths to develop and form values and beliefs about competence in various domains

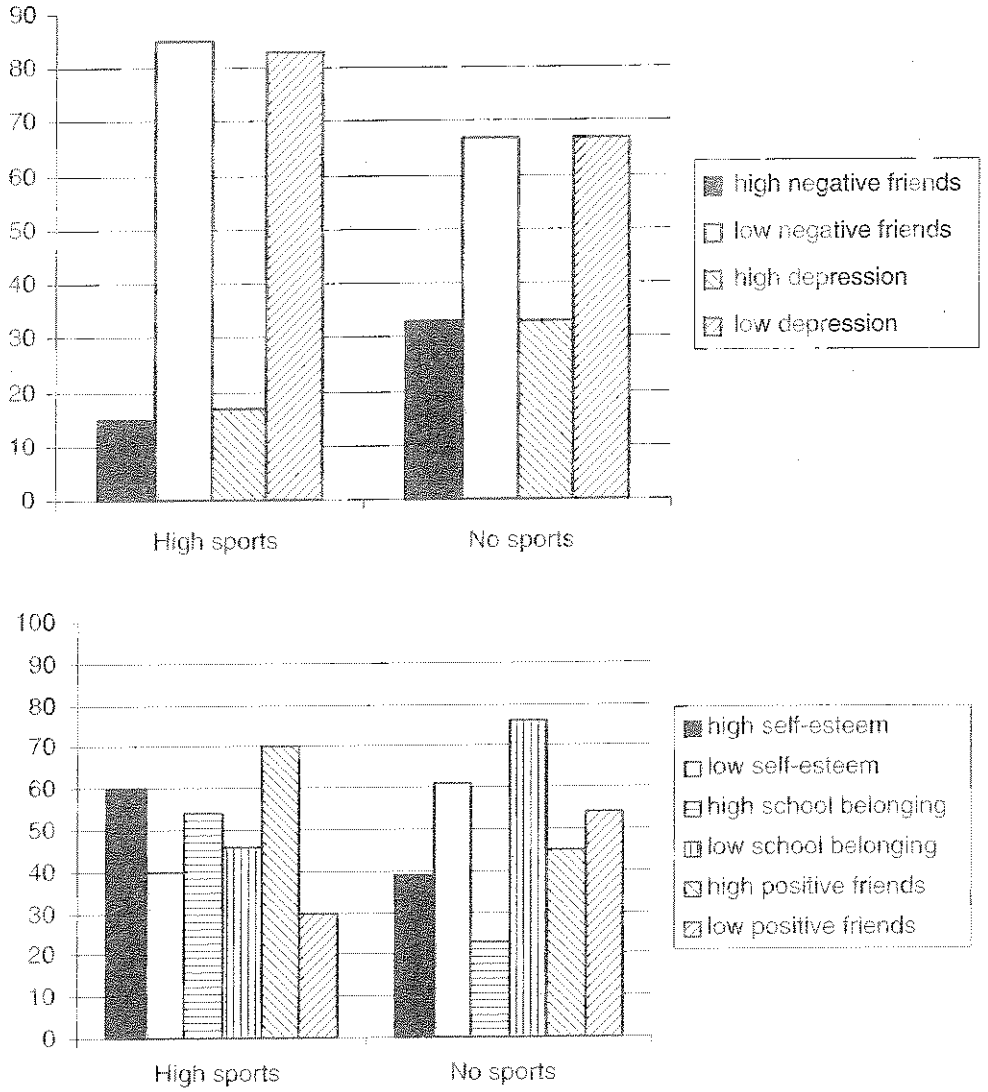

FIGURE 14.3. Percentage of youths who had high or low risky behaviors (i.e., number of negative friends, depression) and high or low productive outcomes (i.e., positive friends, self-esteem, school belonging) for youths participating in a high amount of sports, and youths not participating in sports.

