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The Effect of Exercise Health Belief and Mental Well-Being Level on Physical Activity Level: Cross-Sectional Study

Egzersiz Sağlık İnancı ile Mental İyi Oluş Düzeyinin Fiziksel Aktivite Düzeyine Etkisi: Kesitsel Çalışma

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ABSTRACT Objective: The aim of the study is to investigate whether exercise health beliefs and mental well-being level affect physical activity level. **Material and Methods:** The study was carried out within the Faculty of Health Sciences of Çankırı Karatekin University. After the individuals' demographic information was questioned, the Health Belief Model Scale for Exercise (HBMS-E) was used for exercise health beliefs, the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) was used for mental well-being levels, and the International Physical Activity Questionnaire (IPAQ) short form was used to question physical activity levels. **Results:** 159 female and 35 male volunteers with an average age of 22.76±6.00 participated in the study. The HBMS-E total score average of the individuals participating in the study was 94.47±10.28, the WEMWBS average was 51.25±7.73 and the IPAQ average was 1854.61±1894.18. In IPAQ values, the activity levels of men (3119.01±2496.57) were statistically significantly higher than those of women (1576.28±1619.65) (U=-3.941; p=0.001). It was concluded that all sub-steps of the IPAQ scale except sitting (walking, medium physical activity and high physical activity) and all sub-steps of exercise health belief except the disadvantages of exercise sub-parameter, total score and mental well-being levels are related to each other from very weak to weak (r=0.145-0.483; p<0.05, p<0.001). **Conclusion:** According to the results of the study, it is seen that exercise health beliefs and mental well-being level affect the level of physical activity. Increasing health beliefs and mental wellbeing in the community can potentially enhance levels of physical activity.

Keywords: Physical activity; health beliefs model; mental health

ÖZET Amaç: Çalışmanın amacı, egzersiz sağlık inancı ile mental iyi oluş düzeyinin fiziksel aktivite düzeyini etkileyip etkilemediğini araştırmaktır. **Gereç ve Yöntemler:** Çalışma, Çankırı Karatekin Üniversitesi Sağlık Bilimleri Fakültesi bünyesinde gerçekleştirildi. Bireylerin demografik bilgileri sorgulandıktan sonra egzersiz sağlık inançları için Egzersiz Sağlık İnanç Modeli Ölçeği (ESİMÖ), mental iyi oluş düzeyleri için Warwick-Edinburgh Mental İyi Oluş Ölçeği (WEMİOÖ) ve fiziksel aktivite düzeylerini sorgulamak için Uluslararası Fiziksel Aktivite Anketi (UFAA) kısa formu kullanıldı. **Bulgular:** Çalışmaya yaş ortalamaları 22,76±6,00 olan 159 kadın ve 35 erkek gönüllü katıldı. Çalışmaya katılan bireylerin ESİMÖ toplam puan ortalamaları 94,47±10,28, WEMİOÖ ortalamaları 51,25±7,73 ve UFAA ortalamaları 1854,61±1894,18 idi. UFAA değerlerinde erkeklerin aktivite düzeylerinin (3119,01±2496,57), kadınlarınkinden (1576,28±1619,65) istatistiksel olarak anlamlı daha yüksek olduğu görüldü (U=-3,941; p=0,001). UFAA ölçeğinin oturma hariç tüm (yürüme, orta şiddetli fiziksel aktivite ve şiddetli fiziksel aktivite) alt basamakları ile egzersiz sağlık inancının egzersizin sakıncaları alt parametresi hariç tüm alt basamakları, toplam puanı ve mental iyi oluş düzeylerinin çok zayıftan zayıfa doğru birbiri ile ilişkili olduğu sonucu ortaya çıktı (r=0,145-0,483; p<0,05, p<0,001). **Sonuç:** Yapılan çalışmanın sonucuna göre egzersiz sağlık inancının ve mental iyi oluş düzeyinin fiziksel aktivite düzeyini etkilediği görülmektedir. Toplumda sağlık inançlarının ve mental iyi oluşun artırılması, potansiyel olarak fiziksel aktivite düzeylerini artırabilir.

