GENDER DIFFERENCES IN ELEMENTARY SCHOOL CHILDREN IN PERCEIVED ATHLETIC COMPETENCE, BODY ATTRACTIVENESS, ATTITUDES TOWARDS EXERCISE AND PARTICIPATION IN PHYSICAL ACTIVITY

Spiridon Kamtsios
University of Ioannina, Greece
spiroskam@gmail.com

Abstract

The purpose of the study was to examine gender differences in elementary school children’s attitudes and intentions towards exercise, in their perceived athletic competence and body attractiveness and in their participation in vigorous, moderate and mild physical activity. 775 children (362 boys and 413 girls), attending fifth and sixth year of elementary school, participated in the study. The study was held through questionnaires and all scales had high levels of internal consistency. Independent samples t-test and chi-square tests were used for the statistical analyses. The results indicated that boys had higher scores in exercise intentions than girls and higher scores in perceived athletic competence, in perceived body attractiveness and in physical activity levels. The results demonstrate that physical education programs should encourage participation for both boys and girls and could influence their long term exercise behaviors. Physical educators should pay attention to gender differences and should provide involvement, enjoyment and success for both boys and girls.

Key words: attitudes, physical education, gender differences, body attractiveness, physical activity

Introduction

Regular physical activity is associated with enhanced health and reduced risk of all cause mortality (Blair, Kohl, Barlow, Paffenbarger, Gibbons, & Macera, 1995). Regular physical activity improves aerobic capacity, muscular strength, body agility and coordination, and metabolic functioning, exemplified by improvements in bone density, lipid profiles, insulin levels, and immune function (U.S. Department of Health and Human Services, 1996). Those who are physically active have a reduced risk of developing cardiovascular disease (Wannamethee & Shaper, 2001), ischemic stroke (Hu, Stampfer, & Colditz, 2000), non–insulin-dependent (type 2) diabetes (Fulton-Kehoe, Hamman, Baxter, & Marshall, 2001), colon cancers (Brownson, Chang, Davis, & Smith, 1991), osteoporosis (Rubin, Schirduan, Gendreau, Sarfarazi, Mendola, & Dalsky, 1993), depression (Fox, 1999) and fall-related injuries (Jaglal, Kreiger, & Darlington, 1995).

Insufficient physical activity (PA) is becoming a major public health concern (Pangrazi, 2000). There is increasing evidence that PA during childhood may enhance health both in the short term and throughout later life (Goran, Reynolds, & Lindquist, 1999). It improves psychological health and immune status during childhood, enhances bone development, and affects precursors of various lifestyle diseases (Rocchini, 1999).

The U.S. Department of Health and Human Services (1996) and Sallis & Owen (1999) reported that physically active people live longer and have lower premature death rates than people who are physically inactive as inactivity is one of the primary reasons for losing body functions. Regular physical activity can improve health-related fitness components (e.g. lower blood pressures, lower body fat, higher levels of HDL-cholesterol) in children, especially for children with obesity, diabetes or heart disease (Sallis & Owen, 1999). For teenagers, regular physical activity has been linked to
improved strength, decreases in body fat, and building bone density (Bailey & Martin, 1994; U.S. DHHS, 1996).

However, while the positive effects of regular physical activity participation are well established in children and adolescents, there is evidence to demonstrate that young people in many developed nations do not participate in enough physical activity of the type and intensity associated with health benefits (Hagger, Chatzisarantis, Biddle, & Orbell, 2001). Research findings indicate that adolescents’ activity level decreases with age (Digelidis, Della, & Papaioannou, 2006) and that adolescents are choosing to opt out of school physical education programs once the subject becomes elective (Luke & Sinclair, 1991; Christodoulidis, Papaioannou, & Diggelidis, 2001; Min-hau & Allen, 2002). An additional concern is the indication that adolescents’ females are not as fit as males, that fewer females are participating in school physical activity, and that females are not encouraged to participate in physical activity to the same extent as males (Luke & Sinclair, 1991). Some other studies indicate that in an elementary school boys are typically more active than girls (Sallis, 1993). Boys and girls have also been found to engage in different types of activities (Sarkin, Mckenzie, Sakkis, 1997). In another survey girls reported being less good at vigorous activity than did boys in both fifth and eighth grades, girls reported significantly fewer hours of vigorous activity than did boys (Craig, Goldberg, & Dietz, 1996) while Mota, Santos, Guerra, Ribeiro & Duarte (2002), reported that in their research boys were significantly more engaged in moderate to vigorous physical activities than girls. Significant differences were also found in attitudes toward physical education by gender according to Min-hau & Allen (2002). Male students had more positive attitudes toward physical education than females, and reportedly by Craig, Goldberg & Dietz (1996), girls scored significantly lower on exercise intentions and hours of vigorous activity.

