THE EVALUATION OF PHYSICAL ACTIVITY LEVELS OF
STUDENTS PREPARING PUBLIC PERSONNEL
SELECTION EXAMINATION (PPSE)

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ABSTRACT

The population of the study conducted with the aim of evaluating the physical activity levels of the students consists of 90 volunteer students (n=64 female, n= 6 male) who are preparing preparing for the Public Personnel Selection Examination (PPSE) in a private classroom in Aydın. International Physical Activity Questionnaire (IPAQ) developed by Craig et al. (2003) translated and adapted into Turkish by Öztürk (2005) was used to determine the physical activity levels of students. The data obtained from the scale were found to be at the significance level of 0.05 in the SPSS 22.0 package program. Students’ weekly MET values (amount of energy spent during rest) was calculated also. Students were classified in terms of physical activity levels according to weekly MET values. The students were then compared in terms of physical activity levels according to different variables. It was found that there was no significant difference between the students in terms of age, body composition and the level of physical activity according to their relevant undergraduate program (p>0.05). Another finding revealed that there were statistically significant differences (p<0.05) among the students in terms of physical activity levels according to gender, and it was found that males were more active than females. It was found that significant amount of the students who were prepared for the PPSE in the study were found to have low inactive or physical activity level. It can be said that the intensity of time spending to study for PPSE decrease of the physical activity levels of the students. Recreational areas that can be provided by university administrations and local governments to the university campuses or to different parts of cities are expected to contribute to the increase in activity levels of university students.

Key words: Physical activity, MET, Public Personnel Selection Examination (PPSE)

INTRODUCTION

Physical activity is a body movement that occurs after muscular contraction and requires energy expenditure (Haas et al., 2017). According to another definition, physical activity is the movement of the body in order to consume energy (Bates, 2006). Regular physical activity is the most important factor which is effective in protecting health (Kostka et al., 2017). Regular physical activity reduces the risk of developing chronic diseases such as cardiovascular diseases, cancer and diabetes in adults (Sarah et al., 2007). Even moderate physical activities performed at least 5 days a week and only taking 30 minutes reduce cardiovascular problems (Aydın, 2006). It not only contributes to bone growth and muscle growth, but also reduces the level of anxiety and makes people feel better psychologically. Moreover, it significantly reduces the risk of obesity (Sarah et al., 2007).

Although modern-days have become easier due to technological developments in recent years, significant levels of decline in physical activity levels have emerged as a problem for public health. As a result, physical inactivity among individuals has become a public health problem. Inactive lifestyle is a common problem in developed countries (Haapala et al., 2017). This problem can be seen frequently in all age groups and occupational groups.

Major health problems such as arteriosclerosis, atherosclerosis or blockage of arterial vessels, weakening of the heart muscle, hardening and softening of the heart, loss of lung capacity, decrease of the lung capacity, weakening of the lung capacity, loss of appetite, loss of muscle mass, impaired appearance of muscles, musculoskeletal system problems, early bone erosion, waist and back pain, increase in LDL and cholesterol, rapid fatigue, muscle and bone problems, problems with carbohydrate absorption, tension in the nervous system, impaired digestive system, sleep disturbance, weakening of the immune system and stress are emerged and the public health is deteriorated accordingly. For this reason, determining the physical activity levels of individuals belonging to different age and occupational groups constituting a healthy society and healthy generations and encouragement of them to do physical activities is very important for public health. However, the physical activity levels of the students who are prepared for exams such as Higher Education Transfer Examination (HETE), Undergraduate Placement Examination (UPE) and Public Personnel...
Selection Examination (PPSE) after graduating from secondary education institutions or higher education institutions may decline due to the long hours in the classrooms and spending more time for studying. This situation causes individuals to pursue an inactive lifestyle. It is considered appropriate to evaluate the physical activity levels of the individuals prepared for PPSE and make the necessary suggestions to encourage physical activity. For this reason, the physical activity levels of the individuals preparing PPSE were evaluated in terms of various variables by using the questionnaire.

2. METHOD

2.1. Population

The sample of the study is composed of 90 volunteer students (n=64 female, n=26 male) preparing in PPSE in a private classroom in Aydın City Center.

