



Science, Movement and Health, Vol. XXIII, ISSUE 1, 2023  
January 2023, 23 (1): 43-48  
Original article

## THE EFFECT OF PHYSICAL ACTIVITY OF INDIVIDUALS WITH CHRONIC MENTAL ILLNESS ON COPING STYLES WITH STRESS

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### Abstract

**Objective.** In this study, the physical activity levels of individuals with chronic mental illness will be determined, and the effect of physical activity levels on their methods to coping with stress will be examined.

**Methods.** This study was planned as a descriptive relational study. The study was conducted with 94 psychiatric patients who applied to the psychiatry outpatient clinic of a University hospital in the Selçuklu district of Konya. In the collection of data; Personal information form prepared by the researchers, questioning socio-demographic characteristics, International Physical Activity Questionnaire and the Scale of Coping with Stress was used. To evaluate the relationship between sociodemographic characteristics and physical activity, t-test and one-way anaova tests were used with independent groups. Pearson correlation analysis was used to evaluate the relationship between the coping styles scale and physical activity.

**Results.** The mean age of the participants was  $33.54 \pm 12.02$ , 58.1% were female, 41.9% were male, 36.2% were university graduates, 61% were single, 73.3% were It was determined that 40 of them did not work in any job, 40% of them had an income of less than 1000 TL, 45.7% of them had the disease for less than 5 years, 39% of them had bipolar diagnosis and 53.3% of them perceived their health as moderate. The distribution of the physical activity levels of the participants and their stress coping styles scale mean score are presented in Table 1. It was determined that 81.6% of the participants were in the physically inactive (inactive) group, while 18.1% were in the group with low physical activity levels. The mean physical activity score of the participants was found to be  $483.35 \pm 111.05$ . Stress coping styles scale Self-Confident Approach sub-dimension mean score  $18.83 \pm 4.67$ , Helpless Approach sub-dimension mean  $19.74 \pm 4.67$ , submissive approach mean score  $12.53 \pm 3.45$ , optimistic approach score mean score of  $12.68 \pm 3.32$  and Seeking Social Support sub-dimension was found to be  $9.14 \pm 2.88$ .

**Conclusions.** According to the results of the study, women, married people, employees, those with chronic mental illness for 10 years or more, and those with a personality disorder diagnosis were included in the risk group in terms of physical activity. It was also observed that there is a relationship between physical activity and self-confident approach to coping with stress, submissive approach and seeking social support.

**Keywords:** chronic mental illness, coping with stress, physical activity

### Introduction

According to the definition made by the World Health Organization (1986), "health is the ability of a person or society to reach a state of complete physical, mental and social well-being and to be able to determine their wishes, realize their needs and meet their needs, on the other hand, change or cope with their environment." Mental health, on the other hand, is the individual's being in harmony and balance with himself and other people. This compliance varies by not adhering to the rules and provides flexibility in certain situations (Plowman & Smith, 2013). Chronic mental disorders are those that cause extremes, inadequacies, imbalances and inappropriateness in one's emotions, thoughts and behaviors, persist with remissions and relapses at different times, are at a high level in the world, cause distress to the individual and family in particular, burden the society in general and lead toward a chronic condition. and diseases that cause disability (Bulut Bozkurt, 2005). People with chronic mental illness, who are included in physical exercise programs, feel better psychologically, are more in tuned with drug applications and therapeutic interventions, and exercise reduces anxiety, increases the physical self-perception of sick people, increases social functionality, decreases daytime sleep and improves night sleep. It has been determined that it has positive results (Lök & Lök, 2016). Physical activity is a health-related behavior that is effective in the rehabilitation, treatment and prevention of chronic diseases (Chodsko-Zajko et al., 2009). physical activity; It is known as a comprehensive auxiliary treatment method used in psychology, psychiatry or psychosomatic hospitals. In the study by Buschert et al. (2019); observed the effects of an exercise program combined with routine inpatient treatment on the mental performance and individual severity of depression in a sample of patients suffering from major depression, and the result of the observations was that the

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physical exercise performed had a promising feature on mental performance and that it was beneficial for depressed patients can be done, it has been seen as a simple additional treatment (Buschert et al., 2019). However, he stated that participation in physical exercise can improve psychological health and help prevent and treat the development of mental problems such as anxiety and depression (Babic et al., 2014). This study aimed to determine the effect of individuals with chronic mental illness on the way they cope with stress due to the different physical activity levels.

