

## Psychosocial correlates of physical activity in 14-year old boys and girls

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**Psychosocial Correlates of Physical Activity in 14 Year Old Boys and Girls:** *The physical activity assessment was accomplished using self-report of activity level on a series of 19 activity items (Reynolds et al., 1990), with three spaces for "other" activities. The scale was created to obtain an aggregate measure of the physical activity engaged in on a weekly basis. Assessment of psychosocial agents basis of the physical activity determinants literature, the survey was designed to assess variables from multiple domains that are believed to influence physical activity behaviours (Sallis et al., 1992). Participants for this study included 203 adolescents (98 males and 105 females). The age varied from 14 years old boys (N=98; mean age 14.1±0.2) and 14 years old girls (N=105; mean age 14.0±0.4). Level of physical activity at the first measurement was statistically controlled by forcing it into each model. For boys, only friends' attitude emerged as a determinant of physical activity,  $F(1, 100) = 6.72, P = 0.001$ , accounted for 11% of the variance. Longitudinal regression model – Girls, two variables entered the equation: friends' attitude accounted for 6% of the variance,  $F(2, 95) = 3.85, P = 0.04$ . Enjoyment of physical activity accounted for 4% of the variance,  $F(2, 95) = 2.15, P = 0.11$ . Together these variables accounted for 10% of the variance in the criterion.*

**Key words:** psychosocial correlates, physical activity, psychosocial agents, physical activity behaviours.

### INTRODUCTION

In recent years, developments in public health physical activity promotion have shifted from changing individual knowledge, attitudes and skills, to changing social and physical environmental factors (Spence & Lee, 2003). Significant correlates of youth physical activity have been identified in multiple domains, including demographic, psychological, biological, social and family, and physical environment (Sallis et al., 2000; Gustafson & Rhodes, 2006; McMinn et al., 2008). In the present study we were primarily interested in processes occurring at a micro system level. Microsystem is the most proximal level of human ecology, defined as the patterned activities, roles, and interpersonal relations personally experienced in a setting (Bronfenbrenner & Morris, 1998). [5,7,8,10, 11]Microsystems include peer group and family influences, whereas public policy, governments, and economic system are considered to be more distal influences. Variables and measures are rarely comparable across studies, so it has been impossible to compare the strength of correlates across ages. Most previous samples had limited diversity of socio-economical status and few studies have examined variables related to peer and other social influences or to physical environmental variables (Kantomaa et al., 2007).[1, 2, 3, 4, 5, 6, 7, 8, 9]

In summary, the purpose of this study was to examine associations of multiple variables with physical activity in the longitudinal study of young people.

### EXPOSITION

#### Methods of work

Participants for this study included 203 adolescents (98 males and 105 females) and participation in the study was voluntary. Participants in the longitudinal study were followed up when they were grades 8 at the beginning of the program at the first of the annual measurement. The age varied from 14 years old boys (N=98; mean age 14.1±0.2) and 14 years old girls (N=105; mean age 14.0±0.4).

#### Assessment of physical activity

The physical activity assessment was accomplished using self-report of activity level on a series of 19 activity items (Reynolds et al., 1990), with three spaces for "other" activities. The scale was created to obtain an aggregate measure of the physical activity engaged in on a weekly basis. Each level of the scale was assigned a weight as follows: ½

for "1-3 times a month," 2 for "1-2 times a week," 4 for "3-5 times a week," 6 for "Almost every day," and 7 for "Every day."

#### Assessment of psychosocial agents

On the basis of the physical activity determinants literature, the survey was designed to assess variables from multiple domains that are believed to influence physical activity behaviors (Sallis et al., 1992). A test-retest reliability of this questionnaire was conducted and is described below (Table 1).

## RESULTS AND DISCUSSION

Differences between the first and the second measurement:

Dependent *t* test comparisons were conducted separately for boys and girls on the independent variables to assess changes that may have occurred. Dependent *t* test showed (Table 1) that for boys, statistically significant differences were obtained on three variables. Body satisfaction  $t(1, 101) = 3.69$ ,  $P = 0.05$ , parent paid fee  $t(1, 101) = 3.64$ ,  $P = 0.05$  were reported significant lower levels and higher levels of mother's attitude  $t(1, 101) = 9.53$ ,  $P = 0.0001$  from the first to the second measurement. Girls reported significant lower levels of coaches attitude  $t(1, 97) = 3.52$ ,  $P = 0.05$ , parent paid fee  $t(1, 97) = 5.88$ ,  $P = 0.001$ , brother's/sister's attitude  $t(1, 97) = 3.60$ ,  $P = 0.05$  and higher levels enjoyment of physical activity  $t(1, 97) = 7.68$ ,  $P = 0.001$  and convenient facilities  $t(1, 97) = 12.6$ ,  $P = 0.0001$  from the first to the second measurement.