Table 1. Descriptive statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>64</td>
<td>71.1</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>26</td>
<td>28.9</td>
</tr>
<tr>
<td>Age</td>
<td>17-20 age</td>
<td>11</td>
<td>12.2</td>
</tr>
<tr>
<td></td>
<td>21-24 age</td>
<td>69</td>
<td>76.7</td>
</tr>
<tr>
<td></td>
<td>25-28 age</td>
<td>10</td>
<td>11.1</td>
</tr>
<tr>
<td>Field</td>
<td>Science – Math</td>
<td>38</td>
<td>42.2</td>
</tr>
<tr>
<td></td>
<td>Verbal</td>
<td>35</td>
<td>38.9</td>
</tr>
<tr>
<td></td>
<td>Special ability</td>
<td>17</td>
<td>18.9</td>
</tr>
<tr>
<td>Activity level</td>
<td>Inactive</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>40</td>
<td>44.4</td>
</tr>
<tr>
<td></td>
<td>Active</td>
<td>47</td>
<td>52.2</td>
</tr>
<tr>
<td>Body composition</td>
<td>Weak</td>
<td>13</td>
<td>14.4</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
<td>64</td>
<td>71.1</td>
</tr>
<tr>
<td></td>
<td>Overweight</td>
<td>13</td>
<td>14.4</td>
</tr>
</tbody>
</table>

Table 1. shows the descriptive statistics of the students participating in the research in terms of gender, age, field of origin, degree of physical activity and composition of the body. The number of observations for all parameters is 90.

2.2. Data Collection Tools

2.2.1. International Physical Activity Questionnaire, IPAQ

The International Physical Activity Questionnaire (IPAQ) developed and analyzed for validity and reliability by Criag et al. (2003). IPAQ is designed to determine adult physical activity levels and inactivity states to determine the physical activity levels of the students. It is aimed to re-remember the activities in which the physical activity levels of the individuals were determined, carried out in the last 7 days by face to face interviews, phone interviews were used for the short form to re-remember the activities performed within the last 7 days. In 2000, validity and reliability studies of IPAQ were carried out in 12 countries and 14 centers by test and re-test method. The criterion validity of the long form of IPAQ was found to be \( r = 0.33 \); and the criterion validity of the short form was found to be \( r = 0.30 \) (Craig et al., 2003).

The validity and reliability studies of the scale in Turkey were made by Öztürk (2005) in a study involving 1097 volunteer university students (n = 721 females and n = 376 males) aged between 18-32 years. The structural validity, timeliness, criterion validity and test retest reliability of the short and long form of the IPAQ questionnaire were evaluated. IPAQ short and long forms are reproducible (\( r = 0.69 \) for short form, \( r = 0.64 \) for long form) and provide comparable data (\( r = 0.66 \). The criterion is determined to be \( r = 0.30 \) for the short form and is determined to be \( r = 0.29 \) for the long form. Turkish versions of IPAQ Therefore, IPAQ could be regarded as valid and reliable in determining the level of physical activity (Öztürk, 2005). In this study, a long form developed for face-to-face survey applications was used.

This scale provides information about moderate intensity activities such as sitting, walking, and time spent in intense activities. In the evaluation of all activities, the criterion is that each activity should be done at least 10 minutes at a time (Craig et al., 2003).

MET values / week (kcal / kg / week), kcal / week, MET / hour values can be calculated for individuals by using IPAQ. The frequency, intensity and duration of activity are used to calculate for MET values. Frequency refers to how many days a week activities are performed; duration, how much time (hours or minutes) is spent for each time for the activity performed; intensity determines the amount of MET spent per 1 hour for the activity. MET is a measure of the amount of oxygen consumed or consumed per kilogram unit. MET corresponds to the amount of oxygen consumed during rest (about 3.5 ml / kg / min) (Craig et al., 2003).

The following formula is used to calculate the MET min / week values:

\[
\text{MET/week} = \text{Frequency of activity X duration of activity X Intensity of activity (Karaca and Turnagöl, 2007)}.
\]

Obtained MET values were collected in 3 categories:
• Those with high physical activity level > 3000 MET·dk / hf
• Those with low physical activity levels > 600 - 3000 MET·dk / hf
• Inactive according to physical activity level < 600 MET·dk / hf (Craig et al., 2003).

2.3. Analysis of Data
The data were tested with the Kolmogorov-Smirnov Test for normal distribution. Independent Sample T Test was used for parametric tests to compare two independent groups, since the data showed normal distribution. Statistical analyzes were performed at the 95% confidence interval and 0.05 error level in the SPSS 22.0 package program.