Anahtar Kelimeler: Fiziksel aktivite; sağlık inanç modeli; mental sağlık

Physical activity is defined as any type of movement performed in daily life that results in energy expenditure in the body through the use of the musculoskeletal system.[1] It is widely accepted that regular physical activity significantly reduces the risk of developing cardiovascular problems such as cerebrovascular events and myocardial infarction.[2] Regular walking programs have also been shown to

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significantly reduce depression, anxiety, and stress in individuals.[3] Studies have shown that exercise contributes to a sense of happiness and well-being and has positive effects on cognitive function and quality of life .[4-6] In short, regular physical activity not only reduces mortality and morbidity rates, but also contributes to the overall mood and well-being of individuals and ensures the formation of a healthy society.[2]

On the other hand, modernization and the conveniences provided by technology make people less active day by day. Decreasing levels of physical activity affect the health of individuals and can lead to various health problems.[7] According to the World Health Organization, physical inactivity is the cause of many chronic diseases and physical inactivity ranks 4th among the "Global Mortality Risk Factors".[8,9]

There are many psychosocial models that examine and explain health behaviour change. These models and theories play a role in the development of health behaviours by increasing individuals' control over their health.[10] Health belief models primarily examine the areas of perceived usefulness, perceived susceptibility, perceived severity, perceived barriers, and self-efficacy and action cues. One of these models and theories, the health belief model, explains changes in people's health behaviours, including exercise. According to the exercise health belief model, an individual's acceptance of exercise and initiation of regular exercise is the perceived benefit of exercise. In addition to the benefits of exercise, the perception that exercise is a waste of time and cost is defined as a perceived barrier. Self-efficacy is the individual's belief that he/she will exercise regularly. Behavioural cues are that an individual is more likely to exercise when his/her health is at risk. In summary, the Health Belief Model is an effective way to examine behaviours that protect and improve health, as well as to measure patient adherence to treatment for any health problem and what motivates or hinders the patient.[11,12]

Early adulthood is an important period for acquiring or completely abandoning regular physical activity habits to achieve a healthy lifestyle.[13] Therefore, this study was designed to investigate whether health beliefs about exercise and mental well-being affect physical activity levels in adults.

MATERIAL AND METHODS

INDIVIDUALS/PARTICIPANT

The population of the cross-sectional study consisted of the students and staff of Çankırı Karatekin University Faculty of Health Sciences who could be reached and who agreed to participate in the study. Participants were aged 18-49 years, had no psychological or communication problems and no history of serious chronic illness (no neurological or cancer diagnosis).

The study was performed in conformity with the Declaration of Helsinki, following approval from Çankırı Karatekin Scientific Research and Publication Ethics Committee on November 18, 2023 (meeting number 09, verification code b135cef80f304048).

Written informed consent was obtained from individuals who met the inclusion criteria after being fully informed of the purpose and methodology of the study.

ASSESSMENT TOOLS

Demographic information (age, height, weight, whether or not they smoked, whether or not they drank alcohol) was collected prior to the study assessments.

Health Belief Model Scale for Exercise (HBMS-E) was used to determine the exercise health beliefs of study participants. The scale was developed by Villar et al.[10] Kartal and Yılmaz conducted the Turkish validity and reliability study.[14] The scale was originally developed with 32 items. However, the authors later removed 7 items due to low factor loadings and finalized the scale as 25 items. The scale consists of five subdimensions: "general health values" (items 1-3), "beliefs about the vulnerability of not exercising" (items 4-6), "beliefs that exercise reduces the risk of disease (threats)" (items 7-13), "beliefs that the benefits of exercise outweigh the costs of exercise" (items 14-19), and "beliefs about the disadvantages of not exercising" (items 20-25). The scale is scored on a Likert-type scale ranging from 1

to 5. In scoring the scale, an increase in the total score indicates an increase in the level of exercise health belief.[14] In this study, Cronbach's alpha reliability coefficient was calculated as 0.90 in general health values subscale; 0.90 in beliefs about the vulnerability of not exercising subscale; 0.86 in beliefs that exercise reduces the risk of disease (threats) subscale; 0.90 in beliefs that the benefits of exercise outweigh the costs of exercise subscale and 0.83 in beliefs about the disadvantages of not exercising subscale.