**Table 1**  
Means, Standard Deviations, Test-retest, and Score Ranges for Parent and Psychosocial Constructs and Self-Reported MVPA

Boys (n=98)					Girls (n=105)				Range	Test-retest	
Age	14		15		14		15			Boys	Girls
Variables	M	SD	M	SD	M	SD	M	S D			
Self-reported MVPA	10.8	3.52	11.43	5.79	10.35	8.64	10.56	6.24	4-16	.87	.91
<b>Psychological variables</b>											
Enjoyment of PA	1.48	.50	1.43	.69	1.59	.50	1.13	.38	1-3	.89	.91
Enjoyment of PE	2.20	.71	2.12	.57	1.64	.59	1.92	.65	1-3	.81	.88
Use Afternoon time	1.74	.70	1.77	.80	1.81	.99	1.79	.85	1-3	.92	.89
Time barriers	2.19	.60	2.22	.54	1.91	.67	2.07	.71	1-3	.87	.79
Body satisfaction	1.44	.61	1.68	.67	1.62	.70	1.54	.60	1-3	.86	.83
Grade point average	3.73	.79	3.66	.85	4.02	.55	4.27	.59	1-3	.79	.82
<b>Social variables</b>											
Father's attitude	1.16	.34	1.13	.32	1.44	.98	1.34	.42	1-3	.96	.92
Mother's attitude	1.60	.49	1.09	.29	1.17	.36	1.12	.29	1-3	.77	.74
Brother's/Sister's attitude	1.26	.60	1.28	.47	1.35	.48	1.59	.66	1-3	.78	.84
Friends' attitude	1.63	.86	1.45	.50	1.38	.72	1.27	.68	1-3	.79	.77
Coaches' attitude	1.40	.77	1.41	.69	1.07	.46	1.29	.67	1-3	.82	.88
Parent paid fee	1.62	.84	1.81	.80	1.83	.83	2.22	.71	1-3	.87	.94
Father's PA	1.83	.94	1.95	.96	1.33	.49	1.50	.56	1-4	.78	.85
Mother's PA	1.56	.50	1.71	.93	1.25	.56	1.33	.58	1-4	.89	.93
Transport to School	2.53	.80	2.61	1.07	2.53	1.03	2.72	.81	1-4	.79	.76

#### Longitudinal regression model - Boys

Regression analyses were conducted in order to determine the extent to which adolescent's exercise could be predicted from ecological model variables gathered at the second measurement. Level of physical activity at the first measurement was statistically controlled by forcing it into each model first. For boys, only friends' attitude emerged as a determinant of physical activity,  $F(1, 100) = 6.72$ ,  $P = 0.001$ , accounted for 11% of the variance.

#### Longitudinal regression model - Girls

Two variables entered the equation. Friends' attitude accounted for 6% of the variance,  $F(2, 95) = 3.85$ ,  $P = 0.04$ . Enjoyment of physical activity accounted for 4% of the variance,  $F(2, 95) = 2.15$ ,  $P = 0.11$ . Together these variables accounted for 10% of the variance in the criterion.

The results of the present study showed that for boys and girls time barriers and friends' attitude appeared to be the most important predictors of physical activity levels. For boys, additional grade point average, home environment, body satisfaction, fees paid by parents, father's attitude and for girls, coaches' attitude, parents' level of physical activity, body satisfaction, use of afternoon time and enjoyment of physical activity, also appeared to be important predictors of physical activity. Essentially, one of the most important considerations is an adolescent's friends' attitude. It has been demonstrated previously that most children are first attracted to sport because their friends are involved. The chance to spend time with peers; make new friends; and escape from the adult world, school, or boredom all factor into the attraction of sport (Bauman et al., 2002). Peer influences for physical activity behaviour among adolescents may actually replace the substantial parental influences observed in younger children. In a study of adolescents, influences of the best friend were more highly associated with physical activity behaviour than influences of parents (Hohepa et al., 2007). Moreover, such peer influences may be stronger on boys than on girls as they move into adolescence.

### CONCLUSION

The results of the study showed that conclusion:

First, the present study illustrates that ecological model variables are important determinants of physical activity among adolescents.

Second, it appears that an adolescent's friend's attitude is an important determinant of physical activity.

Third, the longitudinal components of this study illustrate that the relative importance of determinants changes over time.

Fourth, by evaluating the longitudinal component separately for girls and boys, one may hypothesize that enjoyment of physical activity and friends attitude may be more important determinants of girls' physical activity levels.

Fifth, future studies would benefit from a larger sample size such that the researches may continue to make use of longitudinal designs and from using objective measures of physical activity that are better suited to capturing patterns in adolescent's levels of physical activity consistent with the developmental process.

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**The report has been reviewed.**