3. FINDINGS

Table 2. Comparison of the level of physical activity of the students by gender

<table>
<thead>
<tr>
<th>Variables</th>
<th>Gender</th>
<th>N</th>
<th>X</th>
<th>Ss</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity level</td>
<td>Female</td>
<td>64</td>
<td>3477.27</td>
<td>3402.88</td>
<td>-1475.523</td>
<td>0.040*</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>26</td>
<td>4952.79</td>
<td>2855.33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p>0.05

When Table 2 is examined, it is seen that there is a significant difference between males and females in terms of physical activity level in favor of males (p> 0.05).

Table 3. Comparison of physical activity level according to age

<table>
<thead>
<tr>
<th>Variables</th>
<th>Age groups</th>
<th>N</th>
<th>X</th>
<th>Ss</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity level</td>
<td>17-20</td>
<td>11</td>
<td>4252.05</td>
<td>2360.54</td>
<td>0.129</td>
<td>0.879</td>
</tr>
<tr>
<td></td>
<td>21-24</td>
<td>69</td>
<td>3805.18</td>
<td>3546.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25-28</td>
<td>10</td>
<td>4198.75</td>
<td>2580.92</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is understood from Table 3 that there is no significant difference among the students in terms of the level of physical activity in terms of age.

Table 4. Comparison of physical activity level of students in terms of body composition

<table>
<thead>
<tr>
<th>Variables</th>
<th>Body composition</th>
<th>N</th>
<th>X</th>
<th>Ss</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity level</td>
<td>Weak</td>
<td>13</td>
<td>2560.19</td>
<td>1524.78</td>
<td>1.643</td>
<td>0.199</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
<td>64</td>
<td>3984.84</td>
<td>3543.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overweighted</td>
<td>13</td>
<td>4846.54</td>
<td>3151.73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to Table 4, there is no significant difference between the students in terms of body composition (p>0.05).

Table 5. Comparison of the level of physical activity according to their fields

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fields</th>
<th>N</th>
<th>X</th>
<th>Ss</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity level</td>
<td>Science-Math</td>
<td>38</td>
<td>3131.05</td>
<td>2072.38</td>
<td>3.062</td>
<td>0.052</td>
</tr>
<tr>
<td></td>
<td>Verbal</td>
<td>35</td>
<td>3986.93</td>
<td>4053.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Special ability</td>
<td>17</td>
<td>5458.53</td>
<td>3464.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Table 5, it is seen that there is not a significant difference between the students in terms of the level of physical activity according to their fields (p> 0.05).

4. DISCUSSION AND RESULTS
It was understood that the inactive or physical activity levels of approximately the half of the students who participated in the study conducted with the purpose of evaluating the physical activity levels of the them
prepared to PPSE (n=43; 47.7%), were found to be lower level. When the literature is examined, it can be seen that the results obtained in studies conducted by individuals working in different jobs and students of different age groups support this study in this regard. It was found that 17.1% of the teachers were not active, 63.9% of them had low physical activity level and only 19% of them had sufficient physical activity level in the study conducted by Şanlı (2008) in which the relationship between physical activity levels and age, gender, and body mass index (BMI) in teachers in different branches (n=286) was investigated. Arabacı and Çankaya (2007) conducted studies with 250 physical education teachers to determine the physical activity levels of physical education teachers.

It was observed that the physical education teachers who participated in the study had an average of 1380.16 min/h. In addition, 41.8% of physical education teachers were found to be inactive, 41.8% of them were active at low level and 16.8% of them were active. According to this finding in the study, the physical activity levels of the physical education teachers were low and the inactivity was prevailed among the physical education teachers. Arslan et al. (2003) have found that their level of physical activity is very low in the study of 232 university faculty members aged 28-64 with the aim of evaluating the relationship between physical activity levels and health problems of them. Genç et al. (2002) found that the activity level of 156 individuals (42.5%) in the last 1 month was low in the study conducted investigating the physical activity levels of the employees in the banks of Malatya city center (n= 367). In the study conducted to the first year high school students by Vaizoğlu et al., (2004); 50.4% of the females, 49.6% of the males had a mean of 47.32 as the weekly MET values and 26% of them were the sedentary students. The results of the study showed that the physical activity levels of the students were low. Suarez and Somers (2009) found that very few of the participants (10%) were active in the study with 380 students (n=213 females, n=167 males) aged 11-12 years and that the activity levels of students increased in the physical education class relative to other times Gidlow et al. (2008) compared the physical activity levels of 503 children (n= 253 females, n= 250 males) in the first and second grades in their remaining time at school and found that physical activity levels of students are lower on school days (especially in second grade students). Approximately half (47.4%) of the students who participated in the study had low physical activity level in the school and about one third (30%) had lower physical activity levels in the off-school leisure time.