### Research Questions

1. What are the physical activity levels of the participants according to their sociodemographic characteristics?
2. What are the participants' styles of coping with stress according to their sociodemographic characteristics?
3. Can a meaningful relationship be established between the physical activity levels of the participants and their styles of coping with stress?

### Methods

#### The type of Research

This study was planned descriptive relational.

#### Location of Research

It was carried out in the psychiatry outpatient clinic of a university hospital in Konya.

#### Population and Sample of the Research

The sample size in the study was calculated in the G\*Power 3.1.9.2 analysis program. With an effect size of 0.31, with 95% power, and 5% margin of error, it was calculated a total physical activity score average of 94. The inclusion criteria of the study are individuals aged 18 and over, literate and individuals with any chronic mental illness. The data of the study were collected from 105 individuals who applied to the Psychiatry Outpatient Clinic between February 1 and March 30, 2022.

#### Data Collection Tools

Questionnaires were collected by face-to-face interview technique. An average interview took 10 - 15 minutes. In the collection of data; a personal information form prepared by the researchers, questioning socio-demographic characteristics, International Physical Activity Questionnaire and the Scale of Coping with Stress was used.

**International Physical Activity Survey (IPAS)**, Physical activity levels were determined by the International Physical Activity Questionnaire (IPAS). The validity and reliability study of the questionnaire was conducted in Turkey. In our study, the self-administered short form of the questionnaire was used to evaluate the physical activity level, including the "last seven days". This short form consists of seven questions and provides information on sitting, walking, moderate-intensity activities, and time spent in vigorous activities. The calculation of the total score of the short form includes the sum of time (minutes) and frequency (days) of walking, moderate-intensity activity, and vigorous activity. The sitting score (sedentary behavior level) is calculated separately. In the evaluation of all activities, the criterion is that each activity is done for at least 10 min at a time. A score is obtained as "MET-minutes/week" by multiplying the minute, day and MET values (multiples of resting oxygen consumption). Walking time (minutes) was multiplied by 3.3 METs to calculate the walking score. In the calculation, 4 METs were taken for moderate-intensity activity and 8 METs for vigorous activity. Physical activity levels were classified as physically inactive (3000 MET-min/week).

**The Stress Coping Styles Scale (SCSS)** is a 4-point Likert-type scale developed by Folkman and Lazarus (1980) as the Ways of Coping Inventory. The scale consisted of 5 factors: self-confident approach (SCA), helpless approach (HA), submissive approach (SA), optimistic approach (OA), and seeking social support (SSS). Cronbach's alpha internal consistency coefficients were reported to be between 0.49 - 0.68 for the optimistic approach, 0.62 - 0.80 for the self-confident approach, 0.64 - 0.73 for the helpless approach, 0.47 - 0.72 for the submissive approach, and 0.45 - 0.47 for the social support seeking factor. 8, 10, 14, 16, 20, 23, 26 items of the scale are SCA.; items 2, 4, 6, 12, 18, OA. items 3, 7, 13, 15, 21, 24 HA.; items 5, 7, 13, 15, 21, 24 SA.; and clauses 1, 9, 29, and 30 of the SSS. are items.

#### Data Collection

The data were collected by the researcher by face-to-face interview method. During data collection, a quiet environment with little stimulus was created.

#### Evaluation of Data

The data of the study were evaluated using the statistical package program SPSS for Windows 22.0 (Statistical Package for Social Science). The number of units (n), percentage (%), mean $\pm$ standard deviation (mean (SD)) values were used as summary statistics. After the data were collected, the option specified by each individual for each item in the scales was entered into the SPSS program by the researcher and the total scores of the individuals from the scales were calculated. The normal distribution of the data was evaluated with the Kolmogorov-Smirnov test and the Q-Q plot. The independent two-sample t-test and One-Way Anaova test were used for normally distributed data, and Mann - Whitney U and Kruskal Wallis tests were used for non-normally distributed data. The results were evaluated at 95% confidence interval and  $p < 0.05$  significance level.



### Ethical Dimension of Research

Before starting the research, permission was obtained from the Ethics Committee of the Faculty of Sport Sciences (Meeting date: 3.12.2021/ Decision Number: 171). Institutional permission was obtained from the Selcuk University Faculty of Medicine Hospital management. Additionally, written consent was obtained from the individuals.

### Results

The mean age of the participants was  $33.54 \pm 12.02$ , with 58.1% female, 41.9% male, 36.2% university graduate, 61% single, 73.3% any it was determined that they did not work in a job, 40% of them had an income of less than 1000 TL, 45.7% of them had the disease for less than 5 years, 39% of them had bipolar diagnosis and 53.3% of them perceived their health as moderate.

