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# Effect of remote exercise education on psychological status and body awareness

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**Abstract**

The curfew restrictions applied during the pandemic period have had negative physical and psychological effects on people all over the world. Therefore, the aim of the study is examining the effect of distance exercise education on psychological state and body awareness. Twenty-one sedentary women aged 20-30 years participated in the study. Exercises were carried out for 6 weeks, 3 days a week, 1 hour daily. The exercise program sent to the participants digitally consists of a total of 8 moves: plank, crunch, leg raise, flutter kicks, mountain climbers, arms-high partial sit up, heel touches, half push up. 10 minutes of warm-up at the beginning of each exercise and 5 minutes of active cooling with 5 minutes of stretching at the end. All participants had the Body Awareness Questionarre (BAQ) and Beck Depression Inventory (BDI) filled digitally 6 weeks before and 6 weeks later. SPSS 20.00 program was used to analyze the data. The shapiro wilk test was used to determine whether the data showed normal distribution. Wilcoxon signed ranks test was used as the data did not show normal distribution in the analyzes. Significance level was accepted as $p < 0.05$. A statistically significant difference was found in all data as a result of the pre-test and post-test comparison of body weight, BDI and BAQ values ($p < 0.05$). As a result, it can be said that the exercise program applied to sedentary individuals has a positive effect on psychological state and body awareness.

**Keywords:** Physical activity, pandemic, body weight, covid-19.

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## INTRODUCTİON

Body awareness is defined as a general concept for body management, body experience and use of the body. In other words, it is a concept that focuses on the awareness of normal or abnormal processes occurring in the body and can change with mental functions and mental processes. One of the principles of the concept of body awareness is the individual's use and adoption of his body as an unlimited resource (Mehling et al., 2011). An individual with a high body awareness is expected to perceive all kinds of changes that occur in his body, and to change the negative ones individually or with help, again by using body awareness. As body awareness develops in the individual, improvement is expected in breath control, mind control, emotional control, increase in coordination, development in muscle and joint movements, reaction predictions due to changes in the body, postural control and balance elements (Miller et al., 1981; Shields and Angela, 1991). In a study, it was concluded that the deterioration of the body awareness state negatively affects the quality of life, psychological state and physical condition (Erden et al., 2013).

Physical activity is the activities that involve the expenditure of energy by using our muscles and joints in our daily life, increase the heart and respiratory rate, and result in fatigue that can be done at different intensities (ACSM, 2004). As physical activity markers, the biological, physical and social environment play an important role. These determinants are also expressed as factors that facilitate participation in physical activities. Although, it has been stated that the most important factor preventing physical activity is the lack of time, it has been shown that many variables including psychological, physiological and behavioral variables affect physical activity (Kirtland et al., 2003).

The coronavirus 2019 (COVID-19) pandemic, which emerged for the first time in the world in Wuhan, China, spread to more than 200 countries within a few months with its high contagiousness (Papa, 2020). During the COVID-19 pandemic process, societies are faced with negative emotions such as anxiety, depression, and even psychological problems. It is very important for the individual to continue his/her daily life in the face of these risks (Kim and Im, 2014).

Psychology generally refers to the systematic and scientific study of why, why and how people behave. Psychological resilience, on the other hand, is defined as the ability to overcome and adapt to a person's adverse conditions, despite very difficult conditions. The number and severity of events that negatively affect the psychological health of individuals in our society are increasing day by day. Many factors such as low socio-economic status, family problems, communication problems, physical problems trigger psychological disorders. Psychological resilience has features such as the continuity of healthy development and the ability to fight against adversities. The high level of psychological resilience of people enables them to fight effectively in the problems they encounter. In order to protect their mental health in the face of these problems, they must first have a sound psychology themselves (Masten and Coatworth, 1998).

Restrictions applied during the pandemic process negatively affect individuals both physically and psychologically. In the light of this information, the effect of distance exercise education on psychological state and body awareness was examined.

## MATERIALS AND METHODS

Twenty-one sedentary female volunteers with an age range of 20 to 30 participated in the study. Volunteers have been invited to work via e-mail, sms or phone calls. The interviews were conducted digitally due to pandemic conditions. Before starting the study, all participants were informed about the study procedure.

A digital exercise program was sent to the volunteer participants. The exercise program was prepared in line with the recommendations of the American College of Sports Medicine for health and fitness purposes (ACSM, 2004). The program lasted for 6 weeks, 3 days a week, 1 hour daily. 5 minutes of active cooling with 10 minutes of warm-up, plank, crunch, leg raise, flutter kicks, mountain climbers, arms-high partial sit up, heel touches, half push up and 5 minutes stretching. All participants had the Body Awareness Questionarre and Beck Depression Inventory filled digitally 6 weeks before and 6 weeks later.

