

The Effect of Physical Activity Applied to Housewives on their Well-Being and Happiness Levels

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Abstract Physical activity is the whole of daily living activities, recreational activities, exercises and sports activities that occur with energy consumption using skeletal muscles and joints. The aim of this study was to investigate the effect of regular Physical Activity Programs (PAP) on the general well-being and happiness levels of women who started doing sports for the first time within the scope of Kocaeli Metropolitan Municipality's Mother City Project. Thirty-five women (age: 42.91 ± 7.269) participated voluntarily in this study. Participants took part in Pilates, Zumba and step aerobics sessions for one hour, three days a week (Monday, Wednesday and Friday). A PAP, consisting of an 8-kilometer walking program, was applied on Tuesdays, Thursdays and Saturdays for 12 weeks. The Well-Being Scale and Happiness Scale were administered to the participants before and after the PAP. The SPSS 25 software package was used for data analysis. A dependent two-sample t-test was used to compare pretest-posttest data. Descriptive statistics values were also included. According to the analysis results, a statistically significant difference was detected between the pretest and posttest scores of the total Well-Being Scale and its sub-dimensions: Positive Emotions, Positive Relationships, Happiness, Engagement, Meaning, Accomplishment and Health ($p < 0.05$). No statistically significant difference was detected in the other sub-dimensions: Negative Emotions and Loneliness ($p > 0.05$). Additionally, a statistically significant difference was found in the Happiness Scale in the pretest and posttest comparison ($p < 0.05$). As a result, it has been observed that regular physical activity programs positively affect the general well-being and happiness levels of housewives. In this context, it is recommended that housewives participate in more physical activities.

Key Words women's health, physical activity, well-being, happiness

1. Introduction

Physical activity is reported to be associated with increased happiness; some studies suggest that exercising as little as 10 minutes a week or exercising one day a week can increase happiness levels [1]. Regular physical activity is linked to higher levels of subjective well-being, including happiness, life satisfaction, and self-esteem; even short-term participation in exercise (4 weeks) can contribute to increased well-being [2]. Physical activity has been reported to be positively associated with general well-being, lower levels of anxiety and depression, and positive mood, especially for women and those over 40 years of age [3]. Both cross-sectional and longitudinal analyses show that physical activity is associated with emotional health among older women, and that those who maintain or adopt physical activity have better outcomes (Lee and Russell, 2003). Long-term quality of life in older adults, psychological variables such as self-efficacy

and physical self-esteem, and the positive affect that mediates this relationship can be increased by physical activity [4]. Prolonged leisure-time physical activity may be associated with a reduced likelihood of unhappiness, while changes in activity levels may affect mood state [5].

Zumba, a Latin-themed aerobic dance, has gained popularity around the world and is being studied for its potential benefits to both physiological and psychological health. There are some studies showing that Zumba exercises significantly improve cardiovascular health, reduce body fat, and reduce inflammatory biomarkers such as interleukin-6 and white blood cell count, and that they may contribute to overall well-being [6], [7]. Additionally, other studies have reported that participants in Zumba programs experience major improvements in mood, with a decrease in fatigue and an increase in vitality, and increases in health-related quality of life, including physical functionality, general health, energy levels

and emotional well-being [6]–[9]. In their study, Lahiani et al. [10] stated that a 12-week Zumba training program could effectively improve postural balance, lower extremity strength, mood and quality of life in postmenopausal women. This also shows that it can benefit housewives.

Pilates is a popular exercise known for its effectiveness in improving rehabilitation, conditioning, flexibility, strength, posture, balance and body awareness, and where positive results have been observed in various populations [11]–[14]. In one study, it was reported that it improves sleep quality, reduces anxiety, depression and fatigue, and provides significant improvements in sleep duration and disorders in postmenopausal women [15]. Norouzi and Makvandi [16] stated in their study that Pilates exercises increase endurance and reduce psychological fatigue. Cruz-Ferreira et al. [17] reported improvements in adult women's life satisfaction, physical self-perception, and health status after six months of Pilates-based mat exercises. Contrary to these studies, there are studies stating that Pilates exercises do not significantly change moods such as stress, depression, anger, vitality, fatigue, confusion, relaxation and happiness in non-athlete women [18]–[20].

For all these reasons, physical activity is a widely recognized factor that contributes to overall well-being and happiness. However, no study has been found investigating the effects of exercises such as Zumba, Pilates and step aerobics on the well-being and happiness levels of housewives. This synthesis (Zumba, Pilates and step aerobics) can be effective in improving the mental health of individuals, especially housewives, with physical activity. Therefore, this study aimed to investigate the effects of Zumba, Pilates and step aerobic exercises applied to housewives for 12 weeks on their well-being and happiness levels.

2. Method

A. Participants

Within the scope of Kocaeli Metropolitan Municipality Mother City Project, 35 women (age: 42.91 ± 7.269 years) who started doing exercises for the first time participated voluntarily in this study.

