

INVESTIGATION OF THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY LEVELS AND ACADEMIC ACHIEVEMENTS OF HIGH SCHOOL STUDENTS IN DIFFERENT FIELDS*

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ABSTRACT

The aim of this research is to design the relationship between the levels of physical activity and academic achievement of the high school target studying different things. A total of 400 students from four different high schools located in the center of Muğla are focused on the study. The International Physical Activity Questionnaire, as a measure of academic achievement, has average scores, not general. In the SPSS data analysis program, standard deviation, mean and variance analyzes, one way Anova, Mann Whitney U test and correlation analysis were used. At the end of the study, there is a higher level of physical activity in men compared to the level of women, since the high school approach has no physical activity level. In addition, the analysis of the negative direction relationship between the characteristics of licensed athletes, the level of physical activity and academic achievement ($p < 0.05$). When the academic achievements of high schools were examined according to their types, they had the highest level of physical activity in the science high school and the highest level of physical activity in the Anatolian high school ($p < 0.05$). There was a significant difference in demographic variables, functionality, physical activity level and father education status variable, targeting ($p < 0.05$). On the other hand, while a positive relationship was established between treatment physical activity levels and academic achievements, it was concluded that there was a significant relationship. As a result, there is a clear determinant of the status of the fathers' status and the effectiveness of the variables for the research-oriented fathers, while other demographic variables do not affect the activities of

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high school settings in different activities and the level of physical activity is said to be a crucial determinant of academic achievement.

Keywords: *Academic Achievement, High School Students, Physical Activity*

INTRODUCTION

Physical activity, defined as any body movement that needs more energy than resting state, also allows body movements to be performed with the help of muscles that hold your muscles or our skeleton that needs energy expenditure. (Torbeyns et al., 2014)

It is recommended to increase the amount of energy spent physically and change the way you live a stagnant-life, moderate and intense, and 150 minutes of physical activity per week (Hallal et al., 2014).

The rate of physical activity and involvement in physical activity in human life is gradually decreasing as age progresses (Sahebi, 2014) The environment in which the individual lives and the stagnant lifestyle that increases with age impacts both mental and physical health negatively (Reed et al., 2011; Acar et al., 2016) Regular physical activity is considered to protect and improve health, and positive and effective outcomes are obtained. for many known health issues (Castelli et al., 2007). People had to do their daily work physically for centuries. As time progressed, rapid technological advancement led to the immobile continuation of life (Akıncı., 2014; Arabacı et al., 2007). Deprivation of physical activity has contributed to the development of childhood obesity, diabetes, cardiovascular diseases, high blood pressure, cholesterol, stroke and various cancer diseases (Castelli et al., 2007). Regular physical activity improves emotional, musculoskeletal, and immune system health conditions. Diabetes, various respiratory disorders, cardiac and vascular diseases, high blood pressure, various cancers, stroke, neurological disorders and many other disorders affect life and lifespan (Allison et al., 1999; Castelli et al., 2007; Rowe, et al., 2004; Tremblay et al., 2000).

This age's major public health issue is a stagnant way of life (Troost et al., 2014). Lack of physical movement has proven to be a major factor in the onset of many diseases other than infectious diseases. A Warburton study found that in cases of cardiovascular risk and death, physical activity resulted in a reduction of more than 50% in the risk of death, a reduction of 40% in the risk of addiction and a reduction of 20-30 % in the risk of dependent female breast cancer (Maresova, 2014). The passive lifestyle has risen dramatically in virtually all individuals in developed and developing countries. Furthermore, many health issues, which are not contagious due to a stagnant lifestyle, have significantly increased. Inactivation is therefore recognized as the world's fourth mortality risk factor (Can et al., 2015).

For years, people have questioned if there is any connection between the mental framework of an individual's functional success and physical activity. For this reason, a lot of scientific research has been carried out. As a result of these scientific research, it has been found that sporting activities other than time spent in school have a positive impact on individual academic achievement. On the other hand, studies also show that participation in sporting activities other than classes at certain rates reduces the progress of students in school (Meier et al., 2004; Acar et al., 2016).