### Body awareness questionnaire

The body awareness of the individuals was evaluated with the Body Awareness Questionnaire (BAQ) with Turkish validity and reliability developed by Shields, Mallory and Simon in 1989. BAQ is a questionnaire aimed at determining normal or abnormal sensitivity of body composition. It consists of four subgroups (paying attention to changes in body processes and reactions, sleep-wake cycle, prediction at the onset of the disease, body reactions prediction) and a total of 18 statements. The participant is asked to score with numbers from one to seven for each statement (1 = Not right at all, 7 = completely correct for me). Rating in the questionnaire is made as a total score. The total score to be obtained from the questionnaire can be at most 126 and at least 18. It is concluded that the higher the total score to be obtained from the questionnaire, the better body awareness is (Erden et al., 2013).

### Beck depression ınventory

Beck Depression Inventory (BDI) was developed by Beck in 1961. BDI is used to determine the risk of depression and to measure the level of depressive symptoms and the change in severity. The validity and reliability study in our country was performed by Hisli (1989). Cronbach alpha value was found to be 0.80. Each item of the BDI determines a behavioral pattern specific to depression in the last week and includes 21 self-assessment sentences with four options (0-3). The total score that can be obtained from the scale varies between 0 and 63. As violence; 0-9 = Minimal, 10-16 = Mild, 17-29 = Moderate, 30-63 = Severe. It takes about 15 minutes to complete the scale. However, this period may vary depending on the education level of the patient. The cut-off score was accepted as 17 (Hisli, 1989). Scoring 17 and above were accepted as having 'symptoms of depression'. The advantages of BDI are that it is filled in by the patient, has a simple language, and is easy to score. The disadvantages are that higher scores have been reported in women, the elderly, adolescents, in the presence of low educational level and accompanying psychiatric disorders (Beck, 1961).

SPSS 20.00 program was used to analyze the data. Descriptive parameters are shown using mean, standard deviation, minimum and maximum. The shapiro wilk test was used to determine whether the data showed normal distribution. Wilcoxon signed ranks test was used as the data did not show normal distribution in the analyzes. Significance level was accepted as $p < 0.05$.

## RESULTS

Descriptive statistics of the participants are shown in Table 1 as minimum, maximum and mean ± standard deviation.

The comparison of BDI and BAQ values is shown in Table 2. According to this, a statistically significant

**Table 1.** Descriptive statistics.

| Variables | Min | Max | Mean ± SD |
|---|---|---|---|
| Age (yr) | 20.00 | 30.00 | 24.12 ± 4.32 |
| Height (cm) | 156.00 | 179.00 | 163.21 ± 12.54 |
| Body weight (kg) | 59.64 | 71.56 | 63.6 ± 3.56 |
| BAQ | 62.61 | 74.15 | 71.47 ± 4.5 |
| BDI | 18 | 9 | 14.1 ± 11.4 |

**Table 2.** Comparison of variables.

| Variables | Pre-test | Post-test | P |
|---|---|---|---|
| Body weight (kg) | 163.21 ± 12.54 | 159.14 ± 7.64 | 0.045* |
| BAQ | 71.47 ± 4.5 | 82.4 ± 9.8 | 0.032* |
| BDI | 14.1 ± 11.4 | 11.3 ± 12.68 | 0.031* |

*$p < 0.05$.

difference was found in all data as a result of the pre-test and post-test comparison of body weight, BDI and BAQ values ($p < 0.05$).

## DİSCUSSION AND CONCLUSİON

In this study, the effect of distance exercise education on psychological state and body awareness was examined. As a result, a statistically significant difference was found in all data as a result of the pre-test and post-test comparison of body weight, BDI and BAQ values ($p < 0.05$).

In a study, the relationship between body awareness and balance and posture of healthy individuals with different physical activity levels was examined. 64 healthy individuals aged 18-65 were classified as inactive (n = 20), less active (n = 24) and sufficiently active (n = 20). Body awareness of sufficiently active group was found better than inactive group ($p < 0.05$). A significant negative correlation was reported between body awareness and lateral posture analysis, total posture analysis and posture classification scores in the inactive group ($p < 0.05$) (Vatansever, 2018). Another study aimed to determine the effect of exercise on body awareness, kinesophobia, and fall risk in younger elderly people. 74 participants between the ages of 65 to 74 were divided into the exercising study group (n = 36) and the control group (n = 38). 12-week exercise program was applied to the exercise group. As a result, among the participants whose average age was 69.45 (year), there was a relationship between body awareness and kinesophobia in the exercising group, but not in the control group (Erden and Güner, 2018). One study examined the effect of 12-week yoga-based exercises on body awareness and mood in healthy women. 30 healthy women with an average age of 20.20 ± 1.65 years applied yoga-based exercise program for 12 weeks, once a week, 60 minutes, BAQ and Beck Depression Scale (BDS) were applied to the participants. As a result, no statistically significant difference was found between BAQ and BDS in scores before and after yoga exercise. In order to achieve more effective results in healthy individuals, it is recommended to increase the number and duration of sessions (Atılgan et al., 2019). When the studies on body awareness were examined, it was seen that the exercise program applied once a week was not sufficient (Atılgan et al., 2019). In this study, it is possible to talk about the positive effect of exercises applied 3 days a week on body awareness in parallel with the positive results found in other studies.