The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) was developed by Tennant et al. to measure the level of mental well-being of individuals.[15] The scale's Turkish validity and reliability study was performed by Keldal.[16] The scale deals with the positive mental health of individuals by covering psychological well-being and subjective well-being. The scale is made up of 14 items and is a 5-point Likert scale. The scores range from 14 to 70, with higher scores indicating better spiritual well-being.[16] In this study, Cronbach's alpha reliability coefficient of the WEMWBS was found to be 0.85.

The physical activity levels of the individuals participating in the study were measured using the ***International Physical Activity Questionnaire (IPAQ) short form*** developed by Craig and translated into Turkish by Saglam et al.[17] Consisting of 7 questions, the form inquires the time spent by individuals in sitting, walking, moderate and vigorous physical activities in the last week. The energy needed for activities is measured in metabolic equivalent (MET)-minutes. The overall score is determined by adding up the duration and frequency of low, moderate, and vigorous physical activity. Individuals are categorized based on their physical activity level: inactive (low level of physical activity, <600 MET-min/week), minimally (moderate) active (600-3,000 MET-min/week), and sufficiently (high) active (>3,000 MET-min/week).[17]

STATISTICAL ANALYSIS

G*Power 3.1.9.7 was used to calculate the post-hoc power analysis of the study.[18] The research data was analysed with a sample size of 194. The correlation value was calculated as 0.386, with a power of 0.81 and a 5% margin of error for correlation analysis.

Statistical analysis was made with IBM Statistics SPSS v26.0 (SPSS Inc, Armonk, NY, USA). The normality test was carried out using the Kolmogorov-Smirnov test. Mean, standard deviation, counts, and percentages were reported as supplementary statistics. The Mann-Whitney U test was utilized for pairwise comparisons, and the Spearman correlation test was utilized for correlation analysis because the data were not suitable for normal distribution. The evaluation of correlation analysis results was based on the absolute value of the correlation coefficient (r). A correlation coefficient of $0.00 \leq r \leq 0.25$ indicates a very weak relationship between variables; $0.26 \leq r \leq 0.49$ indicates a weak relationship; $0.50 \leq r \leq 0.69$ indicates a moderate relationship; $0.70 \leq r \leq 0.89$ indicates a strong relationship; and $0.90 \leq r \leq 1.00$ indicates a very strong relationship.[19] For p value 0.05 and 0.001 were considered the lowest levels of significance. The Cronbach's alpha was calculated to determine internal consistency. Values of 0.7 for Cronbach's alpha is considered as minimum acceptable values.[20]

RESULTS

DEMOGRAPHIC CHARACTERISTICS OF INDIVIDUALS

The evaluation of the results of this cross-sectional study is based on the responses of 194 volunteers who were willing to take part in the study. Demographic characteristics of all individuals are summarized in Table 1. Participants ranged from 18 to 49 years old, with average age of 22.76±6.00 and average body mass index (BMI) of 22.43±3.41 kg/m^2. The majority of the individuals who participated in the study were women (82%). When the smoking and alcohol use status of the individuals was questioned, it was determined that 54 (27.8%) of the individuals smoked and 24 (12.4%) used alcohol (Table 1).