It is an important issue whether students participate in physical activity and whether it impacts their academic achievement. Academic success brings happiness and personal satisfaction to high school students, while academic failure, on the contrary, can lead to the student's disappointment, loss of self-confidence and depression.

Therefore, a way of life with both academic achievements and exercise is essential for each person in the education system.

METHOD

In this research, the application of survey and screening method were used to assess the relationship between the level of physical activity and student academic achievement throughout four different high schools in Mugla province.

Population and Sample

The population of this research is the high schools in the National Education Department of Muğla Province. The research sample consists of Mugla Anatolian High School, Mugla Zubeyde Hanim Vocational and Technical Anatolian High School, Mugla 75th Year Technology High School and Mugla Anatolian Religious High School. The research was attended by 100 students from each high school selected randomly from 2nd grade high school students and a total of 400 students. There are 235 female students and 165 male students.

Data Collection Tool

Information Form and International Physical Activity Questionnaire, IPAQ were used in the study to determine the level of physical activity of high school students. The validation and reliability study of this survey was conducted by Craig et al. (Craig et al., 2003).

Öztürk conducted a validity and reliability study of this survey to university students. (Öztürk, 2005) The content of the questionnaire allows us to access data on the time spent by students in sitting, walking, moderate and tough activities. (Craig et al., 2003)

Data Analysis

Standard deviation, mean and variance analysis was used for descriptive statistics in the SPSS 22.0 Package Software. Independent T test was used for binary variables of parametric tests according to Kolmogorov –Smirnova. The one way ANOVA test has been used for more than two variables. Correlation analysis has been used to determine the relationship between groups. Results were statistically tested with significance at $p < 0.05$.

FINDINGS

165 (41.25%) of the students participating in the study were male and 235 (58.75%) were female students. 100 (25%) of the students are from Science High School, 100 (25%) are from Vocational High School, 100 (25%) are from Anadolu high school and 100 (25%) are from Imam Hatip High School.

Table 1. Physical activity levels by high school types

High School	N	Average	S.S	F	P	Derivarion Difference
Science High School	100	1028,7	737,7			
Vocational High School	100	1165,5	981,8	12,6	0,00	4<1,2,3
Anatolian High School	100	1187,5	894,6			
Anatolian Religious High School	100	588,2	378,2			

(p<0,05)

The results of comparing the study participants ' physical activity levels by high school are presented in Table 1. By analyzing the physical activity rates of the participants, it was determined that statistically significantly higher were the PA scores of students studying at Anatolian High School. ($p < 0,05$)

Table 2. Academic achievements by high school types

High School	N	Average	S.S	F	P	Derivarion Difference
1 st Group-Science High School	100	4,98	0,14			1>2, 3, 4
2 nd Group-Vocational High School	100	3,7	0,78			2<1, 3
3 rd Group-Anatolian High School	100	4,46	0,5	121,1	0,00	3<1
4 th Group-Anatolian Religious High School	100	3,69	0,64			4<1, 3

(p<0,05)

The results of comparing the study participants' academic achievements by high school are presented in Table 2. By analyzing participants' academic achievements, it was determined that the academic achievement scores of the students studying at Science High School were statistically significantly higher ($p < 0,05$).

Table 3. Relationship between physical activity level and academic achievement

	Average	S.S	Pearson Correlation	P
Academic Achievement	4,20	0,788		
Physical Activity Level MET-minute/week	992,5	816,4	0,93	0,06

($p < 0,05$)

The results of the relationship between the level of physical activity of the participants and academic achievement are presented in Table 3. Although there was a positive correlation between the level of physical activity of the participants and their academic achievement, there were no statistically significant results ($p > 0,05$).

Table 4. Physical activity levels by high schools

Liseler	Group		
	Inactive	Minimally Active	Very Active
Science High School	32	46	22
Vocational High School	36	37	27
Anatolian High School	24	50	26
Anatolian Religious High School	65	33	2
Total	157	166	77

The findings of the participants in the physical activity category are presented in Table 4. The physical activity category of the participants in Science High School was as follows; 32 of them were inactive, 46 were minimally active and 22 were very active. The physical activity category of the participants in Vocational High School was as follows; 36 of them were inactive, 37 were minimally active and 27 were very active. The physical activity category of the participants in Anatolian High School was as follows; 24 of them were inactive, 50 were minimally active and 26 were very active. The physical activity category of the participants in Religious High School was as follows; 65 of them were inactive, 33 were minimally active, and 2 were very active.