The distribution of the physical activity levels of the participants and their stress coping styles scale mean scores are presented in Table 1. While it was seen that 81.6% of the participants were in the inactive (<600 MET-min/week) group, who were not physically active, 18.1% were less active (600 - 3000 MET-min/week) with low physical activity level. identified in the group. The mean physical activity score of the participants was found to be  $483.35 \pm 111.05$ . Stress Coping Styles Scale Self-Confident Approach sub-dimension mean score  $18.83 \pm 4.67$ , Helpless Approach sub-dimension mean  $19.74 \pm 4.67$ , submissive approach mean score  $12.53 \pm 3.45$ , optimistic approach score mean score of  $12.68 \pm 3.32$  and Seeking Social Support sub-dimension was found to be  $9.14 \pm 2.88$ .

**Table 1. Distribution of Participants' Physical Activity Level and Mean Scores of the Scale for Coping with Stress**

Scales	Number (n)	Percentage (%)
<b>Physical Activity Questionnaire</b>		
Physically inactive (Inactive) (<600 MET-min/week)	86	81,9
Low physical activity level (600-3000 MET-min/week) (Low Active)	19	18,1
	<b>Mean<math>\pm</math>SD</b>	<b>Min-Max</b>
<b>Physical Activity Total Score</b>	$483,35 \pm 111,05$	176-656
<b>Sub-Dimensions of the Scale of Coping Styles with Stress</b>		
Confident Approach	7-28	$18,83 \pm 4,67$
Helpless Approach	10-24	$19,74 \pm 4,67$
Submissive Approach	6-18	$12,53 \pm 3,45$
Optimistic Approach	5-15	$12,68 \pm 3,32$
Seeking Social Support	3-12	$9,14 \pm 2,88$

When the sociodemographic characteristics of the participants and distribution of their physical activity levels are examined; it was seen that men did more physical activity than women and the difference was found to be statistically significant ( $p < 0.05$ ). It was determined that there was a statistically significant difference between marital status and physical activity, and the difference was due to married people ( $p < 0.05$ ). We observed that the physical activity level of those who did not work in any job was higher than those who worked, and the difference was found to be statistically significant ( $p < 0.05$ ). It was determined that there was a statistically significant difference between the duration of the disease and the level of physical activity, and the difference was due to those with a disease duration of more than 10 years ( $p < 0.05$ ). It was observed that there was a statistically significant difference between the medical diagnosis and physical activity level of the participants, and the difference was caused by those with a medical diagnosis of schizophrenia ( $p < 0.05$ ). There was no statistical difference between educational and financial status and physical activity level ( $p > 0.05$ ) (Table 2).

**Table 2. Distribution of Physical Activity Levels of Participants by Sociodemographic Characteristics**

Variables	Physical Activity Score Average	Test value P value
<b>Gender</b>		
Female	$471,34 \pm 108,80$	t:0,125 p:0,02*
Male	$500,00 \pm 113,23$	
<b>Educational Status</b>		
Primary school	$479,70 \pm 95,05$	F:3,627
Middle School	$495,27 \pm 133,64$	



High school	491,00±121,29	p:0,22
University	488,00±107,04	
Graduate	404,80±133,93	
<b>Marital status</b>		
The married	<b>459,76±94,15</b>	F:4,632 p:0,01*
Single	495,12±118,85	
Divorced	576,00±76,73	
<b>Working Status</b>		
Working	<b>472,85±103,92</b>	t:0,117 p:0,03*
Not working	487,16±113,94	
<b>Financial status</b>		
0-1000 TL	360,40±99,83	F:2,034 p:0,06
1001-3500 TL	400,00±137,95	
3501-5000 TL	508,00±209,30	
Over 5000 TL	594,66±99,38	
<b>Disease Duration</b>		
0-5 years	510,66±115,37	F:5,023 p:0,02*
5-10 years	482,42±99,83	
Over 10 years	<b>470,15±106,81</b>	
<b>Medical Diagnosis</b>		
Schizophrenia	492,66±137,06	F:3,702 p:0,04*
Bipolar disorder	<b>463,80±122,64</b>	
anxiety disorder	473,06±99,40	
Personality disorder	556,00±141,42	
Other (depression, psychosis, schizoaffective disorder)	514,06±87,63	