COMPARISON OF PHYSICAL ACTIVITY LEVELS, EXERCISE HEALTH BELIEFS, AND MENTAL WELL-BEING OF INDIVIDUALS BY DEMOGRAPHIC CHARACTERISTICS

When the results are analysed according to the gender differences of the individuals participating in the study, it is seen in Table 2 that the activity levels of

TABLE 1: Demographic characteristics of participants.

n=194	X±SD			Minimum-maximum
Year (year)	22.76±6.00			18-49
Height (m)	1.66±0.08			1.40-1.93
Weight (kg)	62.07±11.92			40-125
BMI (kg/m^2)	22.43±3.41			15.60-36.10
		n	%	
Gender	Female	159	82	
	Male	35	18	
Smoking	Smoker	54	27.8	
	Non-smoker	140	72.2	
Alchol	User	24	12.4	
	Non-user	170	87.6	

SD: Standard deviation; BMI: Body mass index.

men (3119.01±2496.57) are higher than the activity levels of women (1576.28±1619.65) in IPAQ scores and the difference in favour of men is statistically significant (p=0.001). When comparing exercise health beliefs between women and men, the total score was found to be higher in men. However, the difference was not statistically significant (p>0.05). In the WEMWBS, which is another assessment scale, the total scores of males were higher than females, and the difference between them was statistically significant (p=0.019) (Table 2).

Differences in terms of BMI below and above 25, in Table 2, it was found that individuals with a BMI below 25 had higher scores in physical activity, health beliefs, and mental well-being, but the difference was not statistically significant (p>0.05) (Table 2).

According to the IPAQ and HBMS-E, in Table 2; it was found that non-smokers scored higher than smokers (1684.47±1818.22) and (93.49±10.89) with scores of (2295.72±2040.08) and (97.01±10.93), respectively, and the differences were found to be statistically significant (p=0.016; p=0.025). According to the WEMWBS, smokers (50.92±7.39) scored lower than non-smokers (52.09±8.56), and the difference between the groups was not statistically significant (p>0.05) (Table 2).

When the individuals were compared according to whether they had consumed alcohol or not, in Table 2, it was seen that in both physical activity levels and exercise health belief and mental well-being levels, individuals who did not use alcohol scored (3315.75±2345.93), (99.45±8.89) and (54.79±6.71), (1648.33±1736.51), (93.77±11.09) and (50.75±7.75), respectively, and the difference between the groups was statistically significant (p=0.001; p=0.010; p=0.027) (Table 2).

EXERCISE HEALTH BELIEFS AND MENTAL WELL-BEING LEVELS OF INDIVIDUALS ACCORDING TO THEIR PHYSICAL ACTIVITY LEVELS

When participants in the study were grouped into low, medium and high levels of physical activity, in Table 3, it was seen that individuals with low physical activity (10.43±2.11) scored lower in the general health belief sub-parameter of the HBMS-E compared to individuals with moderate (11.31±2.32) and high (11.50±2.71) physical activity levels and the difference between the groups was statistically significant (p<0.05). In another sub-parameter of the scale, beliefs about the seriousness of not exercising, it was determined that individuals with low physical activity level (14.13±1.66) had lower scores than individuals with moderate (14.65±3.09) and high (15.18±2.48) physical activity levels and the difference between the groups was also significant (p<0.05). According to the sub-heading of beliefs that exercise reduces the risk of disease (threats), individuals with low physical activity scored 25.90±5.2, individuals with moderate physical activity scored

TABLE 2: Comparison of physical activity levels, exercise health beliefs, and mental well-being of individuals by demographic characteristics.

		IPAQ			Exercise Health Belief Model Scale			Warwick-Edinburgh Mental Well-Being Scale		
		X±SD	U	p value	X±SD	u	p value	X±SD	u	p value
Gender	Female	1576.28±1619.65	-3.941	**0.001***	94.26±10.85	-0.987	0.324	50.69±7.72	-2.351	**0.019***
	Male	3119.01±2496.57			95.42±11.69			53.77±7.38		
BMI	<25	1963.81±2121.84	-0.256	0.798	96.77±13.80	-2.418	0.166	51.57±7.94	-0.731	0.465
	>25	1826.25±1840.85			93.87±10.10			51.16±7.70		
Smoking	Smoker	1684.47±1818.22	-2.413	**0.016***	93.49±10.89	-2.235	**0.025***	50.92±7.39	-0.997	0.319
	Non-smoker	2295.72±2040.08			97.01±10.93			52.09±8.56		
Alchol	User	1648.33±1736.51	-3.763	**0.001***	93.77±11.09	-2.577	**0.010***	50.75±7.75	-2.207	**0.027***
	Non-user	3315.75±2345.93			99.45±8.89			54.79±6.71		

IPAQ: International Physical Activity Questionnaire short form; SD: Standard deviation; BMI: Body mass index; Mann-Whitney U test, p<0.05.

