

FACTORS INFLUENCING PHYSICAL ACTIVITY PARTICIPATION AMONG SCHOOL GOING CHILDREN

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Abstract

Background

Although the health benefits of physical activity have been proven, many children and adolescents still do not meet the recommended guidelines for sufficient physical activity. The purpose of this investigation was thus to examine the levels of PA, and learners perception of support for PA from teachers, family and friends at an independent school in the Western Cape. Furthermore, the investigation aimed to examine the influence of social support on physical activity.

Method

A cross-sectional design using quantitative methods was used in this study, which included 100 learners in the senior phase of the school (i.e. grades 5 to 7). The data was obtained with a self administered questionnaire. The data was analyzed with the Statistical Package for the Social Sciences (SPSS) version 16.0. The Chi-square test was used to explore associations between nominal and numerical data. The T-test was used to determine statistical significance between groups (independent t-test) and within groups (paired sample t-test)

Results

Overall the sample responded positively when asked about support for physical activity from teachers. Furthermore, the study sample had a positive perception of both physical education (PE) and physical activity (PA) enjoyment. Boys participated in vigorous physical activity significantly more regularly than girls.

Conclusion

As children are spending a considerable time at school, teachers, friends and parents should be encouraged to be supportive of their participation in physical activity.

Key Words

Physical activity, social support, children, adolescents and patterns of participation.

Introduction

During the last decade, physical inactivity among school-going children has reached epidemic proportions on a global level (Bauer, Nelson, Boutelle & Neumark-Sztainer, 2008; Rukavina & Li 2007; Phillips, 2006b). Some researchers have cautioned that physical inactivity in children and adolescents will continue into adulthood (Tergerson

& King, 2002). The consequences of physical inactivity include obesity, coronary heart diseases, diabetes mellitus, hypertension, and a wide range of other chronic diseases of lifestyle that have put physical inactivity on the public health agenda for the last few decades (Katzmarzyk, Gledhil & Shephard, 2000; Lacar Soto & Riley, 2000).

Although the health benefits of physical activity (PA) have been proven, many children still do not meet the current guidelines for sufficient physical activity (Kahn, et al., 2008). The Centers for Disease Control and Prevention (CDC) in the United States (US) has guidelines which state that adolescents and children should accumulate at least 60 minutes of moderate physical activity on most, if not all the days of the week (Butcher, Sallis, Mayer & Woodruff, 2008). Physical activity levels among children and adolescents have indeed been proven to be low in most parts of the world. Various researchers have highlighted the fact that regular physical activity levels are low in the USA (Troost, Pate, Saunders, Ward, Dowda & Felton, 1997), Sweden (Sollerhed & Ejlertsson, 2006), Britain (Lowther, Mutrie, Loughlan & McFarlane, 1999) and Saudi Arabia (Hazzaa, 2002).

Physical inactivity as a major factor for childhood obesity has also been found to be true in Africa (World Health Organisation, 2003). The picture of low PA levels in developed countries has been shown to be no different than in developing countries (Phillips, 2006a; Phillips, 2006b). Over a decade ago Noakes and Lambert (1995) warned that the levels of habitual PA among urbanised South Africans were no better than those obtained in similarly urbanised populations in other countries.

There are however various factors that influence physical inactivity in children, including self-efficacy and social support. A study by Simons-Morton et al. (1997) confirmed that there is a relationship between children's self efficacy to PA and participation in PA. Factors influencing PA levels such as social support, particularly peer and family support, and increased physical activity enjoyment is well documented in the literature (Grieser, Neumar-Sztainer, Saksvig, Jung-Lee, Felton & Kubik, 2006). Research has also indicated that children and adolescents need their parents' and teachers' support and encouragement to enable them to participate in PA and other healthy behaviours (O'Dea, 2003).

Children spend approximately 6 hours per day for nearly 40 weeks of the year at school. Thus, a number of researchers are in agreement that schools seem to be a logical setting for the

promotion of PA (Bauman et al., 2002; US Department of Health and Human Services, 2000). Furthermore, Haerens, Bourdeaudhuij, Maes, Cardon and Deforche (2007) argued that schools provide opportunities to promote PA through health or physical education classes. The purpose of this investigation was thus to examine the levels of PA, and learners perception of support for PA from teachers, family and friends and the influence of this support on physical activity.