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

The relationship between the physical activity level of the participants and the sub-dimensions of self-confident approach, helpless approach, submissive approach, optimistic approach and seeking social support of the stress coping styles scale is evaluated in Table 3. A strong positive correlation was found between the physical activity level and self-confident approach sub-dimension (p:0.03). A moderate positive correlation was found between physical activity level and helpless approach (p:0.01). A strong positive correlation was found between physical activity level and submissive approach (p:0.01). A strong positive correlation was found between physical activity level and optimistic approach (p:0.04). A strong positive correlation was found between physical activity level and seeking social support (p:0.009). A moderate negative correlation was found between the self-confident approach and the helpless approach (p:0.001). A weak negative correlation was found between the self-confident approach and the submissive approach (p:0.04). A weak positive correlation was found between self-confident approach and optimistic approach (p:0.03). A weak positive correlation was found between self-confident approach and seeking social support (p:0.01). A weak positive correlation was found between the helpless approach and the submissive approach (p:0.007). A weak negative relationship was found between the helpless approach and the optimistic approach (p:0.008). A weak negative relationship was found between the helpless approach and seeking social support (p:0.01). A weak positive correlation was observed between the submissive approach and the optimistic approach (p:0.03). There was a weak negative relationship between submissive approach and seeking social support (p:0.04). There was a moderate positive relationship between the optimistic approach and seeking social support (p:0.004).

**Table 3. Comparison of Participants' Physical Activity Level and Sub-dimensions of Coping Styles with Stress**

Variables	Physical Activity	Confident Approach	Helpless Approach	Submissive Approach	Optimistic Approach	Seeking Social Support
<b>Physical Activity</b>	1,00					
<b>Confident Approach</b>	r: -0,208 p:0,03*	1,00				
<b>Helpless Approach</b>	r: -0,57 p:0,56	r:0,446 p:0,001*	1,00			
<b>Submissive Approach</b>	r: -0,73 p:0,01*	r:0,189 p:0,054	r:0,263 p:0,007*	1,00		





<b>Optimistic Approach</b>	r: -0,069 p:0,48	r:0,184 p:0,03*	r:0,259 p:0,008*	r:0,161 p:0,10	1,00	
<b>Seeking Social Support</b>	r: -0,925 p:0,009*	r:0,378 p:0,01*	r:0,238 p:0,01*	r:0,197 p:0,04*	r:0,682 p:0,004*	1,00

r: Pearson Correlation Analysis, \*p<0,05

### Discussion

Functional disability in activities of daily living in patients with chronic mental disorders is frequently examined in the literature (Bulut Bozkurt, 2005). Symptoms such as sedentary life, self-alienation and tendency to sleep, which are generally seen in such patients, have caused individuals to turn to themselves more and, in short, to internalize the effects of the disease (Lök & Lök, 2016).

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Physical activities are accepted by health authorities as a curative and inclusive treatment method in the rehabilitation of related chronic diseases (Chodzko-Zajko et al., 2009). However, the expression of stress, which we encountered in chronic diseases, was brought to the literature with the expression of "Coping" with the contributions of Freud (Billings & Moos, 1981). Coping with stress; refers to the ability to manage situations that cause stress (Folkman & Lazarus, 1980). A relationship was established between the physical activity level of the participants and the sub-dimensions of self-confident approach, helpless approach, submissive approach, optimistic approach and seeking social support. Self-confident approach is stated in the literature as a mechanism used by people who can effectively cope with stress. In this study, a strong positive relationship was found between the physical activity level and self-confident approach sub-dimension. Simultaneously, a strong positive correlation was found between the level of physical activity and the submissive approach (p:0.01). Sahin et al. The regression analysis between perceived stress and seeking social support was found to be statistically significant (F=4,055; p=0.045<0.05). In this study, a strong positive relationship was found between physical activity level and seeking social support (p:0.009).

### Conclusions

This study is derived from the need for further studies to be able to determine the relationship between the stress management of patients with chronic mental disorders and physical activity and to reveal the factors affecting the related relationship. In this context, the factors affecting the frequency of physical activity (marital status, working at a job, duration of illness, etc.) were emphasized, and according to the findings, it was found that those who were male, married, did not work in any job, had a disease duration of more than 10 years and had a medical diagnosis of schizophrenia. It was also revealed that there was a lot of physical activity and a negative relationship was found between physical activity and styles of coping with stress. It has been concluded that the approach patterns shown by the patients (submissive, optimistic, helpless, self-confident) and the level of physical activity positively affect the phenomenon of coping with stress.

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