B. Data Collection

A personal information form, in which demographic information was sought, was applied to all participants. Additionally, the PERMA Scale, whose validity and reliability study was conducted by Demirci et al. [21], and the Happiness Scale developed by Demirci and Ekşi [22], were applied to determine the participants' well-being and happiness levels before and after physical activity programs (PAP).

C. Personal Information Form

The personal information form was created by the researcher. In this information form, according to the purpose of the research, questions were asked about the participants' age, height, body weight, marital status, whether they had a chronic disease, educational status, profession, economic

status, whether they participated in sports / recreational activities (walking, swimming) in their spare time, and how long they had been participating

D. Physical Activity Programs

The participants performed Pilates, Zumba and step aerobic exercises for one hour, three days a week (Monday, Wednesday and Friday). Physical activity programs consisting of an 8-kilometer walking program were implemented on Tuesdays, Thursdays and Saturdays for 12 weeks.

The Pilates session was scheduled for 60 minutes, with warm-up (5 minutes), Pilates (40 minutes), balance exercise (10 minutes) and cool-down (5 minutes) every Monday.

The Zumba session was scheduled for 60 minutes, with warm-up (5 minutes), Zumba (50 minutes), and cool-down (5 minutes) every Wednesday.

The step aerobics session was scheduled for 60 minutes, with warm-up (5 minutes), step aerobics (35 minutes), balance exercise (15 minutes) and cool-down (5 minutes) every Friday.

The 8-km walking exercises were applied outdoors (beach, park, etc.) every Tuesday, Thursday and Saturday. Details of the training programs are presented in the tables below (Table 1, Table 2).

E. Statistical Analysis

The data were analyzed using the SPSS v. 25 software package. Descriptive statistics values (mean, std deviation, etc.) were calculated. The suitability of the data for normal distribution was determined by the statistical tests method. The paired samples t-test was used to compare the pretest-posttest data for variables that conform to normal distribution. Also, the Wilcoxon signed-rank test was used for variables that do not conform to normal distribution. Data were analyzed with a significance level of 0.05.

3. Results

The minimum, maximum, mean and standard deviation values of the descriptive data of the participants are presented in Table 3.

The results of the comparison of pretest-posttest data of normally distributed parameters are presented in Table 4.

The results of the comparison of pretest-posttest data of parameters that do not show normal distribution are presented in Table 5.

4. Discussion

Looking at the literature, it can be seen that physical activity positively affects people's psychology, and accordingly, parameters such as feeling good and being healthy [23]–[25]. In this context, in our study, the effect of regular physical activity programs (PAP) on the general well-being and happiness levels of women who started doing sports for the first time within the scope of Kocaeli Metropolitan Municipality's Mother City Project was investigated. The results of our study also support the literature, and a statistically

Exercise Type	Exercises performed	Repetition/Duration	No. of sets	Resting
Warm-up	Warm-up and stretching	5 min.		
PILATES Exercises	Toe touch	8 rep.	3 sets	30 s.
	Bridging/pelvic lift	8 rep.	3 sets	30 s.
	Chest lift	8 rep.	3 sets	30 s.
	Hundred	8 rep.	3 sets	30 s.
	Single leg stretch	8 rep.	3 sets	30 s.
	Double leg stretch	8 rep.	3 sets	30 s.
	Rolling like a ball	8 rep.	3 sets	30 s.
	Criss cross	8 rep.	3 sets	30 s.
	Roll down	8 rep.	3 sets	30 s.
	Single straight leg stretch	8 rep.	3 sets	30 s.
Double straight leg stretch	8 rep.	3 sets	30 s.	
Balance Exercises	Trampoline exercises	5 min.		
	Balance pad exercises	5 min.		
Cool-down	Cool-down	5 min.		

Table 1: Training program for Pilates exercises

Exercise Type	Exercises performed	Repetition/Duration	No. of sets	Resting
Warm-up	Warmup and stretching	5 min.		
STEP AEROBIC Exercises	Basic step	2 min.	1 set	15s.
	Step mambo	2 min.	1 set	15s.
	Double grapevine	2 min.	1 set	15s.
	Mambo behind mambo	2 min.	1 set	15s.
	Turn mambo	2 min.	1 set	15s.
	Step behind toe touch	2 min.	1 set	15s.
	Step kick	2 min.	1 set	15s.
	Behind mambo	2 min.	1 set	15s.
	Turn behind mambo	2 min.	1 set	15s.
	Step cha-cha	2 min.	1 set	15s.
	Knee lift	2 min.	1 set	15s.
	Side cross side double jump	2 min.	1 set	15s.
	Step side-to-side jump leg curl (left and right)	2 min.	1 set	15s.
	Back turn mambo	2 min.	1 set	15s.
	Step fly right	2 min.	1 set	15s.
	Step fly left	2 min.	1 set	15s.
Balance Exercises	BOSU ball exercises	8 min.		
	Mini band exercises	7 min.		
Cool-down	Cool-down	5 min.		