Table 5. *Categorical class of participants ' physical activity*

Categorical Classification	N	%
Inactive	157	39,3
Minimally Active	166	41,5
Very Active	77	19,3
Total	400	100,0

The results of the physical activity frequency table for the participants are presented in Table 5. It was found that 157 of the participants were inactive, 166 were minimally active and 77 were very active.

DISCUSSION AND CONCLUSIONS

The aim of this study is to examine the relationship between the levels of physical activity and academic achievement of high school students studying in various fields. A total of 400 students participated in the study, including 165 male students and 235 female students from four high schools studying in various fields.

After analyzing the students ' physical activity levels it was found that the PA scores of Anatolian High School students were higher and that there was a statistically significant outcome. ($p < 0,05$) As students ' academic achievements were examined it was found that students studying at Science High School had higher academic achievement scores and a statistically significant outcome was determined. ($p < 0,05$) It was determined that 157 of the students who participated in the research were inactive, 166 were minimally active, and 77 were very active.

A Telama (2000) study revealed a decline in levels of physical activity among children, particularly after 12 years of age. Another study consisted of 357 adolescent students. At the end of the study, students ' participation levels of physical activity were found to be small, and 49.7 % of students had no habit of regular sports (Akman et al., 2012).

In Öztürk's (2011) study it was reported that 12.9% of primary school students were physically extremely active, 21.2% were too active, 42.4% were normally active, and 23.5% were less active. Once, 90 adolescents (39 women, 51 men) were included in the research in a study of adolescent male and female students, only 16.7 percent were physically active, while 32.2 percent were moderately active. It was concluded in the same research that 51.1 percent of adolescents were physically inactive. (Uçar, 2014)

Research by Karademir (2017) reported that students ' physical activity levels were low. In another study conducted with the participation of 1307 female and 1365 male students, it was found that there was no significant relationship between the frequency of participation in physical activity and the prevalence of obesity, whereas stagnant-lifestyle directly affected obesity at some points.

According to this research, the rate of obesity is higher among students who go to school by bus compared to students who go to school by bicycle or on foot.

Contrary to our study findings, other literature studies (Çağlayan et al., 2004; Dwyer ve et al., 2001; Linder, 1999; Shephard, 1997) found that participation in physical activity and sports activities had a positive impact on the level of academic achievement. It is also acknowledged, however, that families have negative opinions on this subject due to factors such as lack of awareness in society and that high schools that provide different education are not available to pursue academic life and sports together.

A total of 2161 students who studied at 44 colleges and universities and whose age range is 18-24 participated in a study conducted in the United States in 2010. The relationship between healthy living behaviors and academic achievement of these students was examined and it was determined that the academic achievements of the students with high healthy living scores were also high (Wald, 2010).

Another study, which examined the relationship between physical activity and academic achievement, involved a total of 757 students from 29 different primary schools. It was found at the end of the study that there was a very strong relationship in a positive way between the two variables and that physical activity had a positive effect on the academic achievements of the students (Telford et al., 2012b).

A similar study by Bilgin (2017) found a positive correlation between secondary school students ' physical activity activity levels and TEOG scores although some students had low physical activity levels but high academic achievement levels. Depending on this, it has been shown to spend more time observing students who do not engage much in physical activity. It was stressed in this context that the extent of academic achievement is directly related to the amount of time spent learning rather than engaging in physical activity.

The research that examined the association between levels of physical activity and academic achievement included the 12-16 age group of Spanish swimmers. As a result of this study, as the physical activity level increases, it was determined that academic achievement increases. Aerobic training in female swimmers has also been shown to have positive effects on their academic achievements (Ayan et al., 2014).

As a result, it was found that high school students who took part in the study had low physical activity levels.

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