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**Who will go out and play? Parental and psychological influences on children's attraction to physical activity**

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## Who Will Go Out and Play? Parental and Psychological Influences on Children's Attraction to Physical Activity

Robert J. Brustad

Identifying social and psychological influences affecting children's attitudes about physical activity is an important step in understanding individual differences in children's activity involvement. This study examined the influence of parental socialization and children's psychological characteristics upon attraction to physical activity. Fourth-grade children ( $N=81$ ) completed questionnaires assessing perceived physical competence and attraction to physical activity. Parents also completed questionnaires assessing their physical activity orientations and level of encouragement of their child's physical activity. A proposed model linking four sets of social and psychological variables was tested through path analysis. The results generally supported the hypothesized model and suggested that parental physical activity orientations, parental encouragement levels, children's gender, and children's perceived physical competence are important influences upon children's attraction to physical activity.

The knowledge that inactivity during childhood predisposes youngsters to a variety of health risk factors (5, 7), in combination with research indicating that many American children are relatively inactive (2, 11), has stimulated an interest in better understanding children's physical activity patterns. While it appears that American children on the whole may be less active than in the past (20), research also shows there are large individual differences among children in their physical activity levels (2). Researchers should try to identify the social, psychological, biological, and developmental factors that contribute to these differences in children's physical activity behavior.

Throughout this paper, *physical activity* will be used as an umbrella term pertaining to both the structured (e.g., organized youth sport, school physical education) and unstructured (e.g., after-school play) movement experiences of children. The primary area of interest, however, relates to the social and psychological influences that may influence children's attraction to physical activity.

To date, limited research has addressed the psychosocial correlates of children's physical activity. Pediatric researchers have primarily shown interest

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in the health related outcomes of physical activity for children but have not yet avidly pursued the social and psychological dimensions of this involvement (3). Conversely, researchers interested in children's youth sport behavior have identified social and psychological factors influencing children's sport experiences but have not yet crossed over to examine how such influences might affect children's physical activity in other settings. By merging the youth sport research tradition with current health related research interests, valuable insight can be gained regarding the social and psychological correlates of children's physical activity.

The role of the family as the major initial socializing influence upon children's physical activity seems indisputable. Although the knowledge base pertaining specifically to the socialization of children's physical activity is limited, a wealth of related research indicates that the nature and extent of young children's physical play opportunities depends greatly upon the set of beliefs and expectations held by their parents, particularly as such beliefs and expectations relate to gender (10, 14). Further evidence for the role of the family comes from research on children's involvement in organized youth sport which indicates that parents assume the key socialization role in children's initial sport involvement (14).

Socialization has been defined as "the process whereby individuals learn skills, traits, values, attitudes, norms, and knowledge associated with the performance of present or anticipated social roles" (15, p. 267). This definition makes it clear that the socialization process does not pertain solely to the physical aspects of involvement but extends to the social and psychological contexts as well.

The multidimensional nature of the socialization experience requires a research framework capable of addressing the social, psychological, and physical dimensions of involvement. One such framework for studying socialization processes has been developed by Eccles and colleagues (8, 9). Their expectancy-value model of achievement choice and behavior proposes that children's motivation related cognitions (e.g., perceived competence, value of involvement) are shaped through interactions with parents. In particular, parents are presumed to influence children's judgments by communicating their own beliefs about the child's likelihood of success and the relative value of the various achievement areas. The "expectancy socialization" approach advocated by Eccles and colleagues contrasts with traditional role modeling approaches to socialization, which focus on parental behavior rather than parental belief systems as the key influence in children's achievement motivation.

Pediatric researchers have yet to examine how parents influence their children's physical activity involvement. However, two recent studies suggest that the magnitude of such influence is indeed strong. In a study assessing the similarity of parent/child activity habits, Freedson and Evenson (11) categorized parents and children as "high" or "low" activity based on the use of Caltrac accelerometers. Similarity between the activity categorization of father and child occurred in 67% of the cases, and between mother and child in 73% of instances, indicating a fairly high level of familial aggregation in activity. Employing a similar protocol, researchers involved with the Framingham Children's Study found a strong relationship between the physical activity levels of parents and that of their 4- to 7-year-old children (16). In fact these researchers found that children of two

active parents were six times more likely to be active than children of inactive parents.

