

EXAMINATION OF THE RELATIONSHIP BETWEEN DEPRESSION, ANXIETY, STRESS AND SPORTS IN TÜRKİYE: CROSS-SECTIONAL STUDY

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Abstract

Depression, anxiety, and stress are the most common psychological disorders. On the other hand, it is seen that the rate of sports in Turkey is quite low when compared to other European countries, while the obesity rates are quite high. This study aimed to examine whether doing sports and physical activity differ in terms of depression, anxiety, and stress levels in non-professional athletes. It is planned to collect data from a large group with a cross-sectional study. In the study, 3032 people (1715 female and 1317 male, ages between 18-70 years ($M = 26.51 \pm 10.55$ years)) were reached by convenient sampling method in 2022 in Turkey. The Hospital Anxiety and Depression Scale and The A Stress Scale-36-Tr were used in the study. According to the MANOVA results, a difference was found between the groups who regularly do sports or exercise, do it occasionally, and do not do it at all, in terms of depression, anxiety, and stress total scores. All three groups differed from each other. As you do sports or exercise, depression, anxiety, and stress total scores decrease. The obtained results seem to provide information about the public health problem in Turkey.

Keywords: *Depression, anxiety, stress, exercise, sports.*

1. Introduction

Mental health encompasses a range of disorders that can have a debilitating effect on individuals (Souteret al., 2018). When the studies on the subject were examined, it was found that approximately 18% of the participants met the criteria for a common mental disorder during the previous 12 months, and approximately 29% had a generalized mental disorder at some time in their lives. Many factors such as epidemic diseases, death of loved ones, job loss, financial insecurity, poverty, social isolation and loneliness, and physical and emotional fatigue in employees constitute risk factors that can contribute to mental health problems such as depression, anxiety, and stress (Cenat et al., 2021; Yates et al., 2020). The estimated lifetime prevalence of depression and anxiety syndromes as the most common mental disorders is approximately 10-13% (Hu et al., 2020; Petersson et al., 2023; Souteret al., 2018). In addition, it is reported that there is a consistent gender effect in the prevalence of common mental disorders and there is evidence of regional differences in the prevalence (Steel et al., 2014). In addition, mental disorders have many additional costs worldwide, including loss of productivity, the burden on health systems, and a negative impact on quality of life (McDowell et al., 2018; Whiteford & Baxter, 2013).

Epidemiological studies show a link between physical activity and the incidence of mental health disorders (Kandola & Stubbs, 2020). The isolation and quarantine restrictions on physical and social activities during the COVID-19 pandemic have contributed to the increased prevalence of mental disorders. On the other hand, the effects of exercise and sports as a subset of physical activity in combating anxiety and depression have been demonstrated in both cross-sectional and longitudinal studies (Hu et al., 2020; Kandola, et al., 2019; Lindwall et al., 2014; McDowell et al., 2018; Wu et al., 2018). Accordingly, physical activity is inversely proportional to the symptoms of anxiety disorders in the general population (Kandola & Stubbs, 2020). Data obtained from 47 countries within the scope of the World Health Survey (World Health Survey spanning 47 countries) reveal that high levels of physical activity may be protective against anxiety disorders, while low levels of physical activity may be a risk factor for anxiety disorders (Kandola & Stubbs, 2020).

Physical activity, mainly through exercise, produces an antidepressant effect that can affect depressive symptoms in various biological and psychosocial ways (Kandola, et al., 2019). Mental

well-being is defined as the individual's ability to realize their own potential, cope with the normal stresses of life, work productively and efficiently, and contribute to the society they live in (Souteret al., 2018). In this way, most of the available research reports positive results for the mental health benefits of physical activity (Carless & Douglas, 2010; Tatar, Astar et al., 2018).

However, participation in sports and other physical activities is below recommended levels in many countries. In Turkey, the prevalence of insufficient physical activity among adults over the age of 18 is 21.74% in men and 38.80% in women (WHO, 2016). The aim of the present study is to examine the effects of doing sports in Turkey on depression, anxiety syndromes, and stress-related mental disorders with a large group of participants.

2. Method

2.1. Participants

In the study, 3032 people, 1715 women (56.6%) and 1317 men (43.4%), were reached by convenient sampling method. Of the participants, 2306 were single (76.1%), 659 were married (21.7%, 67 were divorced or widowed (2.2%); 106 of them were primary school graduates (3.5%), 97 were secondary school graduates (3.2%), 1958 were high school graduates (64.6%), 858 were university graduates (28.3%) (13 people (0.4%) did not specify their educational status); the economic situation of 502 of them was bad (16.6%), the economic situation of 1886 of them was moderate (62.2%), the economic situation of 561 of them was good (18.5%) (83 people did not state their economic situation (2.7%)).

2.2. Materials

In the study, the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) and the A Stress Scale-36 were administered. The Hospital Anxiety and Depression Inventory is a 14-item, four-point Likert-type scale that single-items measures anxiety and dual-items measure depression (Zigmond & Snaith, 1983). The scale, which was developed with a three-step study to measure the stress level, consists of 36 items containing a five-point Likert-type assessment (Tatar, Saltukoğlu et al., 2018).

The level of physical activity was measured with one item version, of the three-level version adapted from the four-level Saltin Grimby Physical Activity Level Scale (SGPALS) (Saltin & Grimby, 1968). One-item version is commonly used in similar studies. Since professional athletes were not included in this study as exclusion criteria, "regular physical activity and training" and "regular heavy physical training for competitive sports" which are the 3rd and 4th levels of the scale, were combined and were taken as the only option.