Attitudes play an important role in the promotion of regular involvement in physical activity. According to social cognitive theories, attitudes are important predictors of human behaviours (Ajzen, 1988). Attitudes represent people’s perceptions, beliefs, judgments and cognitions (Triandis, 1971). Attitudes can be altered through information, knowledge and experiences (Sallis, Hovel, Hofstetter, Faucher, Elder, Blanchard, Caspersen, Powell, & Chrestenson, 1989; Theodorakis, Goudas, & Kouthouris, 1992). Attitude toward exercise is a positive predictor of exercise behaviours (Theodorakis, 1994). Hence, the formation of positive attitudes toward exercise should be considered a major goal for physical education lesson for both boys and girls (Biddle, 1987).

Perceived body attractiveness also is connected to peoples’ exercise behaviour (Digelidis & Papaioannou, 1999). It can be reasonably assumed that students (boys and girls) who worry about their appearance feel uncomfortable in the physical education context and maybe this affects their participation in exercise. Perceived body attractiveness is an important element of physical self-perceptions (Fox & Corbin, 1989). The attractive body associated with the notion of fitness is confounded with physical appearance. Physical appearance has been consistently shown to be one of the most dominant aspects of self esteem throughout life and its potency may stretch well beyond the physical domain (Fox & Corbin, 1989). Also research has shown that perceived body attractiveness is connected to peoples’ exercise behaviors (Digelidis & Papaioannou, 1999).

The purpose of the study was to examine gender differences in students’ participation in strenuous, moderate and mild exercise, in their attitudes and intentions toward exercise, in their perceived athletic competence and perceived body attractiveness. It was hypothesized that, according to the literature, girls will score lower in their attitudes and intentions towards exercise, they will participate less in vigorous physical activity and girls were expected to report lower levels of perceived athletic competence and perceived body attractiveness than boys.

**Method**

**Participants**

Seven hundred seventy five children (362 boys and 413 girls), participated in this study, aged 11-12 years. All of them were living in sub-urban and urban areas of west-northwest Greece. 347 children were in the fifth year and 428 were in the sixth year of elementary school.
Measures
Students completed the following scales.

“Attitudes”. Students responded in four scales (good-bad, healthy-unhealthy, pleasant-unpleasant, useful-not useful), assessing their dispositions toward exercise over the upcoming 12 months. The responses were indicated on 7-point semantic differentiation scales (1=very bad, 2=bad, 3=rather bad, 4=neither good nor bad, 5=rather good, 6=good, 7=very good).

“Intentions”. Students responded to two questions assessing their intentions to exercise in the next 12 months. The questions were, I intend to…during the next 12 months (impossible=1, possible=7) and I am determined to…during the next 12 months (absolutely no=1, absolutely yes=7). The questionnaires assessing attitudes and intentions have been shown to be reliable and valid (Theodorakis, 1994; Papaioannou & Theodorakis, 1996).

“Perceived effort and enjoyment”. Two subscales of the intrinsic motivation inventory were used to measure students’ effort and enjoyment in the physical education class. The students responded to 10 items on a 5-point scale ranging from 1 (I absolutely disagree) to 5 (I absolutely agree). The validity of these scales in Greek physical education context has been consistent in the past (Papaioannou & Mcdonald, 1993).