In addition to socialization influences, intrapersonal psychological factors should also be anticipated to affect children's physical activity choices. Psychological variables central to current motivational theories include self-perceptions such as perceived competence, self-efficacy, and perceived control (1, 9, 12, 17). Contemporary motivational theories propose that domain-specific self-perceptions underlie motivational processes, such as the willingness to engage in particular achievement areas and to put forth effort while engaged.

Research on children's motivation and achievement behavior has generally supported theoretical expectations. Researchers in the academic (8, 19) and physical (see 4, 22) domains have found that children's competence perceptions are linked to their motivation, success expectancies, and achievement levels. Little published research has examined the link between children's perceived competence and physical activity participation. Eccles and Harold (9) found that children's self-perception characteristics and parental socialization influences explained gender differences in children's sport involvement. Boys had higher perceived sport competence than girls did, and were more likely to report that participating in and doing well at sports was important to their parents.

The research conducted by Eccles and Harold found that an important mediating variable affecting children's involvement choices pertains to individual differences in the perceived value of sport. It may be argued that differences in the value of, or attraction to, physical activity similarly influence children's physical activity involvement. It is apparent that individual differences do exist among children in their attraction to physical activity. Furthermore, there are likely to be differences among children in the aspects of physical activity that are deemed attractive or unattractive. For example, opportunities for play, social interaction, physical exertion, and competition are components of physical activity that may attract some youngsters more than others.

The purpose of this study was to test a conceptual model that links parental physical activity orientations (e.g., enjoyment, fitness, importance), parental socialization practices (e.g., encouragement), and children's self-perceptions with children's attraction to physical activity. The proposed model is presented in Figure 1 and corresponds with the expectancy-socialization research of Eccles and colleagues (8, 9). It is anticipated that parents with favorable orientations toward physical activity will provide their child with more encouragement to engage in it. Higher levels of encouragement will then translate into greater perceived competence. Higher levels of perceived competence will in turn be linked to greater attraction to physical activity. In line with gender related socialization research (8, 9, 14), it is also hypothesized that young males will receive greater encouragement in physical activity than young females and will demonstrate higher perceived competence, thereby indirectly affecting boys' and girls' attraction to physical activity.

## Method

### *Subjects and Measures*

Fourth-grade children (39 boys and 42 girls) and their parents served as subjects in this study. The children ( $M$  age = 10.4 yrs,  $SD$  = .3 yrs) were primarily

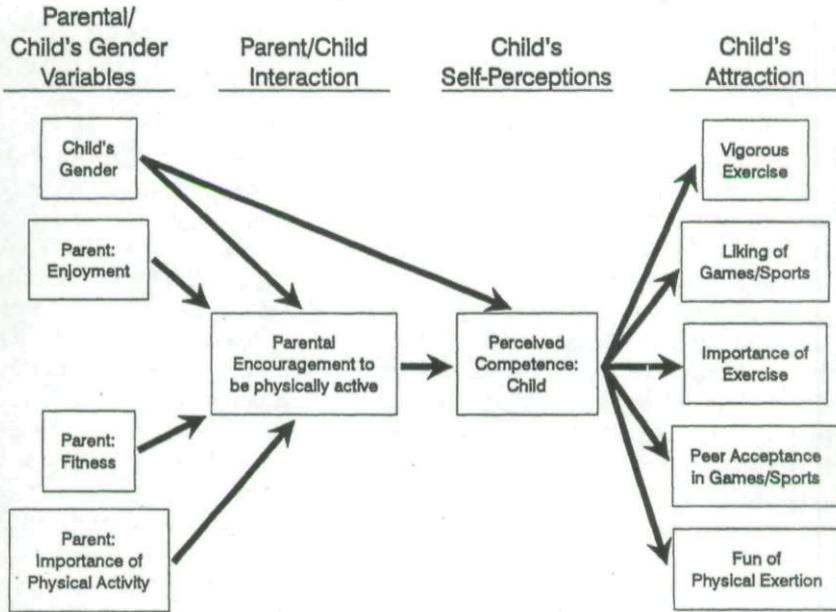


Figure 1 — Proposed model of the relationships among parental and child variables in this study.

