Comparison of Physical Activity and Basic Movements of Female Students Aged 7-8 with Different Socio-Economic Status

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A B S T R A C T

The aim of this study was to compare the level of physical activity and basic movement of female students in Ahvaz aged 7-8 years with different economic and social backgrounds. This study was conducted descriptively and correlatively. The sample for this study included all female students aged 7-8 in the city of Ahvaz who enrolled in 2014. According to the formula, the sample was estimated to be 370 students, but for conservative measures 390 were chosen. For the sampling, areas with weak socio-economic status were determined with the help of Ahvaz Council of Educational Research. The tools used for this study were a questionnaire for determining socio-economic status[1], the physical activity questionnaire from Barbosa et al. (2007),Gross Motor Movement Development test (Oulrikh, 2000), a scale and height gauge. Data was analyzed using multivariate variance, one way ANOVA, Tukey tracking test and Pearson's correlation coefficient. The results showed significant difference in physical activity and base skills for each socio-economic class. Furthermore, the results showed that for movement skills in groups with weak/medium/strong socio-economic status (F=14.00, sig=0.000) and object control (F=36.07, sig=0.000) a significant difference exists. Also, the weak/medium/strong socio-economic classes showed significant difference in physical activity (sig=0.000). The results from this research showed that better socio-economic status can be effective in higher physical activity and better base skills.

Keywords: Base Skills, Physical Activity, Socio-Economic Status, Female.

INTRODUCTION

Physical activity is one of the affecting factors on motor skill growth and development. Since basic motor skills are as pre-factor for performing various features of physical activities; such it can be concluded that there is a relationship between Participation in physical activity and fundamental motor skills development[2]. Participation in physical activity is essential to promote the growth and development of physical, social, cognitive and emotional aspects of children[3]. Higher levels of physical activity in children are related with improving physical

fitness (either muscular and respiratory fitness or endurance) [4], increase in health and reduce body fat. In addition, children who participate in regular physical activity reduce symptoms of anxiety and depression deals and improve self-confidence and self-esteem[3]. However, children who do not have enough physical activity, the health improvement of them have become a global concern[5]. Recent findings estimate that only 40% of children in elementary schools participate in daily programs of physical outdoor activities, now moved[6]. Playing in School has a decisive role in providing opportunities for children to be physically active, so that they have enough equipment, personnel, facilities, and programs to promote their activities[7]. Break times can also play this role[8]. It was suggested that higher levels of basic motor skills provides more opportunities for children to participate in varied physical activities and games. In fact, children are more adept, choice higher levels of physical activity, while, children with lower levels of physical activity select fewer skills levels[9].

Among the other environmental factors can be pointed to the socio-economic status. Some authorities believe that the socio-economic status of parents and family condition and climate are the most important factor in the development of personality traits and characteristics and the development of motor skills in childhood and remains as the first effecter until the end life. It is also believed, children who live in families with low socioeconomic status, face with delaying in talking, walking and physical strengths compared to other peers[10]. Research in this issue suggests that students with low socioeconomic status have less physical activities and are fatter[11]. Agha Alinejad et al reported less size of waist-to-hip ratio and desirable physical fitness in students of high socio-economic areas, while students with low socioeconomic status are more significant active[12].

The moderator variables are as the concern in such studies. From the moderator variables in the relationship between physical activity and basic motor skills can be pointed to sex, weight, and height and body mass index. The relationship between basic motor skills competence and weight is well established for children in this way that basic motor skills are negatively correlated with weight[13] and body mass index[14]. A few studies in this field have controled these variables[15]. So, controlling of such moderator variables is the research problem of this study. Therefore, with regard to the above, the researcher intends to study the fundamental movement skills and physical activity for 7 - 8 year old school girls in Ahvaz (Iran) with different socio-economic status.

METHODOLOGY

The current study is an applied with descriptive-correlated design that was done in experimental method. The sample consisted of all primary school girls between 7 and 8 years old, of Ahvaz city (Iran) in 2014. According to statistics from the Ministry of Education in Ahvaz, number of 11,243 female students with 7-8 years old was enrolled on 2014 in primary schools of Ahvaz. In the present study,

the statistical population was 11,243 subjects. Sample for this study was estimated 370 subjects but for the conservative, number of 390 students was chosen as the sample. For sampling of areas with low, medium and high socioeconomic status, collaboration with the Council of Education Research and Training in Ahvaz, the areas were identified. In each of the areas, 130 students were selected to participate in the study.

In this study, a digital scale was used to measure weight; height gauge was used to measure height and socioeconomic status was assessed using a standard questionnaire to assess socioeconomic status. Psychometric properties of this questionnaire have been approved in the study of Ali Zadeh et al[16]. Daily physical activity, including daily activities during sleep, hygiene, food, meals, transportation to school and transportation tool, which were evaluated by questions 1 to 8 of the questionnaire and school activities including classroom time, sport course in school, optional activities including theater, song and exercise which were evaluated by questions 9 to 11 of the questionnaire and activities such as watching TV, playing computer games, the Internet, indoors exercise, listening to music, reading books, playing recreational body that were evaluated by question 12 part questionnaire[17]. The validity and reliability of the questionnaire are well defined in the study of Azerbaijani et al[1] and Ali Zadeh et al[16].

Basic patterns growth of Ulrich gross movements[18] of all samples were taken from all subjects. The test consists of two subtests of mobility and manipulation; each subtest is made up of 6 items. All subjects were assessed 2 times for detailed analysis skills and all stages of testes were recorded using the camera at a 45 degree angle. For skills scoring, the recorded films were analyzed by gross motor development check list and the scores were recorded for each subject.