“Self Perception”. The subscales “sport competence” and “attractive body” of Physical Self-Perception Profile (Fox & Corbin, 1989), were used to measure perceived athletic ability and perceived physical appearance, respectively. The competence scale consisted of six items indicating people performing well or not in sport. Children reported on a 5-point scale (exactly as I am=5, I am not at all like this=1). The attractive body scale included 6 items suggesting that the person has an attractive or an unattractive body. The students indicated their responses on a 5-point scale (certainly yes=5, certainly no=1). Sports Competence included the perceptions of sport and athletic ability, ability to learn sport skills, and confidence in the sports environment. Body attractiveness included the perceived attractiveness of figure or physique, ability to maintain an attractive body and confidence in appearance (Biddle & Armstrog, 1992).

“Physical Activity Levels”. The Leisure Time Exercise Questionnaire (LTEQ: Gobin & Shephard, 1985), were used. LTEQ is a simple questionnaire designed to assess leisure time physical activity over a 7-day period. The participants were asked to indicate the average number of times per week during their free time that they engage in strenuous, moderate and mild exercise for more than 15 minutes. The question is scored by multiplying the number of times per week that the subject indicates he/she has participated in physical activity against corresponding anticipated MET (measurement in exercise testing) value for strenuous (9 METS), moderate (5METS) and mild exercise (3METS). The sum of the three scores is considered the total score for the question (physical activity index).

“Students’ daily athletic habits”. Responders were asked about how often and how many times each week they “participated in sports, swimming or other physical activities, excluding mandatory physical education classes in school”, and about how often and how many times each week they participate in physical activity with their friends, for example “are you an athlete in an athletic club? Yes- No”, or “how many times per week are you training in an athletic club or with your friends?”

Procedure
The researcher visited the schools and administered the questionnaire in the classroom. The students were given verbal instructions with regard how to complete the questionnaire. After the opportunity for clarification and questions, they responded to the measures. Generally, the completion of the questionnaires required 15-20 min. The study was conducted with the permission of the Greek Ministry of Education and the children voluntarily chose to participate.
Data analyses

Means and standard deviations were calculated for characteristics of participants and attitudes, intentions, effort in physical education lesson, perceived athletic competence and perceived body attractiveness. Statistical significance of the difference between means was determined by the use of t-tests. Relationships between gender and daily habits were determined by the use of chi-square tests. The SPSS (version 11 for windows) statistical package was used, and significance was set at p<.05. Reliability analysis showed that all scales had an acceptable level of internal consistency. As is shown in Table 1, for all scales but one the reliability alpha coefficients were .67 or above.

Results

Means and standard deviations are presented in Table 1. The results indicated significant gender differences in the intentions towards exercise (t=2.887, p=.004), in the perceived athletic competence (t=2.515, p=.012), and in the perceived body attractiveness (t=3.160, p=.002). Gender differences also were found in vigorous physical activity levels (t=6.183, p=.000) and in the total score in Leisure Time Exercise Questionnaire (t=4.269, p=.000) (Table 2).

Table 1. Means, standard deviations and internal consistency for the scales assessing attitudes, intentions, effort in physical education lesson, perceived athletic competence and perceived body attractiveness

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
<th>t value</th>
<th>alpha reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes towards exercise</td>
<td>6.67 .38</td>
<td>6.63 .38</td>
<td>1.440</td>
<td>.67</td>
</tr>
<tr>
<td>Intentions towards exercise</td>
<td>6.48 .67</td>
<td>6.34 .72</td>
<td>2.887*</td>
<td>.86</td>
</tr>
<tr>
<td>Effort in P.E. lesson</td>
<td>3.39 .37</td>
<td>3.36 .36</td>
<td>.901</td>
<td>.68</td>
</tr>
<tr>
<td>Perceived athletic competence</td>
<td>3.87 .76</td>
<td>3.74 .67</td>
<td>2.515*</td>
<td>.70</td>
</tr>
<tr>
<td>Perceived body attractiveness</td>
<td>3.84 .91</td>
<td>3.62 1.01</td>
<td>3.160*</td>
<td>.89</td>
</tr>
</tbody>
</table>

