

## The Evaluation of the Relationship between Physical Activity Level and Depression of Adolescent Registered in a Sports Center

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### ABSTRACT

The aim of this study is to determine the relationship between depression and physical activity level of adolescents registered to a sports center. This study is a descriptive relational research. In the study, all the adolescents registered to the center formed the sample without selecting the sample. In the collection of data; A personal information form prepared by the researchers and questioning socio-demographic characteristics and Reynolds Depression Scale for Adolescents were used. In order to conduct the research. In addition, verbal consent was obtained from all adolescents participating in the study. The mean age of the adolescents is  $17.35 \pm 0.34$ , 60% of them are girls, 40% of their mother is primary school graduate, 40% of their father is a high school graduate, 35.3% of them is a housewife, 43.5% it was determined that his father was working in the private sector and 37.6% of them evaluated their financial situation at a good level. When the physical activity level of the adolescents was evaluated, it was determined that 52.9% of them did vigorous physical activity and 47.1% of them did moderate physical activity. Depression scale mean score was calculated as  $36.94 \pm 4.09$ . When the results of the study were evaluated, girls, whose mothers were primary school graduates, whose mothers were civil servants, who perceived their income as bad, and those who did moderate physical activity were in the risk group in terms of depression.

### INTRODUCTION

Adolescence is a period of developmental crisis in which psychological and physical changes are experienced intensely. Adolescence is defined as the period in which the transition from childhood to adulthood occurs and cognitive, biological and socio-emotional changes occur [1]. Adolescence is a developmental period and in this process, the adolescent transitions from dependency to independence, autonomy and maturity. He tries to stand alone rather than being a family dependent individual. The period that starts at the age of 11-12 and lasts until the age of 19-20 is called the adolescence period. Different developmental characteristics are seen in different age groups during the period [2].

Adolescence is a period in which the anatomical and physiological changes and developments of the person are at the maximum level and sometimes there are some problems in adapting to these changes. People in this period may be more easily exposed to injuries caused by overuse due to the imbalance in the strength and

flexibility of the muscles during development [3]. Again, in this period, due to the fact that the growth plates in the bones have not closed yet, the exercise program given should be careful because the growth continues. It is accepted that overload affects growth negatively in this period [4]. For these reasons, the physical capacity of the individual should be known and unnecessary strains should be avoided. Exercises using more body weight are recommended for individuals in this period. In recent years, childhood and adolescence obesity has become an important health problem due to the decrease in physical activity. Obesity in this period is a harbinger of obesity in the adult period of the person and this may cause cardiovascular diseases in the future. The most effective method in preventing obesity is exercise combined with diet [5].

The incidence of depression in adolescence increases with advancing age. Depression, deep sadness, and sometimes a sad and depressed mood, loss of speech, thought, interest and energy (slowness in movements, stagnation, weakness, reluctance), negative thoughts (worthlessness, pessimism, guilt) and slowing in physiological functions (appetite) loss of life is a syndrome [6]. Depression is a very common condition in adolescents. 15-20% of teenagers who have reached young adulthood have been diagnosed with clinical depression at least once [7].

The cause of depression seen in adolescents can be examined in general under four groups (. These are genetic factors, environmental reasons, negative events that occur in the life of the adolescent and personal reasons [8]. According to the World Health Organization, Depression; it ranks fourth among the diseases that cause physical, social, economic and emotional problems. For this reason, it is extremely important to prevent and treat depression in terms of individual and public health [9]. In this context, it is thought that physical activity (PA) will have important effects in the prevention and treatment of depression. Because physical activity is a concept that includes all kinds of muscle movements; Since it covers a wide area from daily life activities such as housework, walking, exercise, sports, dance and leisure activities to various sports activities, it can be protective in preventing adolescent depression [10].

The aim of this study is to determine the relationship between depression and physical activity level of adolescents registered to a sports center.

### RESEARCH QUESTIONS

- What are the depression levels of adolescents?
- What are the sociodemographic and physical activity levels of the adolescents?
- Is there a relationship between the physical activity level of adolescents and their depression levels?