28.71±3.73 and individuals with high physical activity scored 28.71±3.73, and the difference between all three groups was found to be significant in favour of individuals with high physical activity (p<0.05) (Table 3).

In another subscale of the HBMS-E, beliefs that exercise benefits outweigh exercise costs, there was a statistically significant difference between all groups and individuals with low physical activity (22.60±3.88) had the lowest scores compared to individuals with moderate (25.55±4.14) and high (27.63±3.70) physical activity (p<0.05). It was found that there was no significant difference between the groups in terms of the scores obtained by individuals with low (15.90±4.42) and individuals with moderate (14.60±3.75) and high (15.84±5.53) physical activity in the subheading of beliefs about the disadvantages of not exercising only in the HBMS-E (p>0.05). When individuals were grouped according to physical activity level, it was seen that the total score of the HBMS-E was 88.56±9.60 for individuals with low physical activity level, 94.90±10.18 for individuals with moderate physical activity level, and 101.05±9.95 for individuals with high physical activity level, and the difference between the groups was statistically significant (p<0.05) (Table 3).

WEMWBS scores were compared according to physical activity levels of individuals, in Table 3, it was found that individuals with low (47.35±8.98) physical activity level had the lowest score compared to individuals with moderate (52.17±6.54) and high (54.68±5.84) physical activity level, and the difference between the groups was statistically significant (p<0.05) (Table 3).

THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY LEVELS, EXERCISE HEALTH BELIEFS, AND MENTAL WELL-BEING

When the relationship between sitting, walking, medium physical activity and high physical activity sub-steps of IPAQ scale and sub-steps of HBMS-E, total score and mental well-being levels were evaluated, in Table 4, we concluded that all parameters except sitting were related to each other. Among the physical activity levels, walking was positively and very weakly to weakly correlated with all parameters of exercise health beliefs, including the total score, except for the inconvenience sub-parameter, and with the WEMWBS score (r=0.145-0.428, p<0.05*, p<0.001). Medium physical activity was positively associated with the threats and costs sub-item of the exercise health belief, the total score, and the mental well-being level from very low to low (r=0.192-0.313; p<0.001). High physical activity level was positively associated with all items of exercise health beliefs except the disadvantages sub-item, total score, and WEMWBS, ranging from very weak to weak (r=0.176-0.483; p<0.001) (Table 4).

DISCUSSION

This study was designed to investigate whether exercise health beliefs and mental well-being level affect physical activity levels of individuals. In general, ac-

TABLE 3: Exercise health beliefs and mental well-being levels of individuals according to their physical activity levels.

		IPAQ						
		Low Intensity (60)	Moderate Intensity (90)	High Intensity (44)	χ^2	p value	Post-Hoc	η^2
The Exercise Health Belief Model Scale	General health	10.43±2.11	11.31±2.32	11.50±2.71	6.642	0.036	2>1, 3>1	0.034
	Beliefs about the vulnerability of not exercising	14.13±1.66	14.65±3.09	15.18±2.48	9.491	0.009	2>1, 3>1	0.021
	Beliefs that exercise reduces the risk of disease (threats)	25.90±5.21	28.71±3.73	28.71±3.73	35.950	0.001	2>1, 3>1, 3>2	0.183
	Beliefs that the benefits of exercise outweigh the costs of exercise	22.60±3.88	25.55±4.14	27.63±3.70	40.570	0.001	2>1, 3>1, 3>2	0.184
	Beliefs about the disadvantages of not exercising	15.90±4.42	14.60±3.75	15.84±5.53	3.895	0.143		
	Total	88.56±9.60	94.90±10.18	101.05±9.95	46.049	0.001	2>1, 3>1, 3>2	0.188
Warwick-Edinburgh Mental Well-Being Scale		47.35±8.98	52.17±6.54	54.68±5.84	24.940	0.001	2>1, 3>1	0.131

IPAQ: International Physical Activity Questionnaire short form; Kruskal-Wallis test, $p<0.05$, $\eta 2$: Effect size

TABLE 4: The relationship between physical activity levels, exercise health beliefs, and mental well-being.