Table 2: Training program for step aerobic exercises

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Age	35	22	55	42.91	7.269
Height (cm) (Pretest)	35	143	168	155.66	5.258
Weight (kg) (Pretest)	35	71.7	125.0	92.229	11.6872
Height (cm) (Posttest)	35	143	168	155.66	5.25773
Weight (kg) (Posttest))	35	66.5	118.4	84.88	11.5272

Table 3: Descriptive statistics of participants

significant increase was found in the total score of the Well-Being Scale and the sub-dimensions of Positive Emotions, Positive Relationships, Happiness, Engagement, Meaning, Accomplishment and Health after physical activity for the women participating in the study ($p < 0.05$). However, no significant difference was detected in the other sub-dimensions (Negative Emotions and Loneliness) ($p > 0.05$). The fact that there was a statistically significant increase in the total score of the Well-Being Scale and the sub-dimensions of Positive Emotions, Positive Relationships, Happiness, Engagement,

Variables	Mean	N	Standard Deviation	t	p
Positive emotions (Pretest)	4.1048	35	0.93155	-14.096	0.000*
Positive emotions (Posttest)	7.9905	35	1.43824		
Positive relationships (Pretest)	4.2381	35	1.51155	-11.563	0.000*
Positive relationships (Posttest)	7.7619	35	1.40394		
Total PERMA score (Pretest)	3.8732	35	0.62967	-20.030	0.000*
Total PERMA score (Posttest)	8.0375	35	1.22411		
Total happiness score (Pretest)	19.0000	35	3.26298	-12.311	0.000*
Total happiness score (Posttest)	25.1429	35	3.03066		

Table 4: Findings regarding the comparison of pretest-posttest data of normally distributed parameters

Meaning, Accomplishment and Health after the PAP in the results of our study may be due to the fact that the group participating in our study consisted of housewives, who are a special group, as housewives' lack of socialization environ-

Variables	Mean	N	Standard Deviation	t	p
Engagement (Pretest)	3.6286	35	0.73995	-5.093	0.000*
Engagement (Posttest)	8.5619	35	1.54194		
Meaning (Pretest)	3.4381	35	0.89942	-5.149	0.000*
Meaning (Posttest)	7.7619	35	1.41322		
Accomplishment (Pretest)	4.0286	35	1.07062	-5.138	0.000*
Accomplishment (Posttest)	7.9143	35	1.54527		
Health (Pretest)	4.0476	35	1.00698	-4.954	0.000*
Health (Posttest)	7.1429	35	1.83518		
Negative Emotions (Pretest)	4.2476	35	1.07965	-1.610	0.107
Negative Emotions (Posttest)	4.8286	35	1.83889		
Loneliness (Pretest)	6.4000	35	1.09006	-0.867	0.386
Loneliness (Posttest)	5.8857	35	3.11327		

Table 5: Findings regarding the comparison of pretest-posttest data of parameters that do not show normal distribution

ments or engagement with limited topics and people may have caused differences in these dimensions after the PAP. In a study similar to this study, it was stated that while physical activity had a positive effect, especially on positive emotions, it had a weaker relationship with cognitive well-being and was not associated with negative emotions [24].

In another study, the dose-response relationships of different physical activity areas (leisure, housework, work and transportation) with mental well-being were examined and it was determined that especially intense physical activity had strong effects on mental well-being [25]. In a study on European adults, Marques et al. [26] reported that physical activity levels showed a positive relationship with self-rated well-being in six dimensions, and physical activity frequency showed a linear relationship with six dimensions of well-being. Apart from these, it has been determined that different areas of physical activity (leisure, work, housework, transportation) are associated with health indicators such as feeling healthy and obesity [23]. One of the findings of our study was that there was a statistically significant increase in Happiness Scale scores after physical activity ($p < 0.05$). This shows that regular physical activity programs positively affect the general well-being and happiness levels of housewives.

Regular physical activity improves physical and psychological well-being, including better mood and reduced stress levels in women [27]. Li et al. [28] stated that higher frequency of exercise participation is positively associated with happiness and that physical exercise improves mental and general health conditions. Similar to this situation, in another study, regular recreational activities applied for eight weeks

led to a 21.96% decrease in perceived stress levels and an 18.01% increase in happiness levels in sedentary women [29]. Similarly, Iwon et al. [2] reported that even 4 weeks of regular physical activity led to higher levels of happiness, life satisfaction and self-esteem. Another study stated that physical activity and group discussion could increase happiness levels in postmenopausal women [30].

As a result, it can be said that regular physical activity programs applied for 12 weeks positively affect the general well-being and happiness levels of housewives. Based on this study, we can say that physical activity has positive effects not only on physical health, but also on mental health and well-being. In this context, various strategies can be developed to encourage and provide access to physical activity in society. It is important to provide programs and support for specific groups, especially housewives. It is thought that such programs can help improve the physical and mental health of individuals and increase the general well-being of society.

Conflict of interest

The authors declare no conflict of interests. All authors read and approved final version of the paper.

Authors Contribution

All authors contributed equally in this paper.

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