*significantly different at the 0.05 level

Table 2. Means and standard deviations for the participation in vigorous, moderate and mild exercise

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
<th>t value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vigorous physical activity</td>
<td>28.74 15.89</td>
<td>21.94 14.69</td>
<td>6.183*</td>
<td>.000</td>
</tr>
<tr>
<td>Moderate physical activity</td>
<td>14.07 8.56</td>
<td>14.37 8.01</td>
<td>.496</td>
<td>.620</td>
</tr>
<tr>
<td>Mild physical activity</td>
<td>6.91 5.60</td>
<td>7.23 5.59</td>
<td>.778</td>
<td>.437</td>
</tr>
<tr>
<td>Total score in LTEQ</td>
<td>49.73 20.58</td>
<td>43.54 19.71</td>
<td>4.269*</td>
<td>.000</td>
</tr>
</tbody>
</table>

*significantly different at the 0.05 level

Chi-square tests revealed significant gender differences in the participation in organized athletic sports ($x^2_{(1)}=43.613$, p=.000). For example 61% of boys and only 37.3% of girls are members in an athletic club, gender differences in how many times per week they are participate in exercise and in physical activity in the athletic club ($x^2_{(7)}=52.827$, p=.000) (25.9% of boys and only 10.9% of girls participate in exercise three days a week), and gender differences in the participation in leisure time physical activity with their friends ($x^2_{(1)}=6.773$, p=.009) (Table 3).
Table 3. Results from \( x^2 \) test concerning daily athletic habits

<table>
<thead>
<tr>
<th></th>
<th>( x^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members in an athletic club</td>
<td>( x^2_{(1)} = 43.613^{**} )</td>
</tr>
<tr>
<td>Time of exercise in an athletic club</td>
<td>( x^2_{(7)} = 52.827^{**} )</td>
</tr>
<tr>
<td>Minutes of exercise in an athletic club</td>
<td>( x^2_{(5)} = 49.160^{**} )</td>
</tr>
<tr>
<td>Exercise in leisure time with friends</td>
<td>( x^2_{(1)} = 6.773^{*} )</td>
</tr>
<tr>
<td>Time of exercise in leisure time with friends</td>
<td>( x^2_{(7)} = 5.930^{*} )</td>
</tr>
</tbody>
</table>

*significantly different at the 0.05 level
**significantly different at the 0.001 level

Discussion

The purpose of the study was to examine gender differences concerning attitudes and intentions toward exercise, in perceived athletic competence and perceived body attractiveness and in physical activity levels. The results demonstrate that elementary school boys had more positive intentions towards exercise, and higher scores in perceived athletic competence and perceived body attractiveness (Table 1). Also, it was found that boys participated more in vigorous exercise than girls (Table 2).

The results are in line with previous researchers relatively to physical activity. Despite the fact that moderate to vigorous physical activity is known to provide multiple health benefits for young people (Sallis & Patrick, 1994) also it is well documented that boys spend more time than girls in higher intensity activity (Faucette, Sallis, Mckenzie, Alcaraz, Kolody, & Nugent, 1995; Sarkin, McKenzie, & Sallis, 1997; Rauasepp, & Pall, 1999). Rauasepp & Pall (1999) indicated that boys spent 16-25 more minutes per day on moderate to vigorous physical activity than the girls. Shephard, Jequier, Lavalee, LaBarre & Rajic (1980) reported that boys spend 20 more minutes per day in vigorous activity, than did girls. Aaron., Kriska, Dearwater., Anderson, Olsen, Cauley & LaPorte (1993) found that males reported 22.5 hours per week of leisure time physical activity compared to 6.6 hours for females, and that males were 2.1 times more likely to be classified as being vigorously active (>6 days of hard exercise in past 2 weeks) than females. Similar findings cited by Ridboch, Andersen, Webberkopp, Harro M, Klasson-Heggebo, Sarbinha, Cooper & Ekelund (2004), who were confirmed significant gender differences in physical activity, with boys be more active than active than girls. They also found gender differences in time spent in activity, with boys be considerably more active than girls.