	Exercise Health Belief Model Scale						
	General health r (p)	Beliefs about the vulnerability of not exercising r (p)	Beliefs that exercise reduces the risk of disease (threats) r (p)	Beliefs that the benefits of exercise outweigh the costs of exercise r (p)	Beliefs about the disadvantages of not exercising r (p)	Total r (p)	Warwick-Edinburgh Mental Well-Being Scale r (p)
Sitting	0.006	0.011	0.083	0.036	0.166	0.053	-0.070
	(0.941)	(0.896)	(0.336)	(0.678)	(0.053)	(0.538)	(0.416)
Walking	**0.145***	**0.267****	**0.352****	**0.391****	0.008	**0.428****	**0.289****
	(0.044)	**(0.001)**	**(0.001)**	**(0.001)**	(0.908)	**(0.001)**	**(0.001)**
Medium intensity	0.125	0.042	**0.219****	**0.192****	0.101	**0.193****	**0.313****
	(0.082)	(0.563)	**(0.002)**	**(0.007)**	(0.160)	**(0.007)**	**(0.001)**
High intensity	0.048	0.110	**0.213****	**0.239****	0.101	**0.256****	**0.213****
	(0.509)	(0.126)	**(0.003)**	**(0.001)**	(0.159)	**(0.001)**	**(0.003)**
IPAQ total	**0.176****	**0.282****	**0.392****	**0.432****	0.002	**0.483****	**0.389****
	(0.014)	**(0.001)**	**(0.001)**	**(0.001)**	(0.982)	**(0.001)**	**(0.001)**

IPAQ: International Physical Activity Questionnaire short form; Spearman correlation test; *p<0.05; **p<0.001.

cording to the results of the study, it was revealed that the increase in the level of exercise health belief and mental well-being in individuals led to an increase in the physical activity level of individuals. According to demographic information, it was found that physical activity and mental well-being levels of male individuals were higher than female individuals, physical activity levels, exercise health beliefs and mental well-being levels of individuals differed with smoking and alcohol use, and it was found to be less in smokers and alcohol users. In addition, the most striking finding of the study can be interpreted that there was a relationship between all physical activity levels (walking, moderate and high physical activity level) except sitting and exercise health beliefs and mental well-being levels.

It is inevitable for individuals to realize the importance of their health when they become ill. Therefore, it is necessary to protect and improve health before becoming ill. An individual's behaviours, attitudes, beliefs, and desires are important not only for strengthening and protecting health, but also for treatment.[21]

The study compared the physical activity levels of male and female participants and found that males had higher levels of physical activity. When the literature on this subject is analysed, it can be seen that the results of the study are in line with the literature. Sheng et al. discovered that male students exhibited greater physical activity and exercise self-efficacy compared to female students, and their perception of barriers to exercise was lower.[22] Although male individuals had higher exercise health beliefs, the current study did not yield statistically significant results. The lack of statistical significance may be attributed to the limited sample size of the study, which only included individuals from the university and did not account for varying educational levels.

Mental well-being is defined as having a positive self-image, being satisfied with oneself, being aware of one's individual needs, being able to act independently, having goals in life, having good relationships with people around them, being aware of one's potential, and making efforts to improve one's potential.[23] When the mental well-being levels of the individuals participating in the study were compared according to gender differences, it was concluded that male individuals were at a higher level. Demir et al. reported that male athletes had higher levels of physical activity and mental well-being in their study of athletes.[24] In this regard, the results of the study are parallel to the literature.