In a study, the effect of recreational physical exercise on the depression levels of university students who had never participated in regular physical exercise was investigated. 60 students participating in the study were divided into exercise group (n = 30, 15 female, 15 male) and control group (n = 30, 15 female, 15 male). Participants in the exercise group participated in an 8-week exercise program consisting of step and folk dances for one hour 3 days a week. The control group of the study continued to maintain their normal lives for 8 weeks. BDI was applied to the control group twice as the first and last measurement, while it was applied to the exercise group 3 times, in the first week of the start of the exercise program, at the end of the 4th week and the week when it was finished. Research results show that participation in physical exercise in leisure time positively affects students' depression levels in both genders (Tekin et al., 2009). Another study investigated the effect of walking exercise on depressive symptoms. In the study, a programmed aerobic walking exercise program was applied to the individuals. The study group consisting of 48 women participants was divided into two as (n: 24) and control group (n: 24). In the 10-week study, BDI was

administered 10 weeks before and 10 weeks after the exercise program. As a result, according to the Beck Depression Scale scores after aerobic exercise, the difference between the study and control groups was found to be statistically significant. It has been reported that aerobic exercises applied to the study group are effective in decreasing depression scores (Aylaz et al., 2011). In another study, the effects of pilates exercises on depression in women with fibromyalgia were investigated. Fifty-one women diagnosed with fibromyalgia participated in the study. Pilates exercises were applied three times a week for 4 weeks. Depression findings were evaluated with the BDI. As a result, it has been reported that pilates exercises can be used to reduce the symptoms of depression in women with fibromyalgia (Ekici et al., 2008). In another study, it was aimed to determine whether the depression levels of adolescents who exercise regularly and those who do not differ. 37 athletes between the ages of 14-18 who regularly exercised and 37 adolescents who did not participated in the study voluntarily. Athletes played football and basketball in various clubs. Socio-demographic data form and Beck Depression Questionnaire were applied to all participants to evaluate their depression levels. The scores of the adolescents who exercised regularly from the BDS were found to be significantly lower than the controls who did not exercise. As a result, it can be said that regular exercise has a protective effect against depression processes (Hastürk and Şenışık, 2011). In another study, it was aimed to investigate the effect of pilates-based exercise on depression symptoms in women. Participants were divided into two groups (Exercise group, n = 11 and Control group, n = 11). While the exercise group was exercised for 3 months, no application was made to the control group. Volunteers were evaluated with the BDS. These evaluations were made before and after 12 weeks of exercise. No difference was reported in the BDS between the periods before and after the administration in the groups ($p > 0.05$) (Saltan, 2018). In another study, it was aimed to determine the effect of the change in physical fitness levels of 3-month regular boob exercise applied to sedentary women on stress level. Thirty sedentary women between the ages of 25-45 were included in the study. Besides environmental measurements, hand grip strength and flexibility measurements, the depression questionnaire was filled in as a pre and post test. There was a decrease in the measured waist and hip circumference and waist/hip ratio. There is a statistically significant difference between the times in terms of depression values ($p < 0.05$). As a result, it can be said that 3 months of regular bosu exercise has a positive effect on depression levels in sedentary women (Türk, 2016). When the studies in the literature are examined, it is possible to talk about the positive effect of exercise programs applied to individuals on their depression. In this study, it can be reported that the exercise program applied in parallel with the information in the literature has a positive effect on the depression status of the participants. In a study, it was conducted to determine the effect of 12-week aerobic training program on body composition for sedentary middle-aged and young women. The groups were composed of women who did not exercise regularly, did not apply a special diet program, and did not have any health problems that would prevent them from exercising. Both groups were given a 30-minute jogging exercise program 3 days a week for 12 weeks. The groups were divided into middle age women and young women ($n = 23$). At the end of the study, a significant decrease in body weight values was detected in both groups ($p < 0.05$). As a result, it has been reported that 12-week aerobic exercise causes similar positive changes in body composition in middle age women and young women (Karacan and Çolakoğlu, 2003).

In conclusion, in the light of the findings, it is possible to talk about the positive effect of sedentary individuals on psychological state and body awareness in a 6-week period. Considering the pandemic conditions, it can be suggested that people should be encouraged to do exercises that they can do at home without risk and easily.

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