### METHODS

#### Type of research

This study is a descriptive relational research.

#### Location and features of the research

The research was carried out in a Sports Center located in Selçuklu district of Konya province. Many sports branches such as fitness and aerobics are carried out in the center. The research was carried out with 85 adolescents registered to a sports center.

#### Study group of the research

In the study, all the adolescents registered to the center formed the sample without selecting the sample.

#### Data collection technique and tools

The data of the research were collected by face-to-face survey method. In the collection of data; A personal information form prepared by the researchers and questioning socio-demographic characteristics (age, gender, education level of mother and father, employment status of mother and father, income status and physical activity level), and Reynolds Depression Scale for Adolescents were used. Since the sample group of the research is the members who go to a sports center and do active sports, their physical activity levels were evaluated with a question based on their self-reports.

**Reynolds adolescent depression scale (REDS):** The Turkish validity and reliability of the scale developed by Reynolds (1981) was made by Oksay and the Cronbach's Alpha internal consistency coefficient was found to be 0.75. The scale, which consists of 30 items, is a 4-point Likert type. 7 of the items (1, 5, 10, 12, 23, 25, 29) are scored in reverse. The critical items of the scale are 6, 14, 20, 26, 29 and 30. A minimum of 30 and a maximum of 120 points can be obtained from the scale. High scores indicate high levels of depressive symptoms [11]. The

Cronbach's alpha key number of the scale was determined as 0.81.

**Evaluation of data**

The data of the research will be evaluated using the statistical package program SPSS for Windows 22.0 (Statistical Package for Social Science). Number of units (n), percentage (%), mean ± Standard Deviation (mean (SD) values were used as summary statistics. The normal distribution of the data will be evaluated with the Shapiro-Wilk test and the Q-Q plot. Two independent samples t-test and One Way ANOVA test were used for normally distributed data. The results were evaluated at 95% confidence interval and p<0.05 significance level.

**Ethical procedure**

In order to conduct the research, ethical permission was obtained from the Ethics Committee of the Faculty of Sport Sciences of Selcuk University, and parental consent was obtained from the parents of the adolescents. In addition, verbal consent was obtained from all adolescents participating in the study.

**RESULTS**

The mean age of the adolescents is 17.35±0.34, 60% of them are girls, % 40 of their mother is primary school graduate, 40% of their father is a high school graduate, 35.3% of them is a housewife, 43.5% it was determined that his father was working in the private sector and 37.6% of them evaluated their financial situation at a good level. When the physical activity level of the adolescents was evaluated, it was determined that 52.9% of them did vigorous physical activity and 47.1% of them did moderate physical activity. Depression scale mean score was calculated as 36.94±4.09.

When the depression scale total mean scores of the adolescents were evaluated according to their sociodemographic characteristics, it was seen that the mean depression score of the boys was lower than that of the girls, and the difference was statistically significant (p<0.05). A statistically significant difference was found between maternal education status and depression scale total score averages, and it was seen that the difference was due to those whose mothers were university graduates (p<0.05). No statistically significant difference was found between the

father's education level and the depression scale total score averages (p>0.05). A statistically significant difference was found between the mother's occupation and the depression scale total score averages, and it was seen that the difference was caused by those whose mothers were housewives (p<0.05). No statistically significant difference was found between the father's occupation and the depression scale total score averages (p>0.05). A statistically significant difference was found between the perceived income level and the depression scale total score averages, and it was seen that the difference resulted from those who perceived their income as good (p<0.05). Depression scale total score averages were found to be lower in those who did intense physical activity than those who did moderate activity, and the difference was statistically significant (p<0.05) (Table 1).