Descriptive and inferential statistics were used to statistical analysis of obtained data. The descriptive statistical indicators and quantitative measures of central tendency and dispersion were used to draw diagrams and tables and inferential statistics was used to survey research hypotheses. Pearson's correlation coefficient, multivariate analysis of variance, and one way ANOVA and Tukey testes were used to investigate variants of a tracking test. Data analysis was performed using SPSS version 16 for windows. The value of $p < 0.05$ considered as significant level in all tests.

RESULTS

Table1. Relationship between activity level and mobility, parsons' coefficient

	Low	Moderate	High
Low	r=0.102, P=0.048	---	---
Moderate	---	r=0.179, P=0.008	---
High	---	---	r=0.299, P=0.000

As seen in table 2, there is significant relationship between physical activity and mobility of poor socioeconomic status group (r=0.102, p=0.048), between

physical activity and mobility of moderate status group (r=0.179, p=0.008) and between physical activity and mobility of high status group (r=0.299, p=0.000).

Table2. Relationship between activity level and object control, parsons' coefficient

	Low	Moderate	High
Low	r=0.09, P=0.057	---	---
Moderate	---	r=0.156, P=0.009	---
High	---	---	r=0.265., P=0.000

As shown in table 3, there is no significant relationship between physical activity and object control skill of poor socioeconomic status group (r=0.09, p=0.057). However, there is a significant relationship between physical activity and object control skill of moderate status group (r=0.156, p=0.009) and between physical activity and mobility of high status group (r=0.265, p=0.000).

Table3. Results of ANOVA test with repeated measurements

Factor	SS	df	MS	F	p	η^2
Mobility	13.22	2	6.66	14.00	0.000	0.630
Object control	15.47	2	7.74	36.07	0.000	0.737

Table 3 shows that there are significant differences in mobility skill between high, moderate and low socioeconomic status groups (F= 14.00, p= 0.000, η^2= 0.630). To determine the place of differences, tracking Tukey test was used and the results showed that, between mobility skill of low socioeconomic status group and high socioeconomic status group, there is a significant difference (p= 0.045). However, between moderate socioeconomic status with low socioeconomic status (P = 0.34) and high socioeconomic status (p= 0.19) any significant differences were not found.

Table 3 also shows that there are significant differences in object control skill between high, moderate and low socioeconomic status groups (F= 36.07, p= 0.000, η^2= 0.737). To determine the place of differences, tracking Test-Tukeywas used and the results showed that, between object control skill of low socioeconomic status group and high socioeconomic status group, there is a significant difference (p= 0.039). However, there were not significant differences between moderate socioeconomic status with low socioeconomic status (P= 0.39) and high socioeconomic status group (p= 0.15).

Table4. Results of one way ANOVA for comparing physical education between different socioeconomic statuses

Difference	SS	df	MS	F	p	η^2
Between	11.16	2	5.58			
Within	44.83	387	0.11	50.72	0.000	0.887
Total	56.00	389				

Data in table 6 shows that there are significant differences in physical activity between high, moderate and low socioeconomic status groups (F= 36.07, p= 0.000, η^2= 0.737). To determine the place of differences, tracking Test-Tukey was used and the results showed that, between physical activity of low socioeconomic status group and high socioeconomic status groups, there is a significant difference (p= 0.000). The results also showed that there are significant differences between moderate socioeconomic status with low socioeconomic status (P= 0.000) and high socioeconomic status group (p= 0.000).

CONCLUSION

In an overall view, results showed that there are significant association between the basic skills and physical activity of various socioeconomic statuses. The height, weight and body mass index were consistent in each socioeconomic class. Physical activity which examined almost unorganized in this study plays an important role in the development of fundamental movement patterns 6 to 7-year-old girls and is a significant predictor for the development of these patterns. This finding is consistent with the results of Cooley et al [19].

In the relationship between basic motor skills and physical activity, it is important to note that the correlation coefficient in mobility skills were greater than object control skills. The relationship of the performance of motor skills and physical activity can be important for children's health, especially in the prevention of obesity; children need physical activity and encourage physical activity to improve motor skills. Performing enough movement skills may be an important element in promoting active living in children. Findings have shown that relationship between physical activity and mobility skills is stronger than the relationship between physical activity and object control skills. Children who have a high level of mobility skills had experienced moderate to severe physical activity levels than who have poor handling skills[20], which is consistent with the finding of this study.

Other results of the study showed that physical activities in different socio-economic classes are significantly different. These results are consistent with previous studies[21, 22] which showed that in developed societies, obesity in children is related with low socio-economic status. This match is for this reason that the majority of people living in areas with high socio-economic status and the more affluent follow western life models. It seems that children with high socio-economic status have adequate nutrition and sports facilities as well as more money to go to the gym. They also follow Modeling of westerns and being thin is considered a value and tries to macerate them.

Another finding of the study showed that the fundamental movement patterns in children with different social-economic status are significantly different.

Tracking Tuky test showed that both object control and mobility skills in children with different social-economic status are also significantly different. These findings are rejected by Graf findings[23]. Ali Zadeh et al found that students with low socioeconomic status were in good condition in object control skills compared to students in middle and high socioeconomic status. They stated that, favorable body composition (body mass index and waist-to-hip ratio lower) are the reasons for students with low socioeconomic status[16]. Graf et al[23] in this regard stated that overweight and obesity in children is an obstacle for gross motor skills growth. The reason for the difference between studies may be due to intervention of the biological indicators where in the current study they were adjusted and controlled. So, differences between groups in our study can be other factors. However, Agha Alinejad et al found that students in zone 1 of Tehran (as a region with a strong socio-economic status) have better physical fitness than students in zone 16 (as a region with a low socio-economic status) that in line with our results[12]. In overall, results showed that the basic motor skills and physical activity have significant relationships. In addition, mobility and object control skills have relationship with physical activity levels.

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