2.3. Procedure and data analysis

The study was carried out in Turkey in 2022 with individual administrations. The administration was made by giving a printed form to all participants. Cronbach Alpha internal consistency reliability analysis, Pearson correlation analysis between total scores, and MANOVA for group comparisons were used to evaluate the data obtained.

2.4. Results

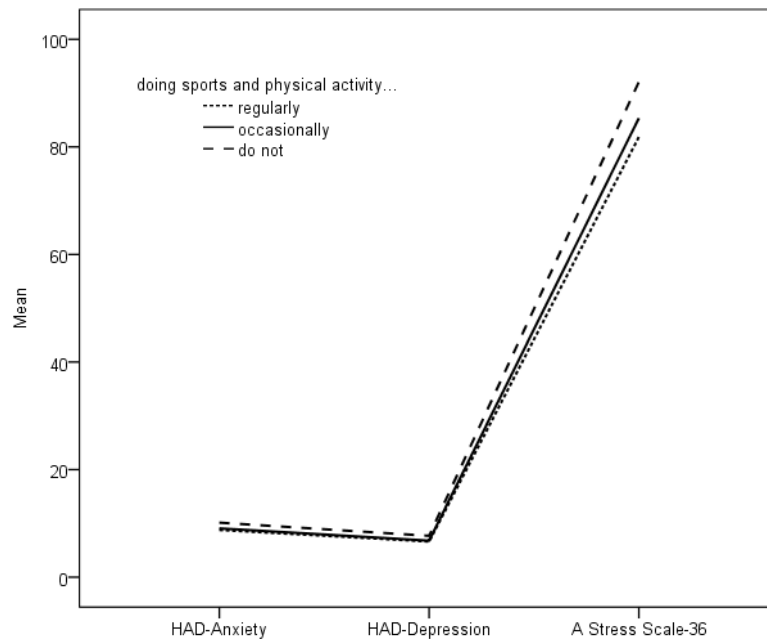
First of all, the internal consistency reliability coefficients of the scales used were examined and Cronbach Alpha values of 0.79 for the Anxiety sub-dimension of the Hospital Anxiety and Depression Scale, 0.71 for the Depression sub-dimension, and 0.94 for the A Stress Scale-36 were obtained. When the correlations between the total scores were examined, the coefficient was 0.56 ($p < 0.001$) between the total scores of anxiety and depression, 0.67 ($p < 0.001$) between the total scores of anxiety and stress, and 0.58 ($p < 0.001$) between the total scores of depression and stress. Then, the distribution of the participants in terms of doing sports was examined. Accordingly, 388 people (12.8%) do not do sports, 1363 people (45.0%) do sports occasionally, and 1281 people (42.2%) do sports regularly.

As a final operation, group comparisons were made with MANOVA in terms of total scores. According to the results, the Hospital Anxiety and Depression Scale's Anxiety sub-dimension total scores of the three groups who do not do sports, do sports occasionally, and do sports regularly ($F(2, 3029) = 25.28$; $p < 0.001$; partial $\eta^2 = 0.02$), the Depression subscale dimension between total scores ($F(2, 3029) = 21.24$; $p < 0.001$; partial $\eta^2 = 0.01$) and the A Stress Scale-36 total scores between the groups ($F(2, 3029) = 29.48$; $p < 0.001$; partial $\eta^2 = 0.02$) statistically significant differences were found. According to the results of the Tukey HSD multiple comparison tests performed to determine which group is different from which group, both the Anxiety and Depression sub-dimension scores of the group that regularly do sports are lower than the total scores of the groups that do not do sports and do sports

occasionally. There was no difference between the groups who do not do sports and those who do sports occasionally.

In the comparison made in terms of stress total scores, a difference was found between the three groups. Accordingly, the total score of the group that regularly does sports is lower than the total score of the groups that do not do sports and occasionally does sports, and the total score of the group that does sports occasionally is lower than the total score of the group that does not do sports. In the comparison made in terms of stress total scores, a difference was found between the three groups. Accordingly, the total score of the group that regularly does sports is lower than the total score of the groups that do not do sports and occasionally do sports, and the total score of the group that does sports occasionally is lower than the total score of the group that does not do sports (Figure 1).

Figure 1. The score distribution of the participants in terms of doing sports.



3. Conclusion

Most current research reports positive results for the mental health benefits of physical activity. Also, most studies focus primarily on the potential of physical activity to alleviate symptoms rather than contribute to recovery (Carless & Douglas, 2010). In this study, for simplicity, doing sports was considered as a measure of participation in exercise and it was examined whether there was a difference in anxiety, depression, and stress levels depending on the level of doing sports in Turkey. Accordingly, the relationship between individual changes in physical activity and changes in individual mental health, including anxiety, depression, and stress, was evaluated.

The potential contribution of sports and physical activity to mental health is related to what a person adds to their life rather than what it takes (Carless & Douglas, 2010). Because exercise-based interventions seem to be effective in reducing anxiety symptoms in people with anxiety disorders (Stonerock et al., 2015; Stubbs et al., 2017). In this direction, it is expected that doing an increased amount of physical activity can help reduce the symptoms of mental health problems (Kandola & Stubbs, 2020).

The results obtained support the information that there was an insufficient prevalence of physical activity among adults over 18 years of age in Turkey in previous years (WHO, 2016). The lowest anxiety, depression and stress total scores were observed in the group that regularly did sports. Therefore, the results also support the findings that exercise helps reduce symptoms related to mental disorders.

In general, in previous studies, the basic biological and psychosocial mechanisms of sports or physical activity have not yet been established. However, the results of this study supported the argument that doing and increasing physical activity is important for mental health in the general population in addition to its benefits for physical health (Tatar, Astar et al., 2018). Therefore, the results of this study show the importance of taking sports or physical activity into consideration in preventive studies related to mental health in the general population.

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