No significant difference was found in participants' physical activity levels, exercise health beliefs, and mental well-being based on BMI. Similarly, another study with university students also found no difference in physical activity levels and exercise health beliefs based on BMI.[25]

It can be seen that physical activity and health beliefs of individuals are significantly different according to whether they smoke or not, and although mental well-being is higher in non-smokers, the difference is not significant. In the case of alcohol consumption, all three measures were found to be significantly different, favouring the non-drinking group. When the literature on this subject is examined, Yılmaz's study revealed that, contrary to the results of the study, the physical activity level of the smoker group was higher, while there was no difference between the two groups in exercise health perception.[25] They also stated that alcohol consumption did not affect the level of physical activity or exercise health beliefs, that is, there was no difference between the group who used alcohol and the group who did not use alcohol. It is thought that the reason for the different results of the studies may be due to the fact that both studies were cross-sectional. In the present study, which asked about mental wellbeing according to whether or not they had consumed alcohol, there are studies in the literature showing that excessive alcohol consumption is associated with poor mental health and depressive symptoms.[26,27] Therefore, it can be noted that the findings of the study are compatible with the literature in terms of mental wellbeing outcomes.

In the study, the physical activity levels of individuals were grouped as low, medium and high, and the subcategories of exercise health beliefs and mental well-being were compared according to the groups. As a result of the study, it is seen that there is

an increase in all the subcategories of exercise health beliefs and mental well-being levels in parallel with the increase in physical activity level, except for the belief about the disadvantages of not exercising, and this result is consistent with the studies in the literature. In a study conducted by Ünal et al. among young adults, individuals were divided into exercisers and non-exercisers and it was reported that exercisers had more positive attitudes about the benefits of exercise, their motivation level was higher and non-exercisers had more negative attitudes.[28] In another study, Yılmaz et al. compared active and non-active university students in terms of mental well-being and reported that the mental well-being of active university students was statistically higher.[29]

Finally, in the study in which physical activity level was grouped as sitting, walking, moderate and high intensity physical activity, it was concluded that physical activity levels except sitting, exercise health beliefs levels and mental well-being levels were related to each other. When these results are compared with the studies in the literature, it is seen that there are different results. In a study in which physical activity levels were divided into sedentary and regular exercisers and health beliefs were compared between the groups, regular exercise was found to be positively and strongly associated with all sub-parameters of exercise health beliefs.[30] Webber et al. and Sudholz et al. reported that participants' beliefs about sedentary behaviour were superficial and that they did not have sufficient information about the long-term consequences of sedentary behaviour.[31,32] Consistent with the results of this study, sedentary behaviour, one of the physical activity levels, was not associated with health beliefs about physical activity and mental well-being. In contrast to this result, a study conducted by Yılmaz among university students reported that although the physical activity level of the students was low, their health perception was high and there was no relationship between physical activity level and health perception.[25] It was also observed that the average physical activity level of the individuals participating in the study was moderate and their perception of health and mental well-being were high. The fact that there are different results in the literature suggests that there may be different factors (such as climate, socio-cultural level) that can affect the level of physical activity and therefore different results may be obtained. In another study, Çakır and Ergin examined the relationship between physical activity and mental well-being and found that physical activity was positively associated with well-being.[33] It can be seen that this result is compatible with the result of current study.

The limitations of the study include the use of only people who agreed to take part in the study, the uneven ratio of men to women, and the fact that it does not reflect the effect of different factors such as education level and occupation.

CONCLUSION

According to the results of the study, it is clear that exercise health beliefs and mental well-being levels affect the level of physical activity. Therefore, it is thought that levels of physical activity can be increased by increasing health beliefs about exercise and mental well-being in the community. It was concluded that more training, brochures or activities should be organised to ensure this increase in health beliefs about exercise, and that identifying the factors of mental well-being and providing the necessary support could be beneficial in terms of health sustainability and creating a healthy society.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

This study is entirely author's own work and no other author contribution.

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