(Erikson, 1982). Our results suggest that (a) parents' efforts to get their children involved in out-of-school activities influence both their children's participation and their children's developing expectancies and values; (b) children's activity participation and their self and task beliefs (ability perceptions and activity value) are linked, such that middle childhood participation predicts beliefs, which, in turn, account for adolescent participation; and (c) sport participation during adolescence predicts better adolescent functioning in multiple domains. These results extend prior research by Eccles and her colleagues on the association between expectancy and values and participation measures by examining the developmental progression of middle childhood activity participation to adolescent outcomes

(Barber, Eccles, & Stone, 2001; Eccles-Parsons, Adler, & Kaczala, 1982; Fredricks & Eccles, 2002).

Our results suggest that parents' beliefs and behaviors can play a substantial role in promoting or discouraging youths' participation in a variety of out-of-school activities, particularly during middle childhood. In fact, a number of supportive behaviors and beliefs predicted children's activities, self-beliefs, and task values. Similar to risk and resiliency research (Sameroff et al., 1998), the number of parental behaviors and beliefs rather than a specific set of practices predicts participation. This more ecologically valid approach for capturing the variety in parents' behaviors and the home environment across children illustrates that various family influences can have a similar effect on children's participation. Parents are one of the first key influences on children's participation in activities, which can have long-term consequences for future participation, academic course selection, and psychosocial outcomes (e.g., risk behavior, self-esteem).

Many researchers have documented the link of competence and expectancy beliefs to activity choice, persistence, and performance in academic domains (Bandura, 1997; Eccles, Wigfield, & Schiefele, 1998; Marsh & Yeung, 1997). The current results replicate and expand on this work by examining the links between activity participation in middle childhood and adolescence through children's expectancies and values. Our findings support the Eccles Expectancy-Value model predicting that youths' participation in activities and their beliefs concerning those domains influence one another. Success and participation in activities led to both increases and decreases in youths' activity value and self-concept of abilities. At the same time, youths who believe they are skilled in a particular domain and/or value the domain are more likely to continue to pursue this endeavor after school than their peers. In other words, youths continue to participate, in part, based on their beliefs concerning that activity. Although children's beliefs become more refined during adolescence as they gain experience, they begin to form their expectancies and values during middle childhood, suggesting that middle childhood experiences in activities are important formative influences. Because middle childhood is the time when the fundamentals of many skills are acquired, these same patterns may hold for other skill-based activities, such as playing a musical instrument or reading.

Across many of our findings, the results were stronger for sports than math. There are several differences between math and sports that may account for these findings. First, there is likely to be more variability in sports than math indicators in our middle-class sample. Athletic activities are more voluntary, and the importance of sports may differ more widely than math across families. Children's performance in math, on the other hand, may be viewed as essential for children's future educational

and occupational success. Thus, for example, children may feel math is important regardless of their participation in math out-of-school activities because children may already know it is important for their education. Second, sports are more highly visible activities with greater status and prestige than math activities. Athletic activities provide more opportunities for social interactions with peers, public recognition, and engagement in activities that differ from those which are targeted during the school hours. Finally, there are more opportunities for children to engage in sports through both informal avenues (e.g., pick-up games in the neighborhood) and organized activities (e.g., YMCA, school/community teams) than math activities. It is likely that the distinctive characteristics of the math and sport domains and the differences in participation accounted for the stronger findings in sports.

Engaging in sports is a process that, for many youths, begins in middle childhood and continues through adolescence. Adolescents who spend a lot of time in organized sport activities appear to reap a variety of psychological, social, and behavioral benefits. They are less likely to engage in risky and negative behaviors and more likely to show optimal developmental outcomes. Unlike previous research, this study did not find that sport participation was associated with higher levels of risk behavior, particularly alcohol use (Eccles & Barber, 1999). These results highlight the potential of activities to help adolescents navigate their high school years, and add support to recommendations for more opportunities for youths to be involved in productive and structured activities. Participation in middle childhood, however, is a key step on the pathway to subsequent adolescent and young adulthood outcomes. Unfortunately, out-of-school and extracurricular activities are often viewed as nonessential and are often among the first items to be removed from school budgets during times of economic troubles. Educators and policy makers should reevaluate these assumptions because of the potential developmental benefits of participation for many youths.

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