Caucasian (approximately 95%) and of an upper middle-class socioeconomic background. They received physical education instruction from a specialist every day for 30 minutes. These children were fairly heavily involved in organized sport activities, with parents reporting that their children had engaged in an average of 1.6 ( $SD = .7$ ) organized sport activities during the preceding 12 months.

**Perceived Physical Competence.** An expanded version of Harter's (13) Perceived Competence Scale for Children was used for this study. Harter demonstrated reliability and validity for the measure for children in Grades 3 through 9. During pilot testing, items relating to perceived running and soccer competence loaded heavily with the other perceived competence items. Thus these two items were added to the seven items already contained in Harter's scale. The nine items were scored on a 6-point response format using Harter's structured-alternative approach in which the social desirability of responses is reduced by presenting the children with two choices and asking them to determine which child they are more like. Upon making this choice, the children must then decide whether that statement is "sort of true," "pretty true," or "really true" for them.

**Attraction to Physical Activity.** Since attraction to physical activity was an important individual difference variable in this study, a major goal was to identify the dimensions along which the individual differences emerged in children's attraction to physical activity. In the past, the Children's Attitudes Toward Physical Activity (CATPA) scale, developed by Simon and Smoll (21), has been used to assess differences in children's interest in physical activity. However,

there are certain limitations with the CATPA measure (3), such as the fact that the dimensions of interest in physical activity were developed from adult subjects, not children.

For this study, a new measure of children's attraction to physical activity was developed: the Children's Attraction to Physical Activity (CAPA) scale. Various dimensions of physical activity that children might regard as attractive or unattractive were initially identified through open-ended group discussions with third- and fourth-grade children in their physical education classes. These discussions generally began with the researcher asking the children to describe what they think of when they hear the words "physical activity," and then to report their feelings about what they do and do not like about their physical activity experiences. Through these discussions, the most frequently identified individual difference factors in attraction to physical activity related to liking/disliking of vigorous physical activity and exercise, competitive games and sports, peer interactions in games and sports, and differences in the perceived importance of the health benefits of physical activity. Children's self-reports about their attraction were thus linked to both the affective and cognitive dimensions of involvement.

Items were developed in a closed-choice format corresponding to the aspects of attraction identified by the children and presented in the structured-alternative format. A total of 34 questions were developed to reflect the general dimensions identified by the children and were pilot tested with five physical education classes. Those items on which mean scores were very high, or which showed low variability among subjects, were deleted. From this initial pool, 22 items were included in the final version of CAPA.

**Parental Encouragement.** Four items asked parents to report the extent to which they encouraged their children to be physically active. Sample questions included "In comparison to other parents, how much do you feel you encourage your child to be physically active?" and "In comparison to other parents, how frequently do you participate in physical activity or sports with your child?" A 5-point Likert scale was used, with scale endpoints being *less often than other parents* and *much more often than other parents*. This scale and all other parent measures were developed for this study, as no known valid and reliable measures of parental physical activity orientations were available.

**Parental Enjoyment of Physical Activity.** A three-item scale was used to assess parental enjoyment of physical activity. Parents were asked to report on how much they enjoyed vigorous physical activity in comparison to other parents. A 4-point Likert scale was used with endpoints ranging from *don't enjoy it at all* to *very enjoyable*.

**Parental Fitness.** The physical fitness level of parents was assessed through two items asking them to rate their physical condition and fitness relative to other parents. Five-point Likert scales were used with scale endpoints of *poor* and *excellent*.

**Importance of Physical Activity.** Parents were asked to describe how important physical activity and exercise are to them (relative to other parents) through two questions. Four-point Likert scales were used with scale endpoints of *less important to me than most* and *much more important to me than most*.

## **Procedures**

Children from nine physical education classes drawn from five elementary schools in the Pacific Northwest were the subjects of this study. Most of these children and their parents had been involved in a longitudinal research project involving children's physical fitness since the end of the child's second grade year, and thus were generally familiar with the measures and procedures used in this study.

The CAPA and Perceived Physical Competence scales were administered by the researcher and completed by children in their regular classrooms near the end of their fourth-grade year. Instructions were read aloud to the students. Parental consent was obtained in advance and each child also gave assent at the time of data collection. On the same day that children completed their questionnaires, they were given an envelope to take home to their parents that contained a cover letter describing the general nature of the study and the parental questionnaire. One parent was asked to complete the questionnaire and have the child return it to his or her physical education teacher.