Methods

A quantitative approach using a cross-sectional design was used in this study. The study was carried out at an urban independent Catholic school in the Metropole North Education Management and Development Centre (EMDC) of the Western Cape Education Department. It is situated in a middle- to upper-income residential area. The population of the study included all the learners in the senior phase of the school (i.e. grades 5 to 7). A final number of 100 learners consented and had parental consent to participate in the study. The data was obtained with a self administered questionnaire, which consisted of 5 sections. The first section of the questionnaire requested demographic information such as gender, age, head of the household and number of siblings in the house.

The second to fourth sections assessed perceived support from teachers, family and friends regarding PA; and physical education and PA enjoyment. The scales used to assess this were taken from the Physical Education Program Improvement and Self-study (NASPE, 1998). The scales included 6 items on a 5-point Likert-type scale ranging from 1 (disagree a lot) to 5 (agree a lot). All these scales have been shown to be reliable for the children and adolescent group (Birnbbaum et al; 2005).

The fifth section assessed the levels of PA using the Modifiable Adolescent Physical Activity Questionnaire (MAPAQ). Learners were requested to indicate how many days during the week preceding the study they had participated in vigorous and moderate activities for at least 20 minutes. Participation in team sports during the past 12 months was also requested. Respondents were also asked to indicate the number of hours they watched television, and played computer

games. The MAPAQ was deemed reliable and valid for this age group with Kappas ranging from 0.54 to 0.87 (Aaron, Kriska, Cauley, Metz & LaPorte, 1995).

Permission and ethical clearance was obtained from the Senate Research Grants and Study Leave Committee and the Senate Higher Degrees Committee of the University of the Western Cape, as well as the school principal. In addition, permission was then sought from the parents and learners involved. The research instrument was administered by the researcher to the learners with parental consent. The data was collected by the researcher and a trained research assistant in the second semester of the 2008 academic year.

Data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 16.0. Descriptive statistics were employed to summarize the demographic data, which is presented using frequency tables and expressed as percentages, means and standard deviations. The Chi-square test was used to explore associations between nominal and numerical data. The T-test was used to determine statistical significance between groups (independent t-test) and within groups (paired sample t-test) with Alpha level set at $p < 0.05$. Prevalence tables were used to illustrate categorical data.

Results

Six classes enrolled for the 2008 academic year were conveniently selected to participate in the study. Of these, one hundred had signed consent and parental consent indicating a response rate of 64.1%. The study sample consisted of 50% male and 50% female learners.

Factors affecting PA were measured in the school environment. Overall the sample responded positively when asked about support for physical activity from teachers. In this item the mean score was lower than the midpoint (neutral) indicating a more positive perception of support from teachers. The sample indicated a negative perception of support for physical activity from boys (mean=7.74) and a positive perception of support for physical

activity from girls (mean=3.24). Furthermore the study sample had a positive perception of both physical education (PE) and physical activity (PA) enjoyment. In these items the mean score was higher for PE enjoyment and lower for PA enjoyment than the mean scores as illustrated in Table 1.

The results in Table 2 indicate that boys (3.61) participated in vigorous physical activity (VPA) on significantly more days than girls (2.72) per week. No significant difference between girls and boys for moderate physical activity (MPA) were found.

Discussion

Physical inactivity has become a major public health concern contributing to the non-communicable epidemic. This study highlights that school going learners are not meeting the required amount of physical activity to gain health benefits. The study sample reported participation in vigorous and moderate physical activity for fewer than half (3.5 days) of the week while guidelines are clearly stating vigorous or moderate PA on at least five days per week to be beneficial. This is of great concern as studies have shown that levels of PA tend to decline with age (Khan et al, 2008) and the mean age of this sample was 11.54 years. To add to this dilemma, studies have shown that the decline in PA appeared to be the greatest between the ages of 13 and 18 (Khan et al, 2008).

The boys in this study reported significantly more days of vigorous activity than girls. A number of studies have demonstrated similar gender differences in PA (Kahn et al, 2008). Researchers worldwide have expressed concern regarding adolescent girls not meeting the recommended amount of physical activity, and other studies have also shown the decline of physical activity by age to be more profound for girls (Caspersen, Periera & Curran, 2000; Sallis, Prochaska & Taylor, 2000). The findings of this study highlight these concerns and have implications for physical activity intervention programs. These interventions need to pay special attention to the reasons for the lower levels of physical activity among girls.