Findings obtained in some studies in the literature have led to the conclusion that the individuals who constitute the population have high physical activity levels. The results obtained from these studies differ in the direction from the results obtained in this study. This difference is thought to be due to the fact that most of the students who participated in the research have spent a large part of the day studying at classrooms and at home by studying at the desk due to the preparations of PPSE. In addition, individuals participating in other activities can become active as a requirement of their profession. Professional activities are important factors affecting the activity levels of individuals. As a matter of fact, Pliavina (2007) developed physical tests for 42 military school students who are from the Latvian Ministry of Defense, aged from 18 to 27, with a senior academic capacity as 74%, and a total of 36 officers working in military security service that 10% of them having a senior academic capacity, to determine their physical activity levels and their physical fitness. In addition, a scale was used in the study to evaluate the individuals’ sports activities. After analyzing the statistics, it was found that the physical activity levels of the military school students were higher than the civil servants. Sokolowski et al. (2010) found that a large proportion of randomly selected 100 female students studying at the Physical Education Department of the Eugeniusz Plasecki University in Poland have higher MET values. In the study 33 (33%) of the students had MET values between 6001 and 8000 MET. It was found that only 11 (11%) of the students had a MET lower than 4000 and their physical activity levels were sufficient for health.

When the MET values of the students participating in this study were examined, it was understood that male students had higher physical activity levels than female students. The results obtained in studies in the literature are in parallel with this study. In addition, the intensity and type of activities of individuals show differences according to gender. As a matter of fact, Mc Kenzeni et al. (2010) found that male students’ participation in intense physical activities more than female students in the study in which 36995 children from 13 primary schools participated. Vaizoğlu et al. (2004) found that weekly energy expenditures of males were significantly higher than females (p<0.05) in the study aiming at determining the physical activity level of young people, having participants that 50.4% of them are females and 49.6% of them are males in the first year of high school. Kudaş et al. (2005) reported that boys were more active in both school and leisure time, this difference become more higher in the schooltime and the physical activity levels of female students are lower both in school and their leisure time in their study having 198 participants (n= 106 females, n=92 males) in 5th and 6th grade students aiming at determining their physical activity levels and eating habits. Jimmy et al. (2007) has reached the conclusion that males prefer to participate in more intense activities in the study 209 students participated in who were between 4-9 years, in 9-12 grades in the city of Nendaz, Switzerland, investigating the physical activity levels of them.

Karaca et al. (2009) have reached the conclusion that men spend more time in intense activities while walking activities are more likely preferred by women in the study in which 1027 university students participated to investigate physical activity levels of them; Akandere et al. (2008) found that women were less active at work than men in the study in which the physical activity levels of Kick Boxing coaches were evaluated. Karaca et al. (2009) stated that most of the women spent their time by housework or sitting in their homes. This is thought to be due to the fact that women spend more time at home.
In this study, it was understood that there was no significant difference between the students in terms of physical activity level according to their age. This is presumably due to the fact that the age range of students is not very widespread (17-28 years). Nevertheless, Yasunaga et al. (2008) found that the number of steps of female participants was inversely proportional to their age (<3 MET); the number of activities and steps in men is directly proportional to their age (>3 MET) in the study conducted to 95-participants (n= 54 female, n= 41 male) aged between 65-83 in which step counts are evaluated by the pedometer;

It was found that there was no significant difference in the level of physical activity according to body composition among the students participating in this research. This was thought to be due to the fact that most of the students (n=64; 71.1%) had normal body composition compared to BMI values. If the number of overweight and obese students in the sample of this study was higher, it is predicted that the number of students having low level of physical activity might increase. This preliminary study supports the study of Ross et al. (1998) in which they found that students who watch television for 4 hours or more in a day are more fatter than those who watch television less than 2 hours a day, and that BMI values are higher.

It is seen that the area where the graduate program of students did not affect the physical activity level of them. Although the MET values of students whose major departments accepting students with special ability exams were higher than the MET values of those graduated from science-math related and verbal fields (MET = 5458), there was no significant difference in terms of MET values among the students. The PPSE preparations especially decrease the activity levels of students graduated from science-math related (MET = 3131) and verbal (MET = 3986) branches.

A significant part of the students who were prepared for the PPSE in the study were found to have low inactive or physical activity level. It can be said that the intensity of the preparation process in PPSE caused the decrease of the physical activity levels of the students. Recreational areas that can be made by university administrations and local governments to university campuses or to different parts of cities are expected to contribute to the increase in activity levels of university students.

REFERENCES