Although the return rate of parental questionnaires was relatively high (about 70%), approximately 90 questionnaires were lost by the physical education teacher at the largest school in the study. Although data were available from 231 children, only 81 parental questionnaires were obtained. The data from these parents and their children were used in testing the proposed model. Of these 81 questionnaires, 62 (76.5%) were completed by the children's mothers and 19 (23.4%) by fathers.

## **Results**

### ***Factor Analysis and Descriptive Results***

A factor analysis was conducted on the CAPA questionnaire to determine whether a clear factor structure emerged representing various dimensions of children's attraction to physical activity. Analyses were conducted for all 231 children who completed questionnaires. A principal-component factor analysis was done with both orthogonal and oblique rotations. Each procedure extracted five factors with eigenvalues greater than 1.0. The factor structures of these analyses were generally similar; however, the outcome of the orthogonal procedure will be reported due to ease of interpretation. A minimal loading of .40 was established as a criterion value in the interpretation of individual items. Three items loaded more than .40 on two factors and were considered complex and not used in interpreting the factor structure.

The five factors that were identified represented conceptually distinct aspects of children's attraction to physical activity, and generally reflected the dimensions children had identified through open-ended discussions. The items comprising these factors are presented in Table 1. Factor 1 was labeled Vigorous Exercise and related to children's feelings about engaging in vigorous exercise. Factor 2 pertained to the fun experienced through playing games and sports and was identified as Liking of Games and Sports. The third factor, Importance of Exercise, related to children's cognitions about the importance of exercise to physical health. Factor 4, Peer Acceptance in Games and Sports, involved children's popularity with their peers during participation in games and sports. Factor

**Table 1**  
**Factor Analysis Results: Attraction to Physical Activity Scale**

Item	Factor weights				
	1	2	3	4	5
Like exercising a whole lot	.73	.07	.20	.04	.06
Feel really tired after exercise (R)*	.67	.09	.19	.09	.16
Like to burn a lot of energy by exercising	.64	.42	.07	.02	.15
Will feel good after exercise	.62	.14	.35	.07	.24
Have more fun playing games and sports	.11	.78	.00	.18	.06
Games and sports is favorite thing	.23	.69	.06	.31	.14
Like playing outdoor games	.03	.55	.25	.02	.14
Friends like playing games and sports	.08	.45	.11	-.11	.16
Exercise is most important thing for good health	.18	.15	.64	.02	.24
Think the more exercise I get, the better	.13	.30	.63	.03	.30
Think it is very important to always be in good shape	.34	-.07	.58	.21	.04
Get told by kids I'm not good at games and sports (R)	.14	.08	.03	.68	.05
Get nervous about playing games and sports (R)	.04	-.06	.15	.68	.35
Popular with others in games and sports	.03	.19	.13	.62	.07
Don't like playing games and sports very much	.25	.24	.14	.56	.05
Get teased by other kids about being overweight (R)	.43	-.19	.09	.56	-.03
Wish I could play sports more than I get to	.27	.32	.36	.46	-.00
Don't like getting sweaty (R)	.16	.17	.09	.05	.74
Don't like getting out of breath (R)	.39	.18	-.13	.04	.59
Get feelings hurt in games and sport (R)	-.15	.02	.28	.49	.54
Feel bad when I run hard (R)	.23	.09	.07	.18	.44
Eigenvalue	6.5	1.7	1.5	1.3	1.1
Percent variance explained	28	7	7	6	5

*Note.* A minimum loading of .40 was used as the criterion value in the interpretation of individual factors.

\*Items with (R) indicates reverse scoring was used.

5, Fun of Physical Exertion, related to children's like or dislike of certain exertional aspects of physical activity, such as getting sweaty or out of breath. Figure 2 gives examples of questions to which children responded in each of the five dimensions.

Unweighted means and standard deviations for boys and girls for each of these subscales, as well as for the perceived competence scale, are presented in Table 2. Overall, the high mean scores reflect high levels of attraction and perceived physical competence among these children. Correlations among all variables in the study indicated that multicollinearity ( $r \geq .70$ ) issues were not a concern.