Table 1. Learners perceived social support for physical activity

Scale	Boys	Girls
Perceived School Climate for PA		
Support from teachers*#	5.28 (1.84)	4.38 (1.35)
1. In my school, PE teachers act like they think it is more important for boys to be physically active than girls		
2. In my school, most other teachers act like they think it is more important for boys to be physically active than girls		
Support from boys*	7.33(2.55)	8.15 (2.87)
1. In my school, boys make rude comments around girls who are being physically active		
2. In my school, being physically active around boys makes me uncomfortable		
3. In my school, boys stare too much at girls who are being physically active		
Support from other girls*	3.3 (1.10)	3.18 (0.91)
In my school, most girls think it is important to be physically active		
PE enjoyment#	4.77 (0.55)	4.26 (1.17)
1. I enjoy PE		
PA enjoyment*	11.69 (4.63)	11.78 (4.48)
When I am active . . .		
1. I feel bored		
2. I dislike it		
3. It's no fun at all		
4. It makes me depressed		
5. It frustrates me		
6. It's not at all interesting		
7. I feel as though I would rather be doing something else		
Social support (friends)#	11.10 (3.06)	8.22 (3.07)
During a typical week, how often . . .		
1. Do your friends encourage you to do physical activities or play sports?		
2. Do your friends do physical activity or play sports with you?		
3. Do your friends tell you that you are doing well at physical activities or sports?		
Social support (family)#	16.83(4.37)	14.02 (4.34)
During a typical week, how often has a member of your household (eg, your father,mother, brother, sister, grandparent, or other relative) . . .		
1. Encouraged you to do physical activities or play sports?		
2. Done a physical activity or played sports with you?		
3. Provided transportation to a place where you can do physical activities or play sports?		
4. Watched you participate in physical activities or sports?		
5. Told you that you are doing well in physical activities or sports?		

*Items were reversed scored so that a higher score corresponds with a more positive perception.

#Indicates significance

Table 2: Physical activity participation by gender (Mean number of sessions per week, SD)

Variable	Boys (n=50)	Girls (n=50)
VPA*	3.61(1.95)	2.72 (1.58)
MPA	3.29 (2.11)	3.00 (2.03)
Team sport per year	2.65 (1.56)	2.08 (1.20)

*indicates significance

Overall, the mean number of sessions of vigorous physical activity increased with the frequency of family and friends social support. All bivariate correlations between the family and friends social support variables and vigorous physical activity were positive and statistically significant ($p < 0.01$) as highlighted in table 3.

Table 3: Bivariate correlations of family and friends social support variables with days moderate and vigorous activity

Variable	Vigorous PA	Moderate PA
Family Participation ^a	0.397**	0.257*
Family Encouragement ^b	0.398**	0.203*
Friend Participation ^a	0.308**	0.286**
Friend Encouragement ^b	0.380**	0.145
Family Transportation ^c	0.296**	0.249*

a Family/Friend participation: frequency that family or friends did physical activities with student during typical week based on 5-point scale from never to everyday.

b Family/Friend encouragement : frequency that family or friends encourage students to be physically active during typical week based on 5-point scale from never to everyday.

c Family transportation: frequency that family provided transportation to where they can participate in physical activity in a typical week based on 5-point scale from never to everyday.

* $p < 0.05$, ** $p < 0.01$

Perceived support for PA examined in the study included support for PA within the school environment (i.e. from teachers, boys and girls), enjoyment of PA and PE, and social support for PA. Boys perceived significantly higher levels of support from parents, friends and family, and higher levels of PE enjoyment than girls. This perception of additional support could be a reason for the higher levels of physical activity among boys than girls, as research has indicated that individual, parental and environmental factors do play a role in adolescent physical activity levels. Furthermore, research has also indicated that children's peers influence their choice to participate in physical activity. Hoehpa et al. (2006) identified this in their study among high school girls and found that "peers exhibiting a reciprocal friendship demonstrated a stronger correlation in activity behaviors compared to students in non-reciprocal friendships".

Other researchers have also highlighted the importance of parental involvement in the promotion of physical activity for their children (Terguson & King, 2002). These authors further highlighted that parents must be made aware of their children's levels of physical activity to be supportive in their children's desire to be physically active. Khan et al. (2008) alerted to the fact that parental modeling through their attitudes towards and their beliefs about PA and encouragement to be physically active will influence children's levels of physical activity. Special attention thus needs to be paid to the perceived lack of support from parents for girls to participate in physical activity.

Adkins et al. (2004) study found that regardless of the type of support provided, girls who had high levels of support from at least one parent were more likely to report being highly physically active.

This is in agreement with the findings of the present study that found a positive correlation between support from family for physical activity and the levels of both moderate and vigorous levels of physical activity.

Conclusion

As children are spending a lot of their time at school, teachers and friends should be encouraged to be supportive of their physical activity. This support for physical activity should also be followed through by parents and special attention needs to be paid to girls.

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