Table 1: Evaluation of Depression Scale Mean Scores According to Adolescents' Sociodemographic Characteristics and Levels of Doing Sports.	
Variables	Depression Scale Total Score Mean±SD
<b>Gender</b>	
Girl	40,43±4,48
Male	33,20±3,35
Test Value, p	t:0,748 p:0,01*
<b>Mother Education Status</b>	
Primary school	38,44±4,35
High school	37,10±4,22
University	34,71±2,59
Test Value, p	F:0,567 p:0,01*
<b>Father Educational Status</b>	
Primary school	37,62±3,77
High school	37,5±4,52
University	36,08±3,72
Test Value, p	F:4,673 p:0,029
<b>Mother's Job</b>	
Housewife	32,11±4,18
Officer	39,00±3,84
Private sector	39,63±4,23
Test Value, p	F:1,114 p:0,03*
<b>Father's Job</b>	
Officer	37,89±4,28
Private sector	36,20±3,82
Test Value, p	t:4,034 p:0,027
<b>Perceived Income Level</b>	
Good	35,03±3,32
Middle	37,66±4,13
Bad	38,56±4,65
Test Value, p	F:4,667 p:0,01*
<b>Physical Activity Level</b>	
Vigorous physical activity	35,77±3,89
Moderate physical activity	38,12±4,34
Test Value, p	t:2,027 p:0,01*

F: One Way Anova, t: t test, \*p<0,05

## DISCUSSION

Physical activity is beneficial to health at all ages. Regular physical activity makes significant differences in the healthy growth and development of children and young people, in getting rid of unwanted bad habits, in socialization, in protecting adults from various chronic diseases or in the treatment or support of treatment for these diseases, in ensuring that the elderly have an active old age period, in other words, in increasing the quality of life throughout life. can create. In our study, it was determined that the majority of adolescents did intense physical activity. In the study of Oberste et al. [3], it was reported that adolescents are intensely interested in physical activity and they mostly do physical activity and exercises too much. In the study of Motl et al. [2] in which they evaluated the relationship between depression and physical activity in adolescents, it was determined that the physical activity level of the participants was low. Biddle and Asare [12] evaluated the relationship between mental health and physical activity level of adolescents and found a high level of physical activity in adolescents. The findings of the studies on the subject show similarities and differences with the findings of the current study.

It was determined that the depression level mean score of the adolescents was quite low. It is thought that this situation may be related to the fact that adolescents often do moderate and vigorous physical activity. In a field survey on the effects of regular physical activity, especially on high school youth, when the tension and weakness of puberty reach their peak, regular exercises protect young people from important diseases such as heart, blood pressure, obesity and Type 2 diabetes, reduce depression levels in youth and adults, and affect mood disorders. have been found to have positive effects on their capture and protection [8,13]. When the depression scale total score averages of the adolescents were evaluated according to their sociodemographic characteristics, it was determined that the average depression score of the boys was lower than that of the girls. In the study of Adeniyi et al. [5] it was reported that the depression level of men was lower, similar to the finding of the current study. In addition, in our study, a significant relationship was found between mother's

education level, mother's occupation and income level and depression. In the study of Biddle et al. [14], it was reported that those whose mothers had a high level of education had a lower depression score. In the study of Kandola et al. [6], a high correlation was found between the mother's occupation and depression. The findings of the studies carried out were similar to our current study findings in this respect.

In our study, the physical activity level of the adolescents was found to be moderate and severe. The depression level mean score of those with severe physical activity level was found to be lower. Measurer et al. (2015) reported in their study that the physical activity level of the students and the level of depression were related, and that as the physical activity level of the students increased, the depression decreased. It has been reported that regular exercise is directly related to depression, psychological well-being and happiness, and that as physical activity increases, individuals' depression levels improve positively [15]. Arslan et al. [7] examined the effect of physical activity on depression in young people and found a significant relationship between depression and physical activity.

## CONCLUSION

When the results of the study were evaluated, girls, whose mothers were primary school graduates, whose mothers were civil servants, who perceived their income as bad, and those who did moderate physical activity were in the risk group in terms of depression. A significant relationship was found between the severity of physical activity and depression, and those with higher levels of physical activity had a lower risk of depression. In line with the results of this study, it is very important to encourage adolescents to do physical activity to protect themselves from depression.

## LIMITATIONS IN THIS STUDY

Since this research was carried out with adolescents registered in a sports center, it has sample limitations. Research findings can only be generalized to adolescents in the centre.

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