### **Reliability of Measures**

The internal reliability of measures used in the study was assessed through Cronbach's (6) alpha statistic. An alpha value of .60 was established a priori as

Vigorous Physical Activity		
Some kids like exercising a whole lot	BUT	Other kids don't like exercising very much
Liking of Games and Sports		
Some kids like playing physical games and sports more than anything else	BUT	Other kids don't care much about playing physical games and sports
Importance of Physical Activity		
Some kids think that exercise is the most important thing for good health	BUT	Other kids think that other things are more important for good health than exercise
Peer Acceptance in Games and Sports		
Some kids get told by other kids that they aren't very good at games and sports	BUT	Other kids get told that they are good at games and sports
Fun of Physical Exertion		
Some kids don't like getting sweaty when they exercise	BUT	Other kids don't mind getting sweaty when they exercise

Figure 2 — Examples of questionnaire items on Children's Attraction to Physical Activity scale.

Table 2  
Means and Standard Deviations for Boys and Girls on Psychological Variables

Variable	Girls		Boys		Possible range
	M	SD	M	SD	
Perceived competence	36.14	6.24	41.27	5.27	9-54
Vigorous exercise	16.36	3.52	17.14	3.33	4-24
Liking of games/sports	14.83	5.70	16.93	4.25	4-24
Importance of exercise	13.52	2.52	13.68	2.44	3-18
Peer acceptance in games/sports	26.65	4.97	26.52	4.27	6-36
Fun of physical exertion	17.00	5.58	19.04	4.24	4-24

the lowest level of internal reliability acceptable. Scale reliabilities were as follows for the measures: perceived physical competence ( $\alpha = .78$ ); parental encouragement of child's physical activity ( $\alpha = .74$ ); parental enjoyment of physical activity ( $\alpha = .64$ ); parental fitness ( $\alpha = .62$ ); importance of physical activity to parent ( $\alpha = .64$ ). Each of the five factor subscales on the CAPA also

demonstrated acceptable internal reliability, with alpha levels ranging from .62 to .78.

### **Path Analysis**

In accordance with existing theory and research, a model was developed (Figure 1) that hypothesized interrelationships among socialization, psychological, and attraction to physical activity variables. These relationships were then tested through path analysis in which direct and indirect relationships among variables are specified and tested in accordance with the proposed model (18).

Four sets of variables were included in the model. The first set involved parental activity orientations as well as the child's gender. These variables are regarded as stable factors influencing children's physical activity socialization. The second step included parental encouragement of children's physical activity. It was anticipated that parents with more favorable physical activity orientations would provide greater encouragement, and that boys would receive more encouragement than girls. Children's perceived physical competence represented the third step in the model and was presumed to depend upon parental encouragement and gender. Finally, the last set of variables consisted of children's attraction to physical activity, which was represented by the weighted factor loadings of each of the five dimensions of attraction to physical activity. Perceived competence was the only variable anticipated to have a direct impact on the attraction to physical activity variables.

The initial step of the path analysis involved the regression of parental encouragement on the set of variables pertaining to parental physical activity orientations and the child's gender. Of the four predictor variables, it was found that parental enjoyment and the child's gender were significantly related to parental encouragement. Significant path coefficients are indicated in Figure 3. Overall, 32.2% of the variance in parental encouragement to be physically active was explained by gender and parental enjoyment. Parents of boys and parents who reported higher levels of physical activity enjoyment were more encouraging of their child's physical activity. Parents' self-reported fitness levels and the importance they placed on physical activity were variables not significantly related to encouragement of children's physical activity.

The second step of the path analysis examined predictors of children's perceived competence. As anticipated, both parental encouragement and gender were linked to perceived physical competence, and the combination of these two variables explained 17.3% of the variance in perceived competence. Higher levels of parental encouragement were associated with greater perceived physical competence, and males reported higher perceived physical competence than females did. Gender (.11) and parental enjoyment (.16) also exerted indirect effects on perceived competence through parental encouragement. Indirect effects are computed by multiplying the path coefficients linking two variables through one or more mediating variables.