Also, the "National Diet and Nutrition Survey (2000)", reported that 70% of boys aged 7-11 years, and 44% of boys aged 15-18 years, achieved 60 min of moderate activity per day. Equivalent figures for girls were 49% and 31%. The likely explanation for this discrepancy is that moderate activity tends to be more sporadic, non planned and therefore less memorable and quantifiable, especially for girls, whereas Cooper, Andersen, Webberkopp & Page (2005), indicate that the reasons for these gender differences may reflect the activities that boys participate in during free time, such as football and chasing games.

Compared with boys, girls scored significantly lower on intent towards exercise, on perceived athletic competence and on perceived body attractiveness. Previous studies have shown that perceived athletic and physical competence is positively related to physical activity and boys have higher perceived physical competence than girls (Hagger, Asci, & Lindwall, 2004) and higher intentions towards exercise than girls (Craig, Goldberg, & Dietz, 1996). Duncan & Nakeeb (2004) in their study assessed the relationship between children’s body image and physical activity. Their results indicated no significant relationships between body image and physical activity, but boys had higher body esteem scores than girls. Also Fox and co-workers (1990) have shown that relatively with domains associated with athletic competence, body image and perceived body
attractiveness, American college age male students reported higher scores compared with females and this has been confirmed with children by Whitehead and Corbin (1988).

The results of the study demonstrate that elementary school boys have higher scores in some variables regarding generally their participation in physical activity. According to Min-Hau & Allen (2002), boys displayed more positive attitudes and intentions toward activities that were challenging and had an element of risk and girls were found to exhibit positive attitudes and intentions toward physical activities for social reasons. Boys generally reported more positive attitudes toward physical activity than girls. Tannehill & Zakrajsek (1993) noted that boys more frequently indicated they liked physical education because of their perceived excellence in the activities.

Despite the gender differences, physical education lesson can play an important role in the promotion of physical activity and the creation of positive attitudes and intentions towards exercise. Several studies have revealed that attitudes can be altered through practice and acquired knowledge (Theodorakis, Goudas, & Kouthouris, 1992). It is also know that attitudes can change following increased understanding (Ajzen, 1988). Physical educators, therefore, can play an important role in facilitating positive attitudes towards exercise, for both genders, through appropriate educational activities (Ferguson, Yesalis, Pomrehn & Kirkpatrick, 1989).

Physical education programs that develop students' belief in their own ability and that encourage participation, for both boys and girls, could influence their long term exercise behaviours and the amount of enjoyment they derive from that participation (Tannehill & Zakrajsek, 1993). Physical education curriculum and programs must be designed to reflect the needs and interests of all children to ensure that both boys and girls have opportunities to be successful in motor performance and thus develop a belief in their own ability. Physical education teachers need to make the connection between success in sports and individual fitness levels as a means of developing positive attitude and intention toward exercise. Curriculum changes may also be in order; instructional format may provide more success opportunities, and allowing learners to set their own goals on what is an appropriate challenge may be important (Tannehill & Zakrajsek, 1993).

When a child feels competent at vigorous or moderate, or mild activity, or if it is fun and exciting, then he/she is more likely to intend to engage in it. Enabling each child to participate in physical activities in which she/he may experience a sense of "being good at it" may offer an important way to increase each child's perceived behavioural control in relation to vigorous activity. Physical activities that are matched to the child's ability are more likely to produce a feeling of success than those that are at too high a skill level. For example, a child may not feel competent playing basketball because of body size or coordination, but may feel competent dancing or swimming (Craig, Goldberg, & Dietz, 1996). Fostering each child sense of competency and fun regarding physical activity and exercise may increase participation in physical activities and reduce gender differences in participation (Craig et al., 1996). For physical educators, this finding provides the suggestion that physical education curricula planners should pay attention to differences in gender of students (Tannehill & Zakrajsek, 1993). Physical education programs should provide involvement for all students. The teaching process and evaluation should reflect gender in the real teaching setting (Min hau & Allen, 2002).

Conclusion

Even if studies suggested that males are more active than females and they have different psychological characteristics that predict physical activity participation, physical education teachers should encourage both boys and girls for their participation in physical education lesson.

References