The final step of the path analysis tested the relationships between perceived physical competence and each of the five dimensions of children's attraction to physical activity. In each case perceived competence was predictive of attraction. Perceived competence was linked to children's attraction to vigorous exercise (Factor 1) and explained 18.5% of the variance in this variable. It was significantly

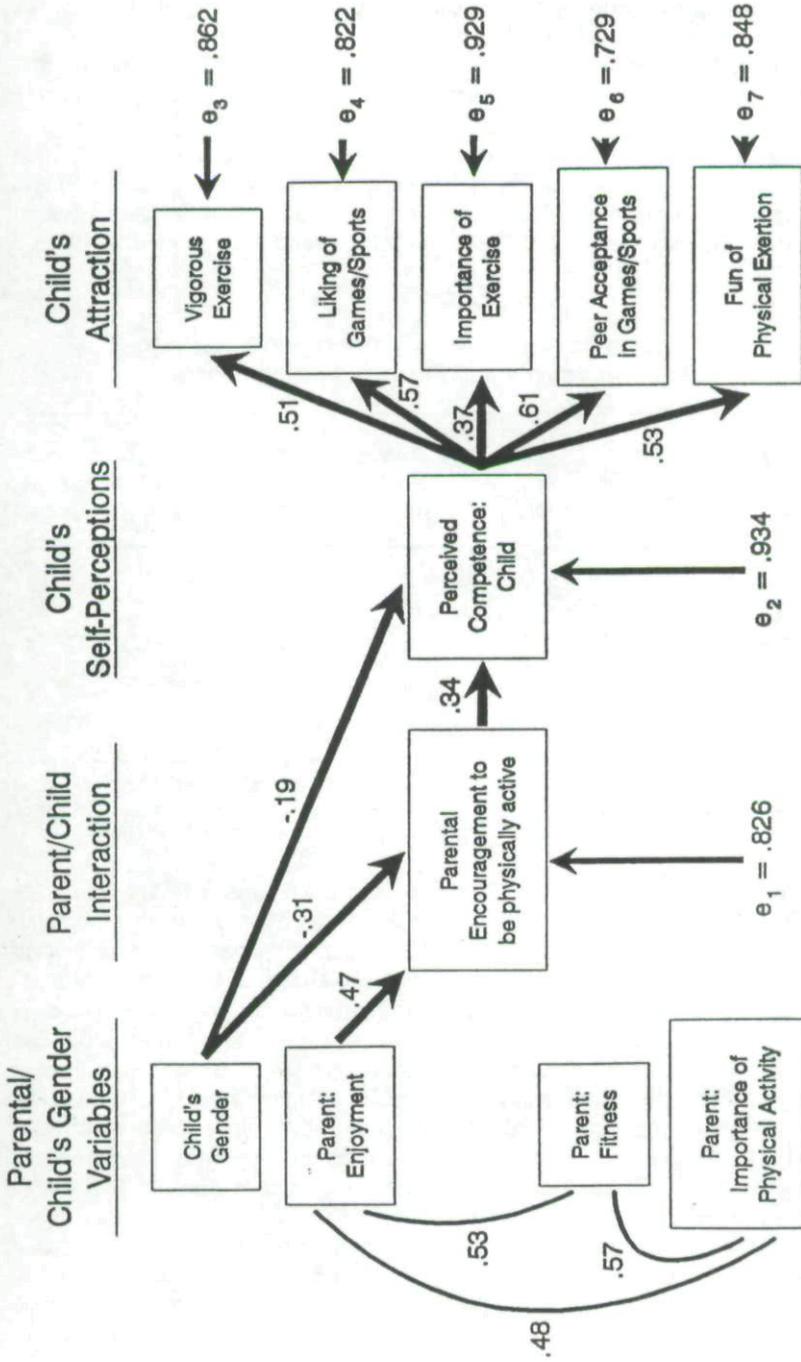


Figure 3 — Path analysis of the relationships among parental and child variables.

related to liking of games/sport (Factor 2), explaining 16.8% of the variance. Perceived competence explained 13.7% of the variance in children's beliefs about the importance of physical activity to health (Factor 3), 46.2% of the variance in peer acceptance in games and sports (Factor 4), and 41.0% of the variance in the perceived fun of physical exertion (Factor 5).

In addition to the direct effect of perceived competence on the five dimensions of attraction to physical activity, the variables of gender, parental enjoyment, and parental encouragement also exerted indirect effects upon the dimensions of attraction to physical activity. Indirect and total effects are reported in Table 3.

**Table 3**  
**Indirect and Total Effects on Children's Attraction to Physical Activity and Perceived Competence**

Attraction dimension/ Perceived comp.	Gender	Indirect effects		Total effects (direct + indirect)
		Parent enjoyment	Parent encourag.	
Vigorous exercise	.15	.08	.17	.91
Liking of games	.17	.09	.19	1.02
Import. of exercise	.11	.06	.13	.67
Peer acceptance	.18	.10	.21	1.10
Fun	.16	.08	.18	.95
Perceived competence	.11	.16	—	.80

## Discussion

The purpose of this study was to examine the influence of selected social and psychological variables upon children's attraction to physical activity. A conceptual model was developed involving four sets of factors: parental physical activity orientations and children's gender, parental socialization practices, children's self-perception characteristics, and children's attraction to physical activity.

An additional purpose of the study was to identify the nature of individual differences in children's attraction to physical activity. This was done through open-ended discussions with children and a follow-up with the CAPA questionnaire. Five dimensions of attraction were identified through factor analysis of the CAPA scale: (a) vigorous exercise, (b) games and sports, (c) health related aspects of exercise, (d) favorable peer relations in games and sports, and (e) fun of physical exertion.

The test of the path model generally supported hypothesized relationships among psychosocial factors and children's attraction to physical activity. As anticipated, parental activity orientations and the child's gender were each significantly related to the amount of encouragement children received to be physically active. More specifically, parents who expressed high levels of enjoyment of physical activity reported encouraging their children's physical activity more than did parents who experienced less enjoyment. Furthermore, boys received

more encouragement to be physically active than girls did. Parents' self-reported fitness levels and the importance of physical activity to parents were not significantly linked to parental encouragement characteristics.

Higher parental encouragement was linked to greater perceived competence for children. It seems that parents who express greater encouragement are more likely to provide opportunities for children to be physically active and to communicate higher expectancies of their child's ability in physical activity. Gender was also directly linked to children's conceptions of ability, with boys reporting higher perceived competence than girls. These findings are consistent with the Eccles and Harold (9) model of achievement choice in which children's motivation related cognitions, such as perceived competence, are shaped by parental interaction characteristics and gender.

Perceived physical competence was an extremely important variable in explaining differences in children's attraction to physical activity. It was a significant predictor of each of the five dimensions of attraction and explained a substantial amount of the variance in attraction. These findings support theoretical perspectives about the role of self-related competence perceptions in children's motivational processes (22). Since the impact of children's perceptions of competence upon their motivation to stay involved in physical activity has hardly been examined, these findings are particularly noteworthy. The variables of gender, parental enjoyment of physical activity, and parental encouragement of children's physical activity were also indirectly linked to each of the dimensions of attraction. Thus parental influences, children's gender, and children's self-perception characteristics all appear to be instrumental in shaping children's attraction to physical activity.

It should be noted that the parental questionnaires were completed primarily by mothers (77%). Since some literature suggests that fathers are more influential in shaping children's sport involvement (14), it could be argued that the extent of parental socialization influence might actually be underrepresented in this study. It is recommended that future research be devoted to examining the relative influence of mothers and fathers upon children's physical activity socialization.

The social and psychological dimensions of children's physical activity will be much more fully understood when researchers devote greater attention to the development of valid and reliable measures of those constructs central to current theory and research. The measure of children's attraction to physical activity (CAPA) used in this study differs considerably from other measures that have intended to measure children's attitudes toward physical activity. The CAPA scale focuses on children's feelings about their physical activity involvement along dimensions that children themselves have identified as being salient features of the physical activity experience. Physical exertion characteristics seem to be particularly important discriminators of children's attraction to physical activity, as exertion related characteristics comprised two of the factors on the CAPA scale. Furthermore, children differ considerably in their interest in involvement in physical activity according to their liking of games and sports, the social aspects of physical activity, and the perceived health benefits of physical activity. Further testing is needed among children from a broader range of age and socioeconomic backgrounds before the merits of CAPA for widespread use can be established.

In conclusion, the findings from this study suggest that social and psychological variables are strongly linked to children's attraction to physical activity. This study provides some insight into the means by which gender, parental socialization practices, and children's self-perception characteristics may affect children's physical activity behaviors. Given the health related importance of physical activity during childhood, continued research attention needs to be focused upon the social and psychological correlates of children's physical activity.

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