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Research Article

The Effects of Pilates Exercise as a Recreational Activity on Quality of Life and Psychology in Women

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Abstract: The aim of the study was to examine the effects of Pilates exercises on women's quality of life and psychological resilience levels. The sample group of this study consisted of 315 female individuals between the ages of 18-54. Demographic information form, Brief Psychological Resilience Scale and Quality of Life Scale (SF-12) were used as data collection tools. In statistical tests, it was determined that the data did not show normal distribution and the differences between the groups were analyzed with Mann-Whitney U and Kruskal-Wallis tests. The relationships were determined by Spearman correlation analysis. The results of the study revealed that practicing Pilates had a significant effect on quality of life, but did not make a significant difference on psychological resilience. In addition, the frequency of Pilates was determined as an important factor affecting the quality of life of the participants. Significant differences were found on psychological resilience according to age and education level, and it was found that working individuals and individuals living in the city had higher levels of psychological resilience. Although a low-level relationship was found between Pilates participation and psychological resilience, this relationship was not statistically significant. In conclusion, while Pilates exercises improve quality of life, they have less pronounced effects on psychological resilience.

Keywords: Pilates exercise, psychological resilience, recreational activity, quality of life.

1. Introduction

Pilates was developed by Joseph Hubertus Pilates in the early 20th century and became popular on a global scale, especially in the United States from the 1920s onwards. Pilates, which is considered an important exercise method in the field of healthy living and physical fitness today, has a systematic approach shaped by the disciplines of anatomy, kinesiology and physiology. These exercises, which can be adapted to individual needs, support a holistic understanding of health by increasing physical and mental awareness (Eruzun & Türkmen, 2018).

The sedentary lifestyle, stress and health problems brought by modern life negatively affect the quality of life of individuals (Aykın, 2018; Akarsu et al., 2023). Women, in particular, may face various difficulties in maintaining the balance between work, family and social life. Today, various approaches are being developed to protect physical and mental health, and the contribution of recreational activities to the well-being of individuals is gaining more and more importance (Demirtaş et al., 2017; Dinç et al., 2018; Durhan et al., 2022; Başkan et al., 2017). In this context, Pilates is a low intensity but effective exercise method that both improves physical health and provides mental balance (Vancini et al., 2017; Wells et al., 2012).

Pilates exercises are known for their positive effects on physical health and also make significant contributions to mental and emotional well-being (Smith, 2006). Studies show that regular Pilates exercises increase muscle strength, flexibility and balance, while reducing individuals' stress levels and improving their general well-being (Isacowitz, 2022; Sanioğlu

& Maçkalı, 2021). Studies conducted particularly on women have shown that Pilates provides significant benefits in terms of psychological relaxation, increased self-confidence and stress management (Rydeard et al., 2006; Shim et al., 2010).

In this study, the physical and psychological effects of Pilates will be discussed within a theoretical framework. First of all, the Holistic Health Model emphasizes that the physical, mental and emotional health of an individual is interconnected and draws attention to the role of regular exercise in increasing the quality of life (Matsalla & Warners, 2012; Bayrakdar et al., 2020). Within the framework of this model, Pilates contributes to a holistic understanding of health by supporting the physical health of individuals as well as positively affecting their psychological well-being. In addition, the Self-Determination Theory explains individuals' motivations within the framework of three basic psychological needs: autonomy, competence and sense of belonging (Deci & Ryan, 2000). It is thought that Pilates exercises contribute to the individual's increasing body awareness, developing physical competence and creating a positive perception of himself (Gökmen, 2015; Şimşek & Katırcı, 2011; Yakut et al., 2006). Accordingly, it is expected that individuals' commitment to exercise will increase and they will acquire a sustainable physical activity habit (Bayrakdar et al., 2019).

Psychological Resilience Theory, which offers an important theoretical approach in increasing individuals' stress coping skills and psychological resilience, emphasizes the role of regular physical activity in individuals' stress management and mental balance (Fredrickson, 2004). In this context, it is thought that Pilates exercises increase individuals' psychological resilience by making them more resistant to stress factors. The development of individuals' ability to cope with the difficulties they encounter in their daily lives stands out as an important factor that increases their general quality of life. Considering that Pilates reduces individuals' stress levels and provides mental relaxation with controlled movements and breathing techniques, it can be said that it has a strong connection with this theory (Demir & Çilli, 2018; Vural et al., 2010).

The research aims to comprehensively address the effects of Pilates exercise on women's quality of life and psychological well-being. The role of Pilates on coping with stress, happiness level, psychological resilience and general quality of life will be evaluated, and how exercise contributes to the spiritual and social development of individuals beyond being a physical activity will be examined. In addition, the contributions of regular practice of Pilates as a recreational activity to women's daily lives will also be discussed. Considering the effects of recreational activities on the way an individual evaluates their free time, Pilates is thought to be an exercise that strengthens social ties, increases self-confidence and contributes positively to general psychological well-being. The findings of this study are expected to make significant contributions to the literature in the fields of sports sciences, psychology and health. It is anticipated that it will guide the development of new approaches, especially to encourage women's participation in physical activity, increase their quality of life and enable them to acquire sustainable healthy living habits.

2. Materials and Methods

2.1. Research Group

When the research conducted by Ulukan (2020) was taken as a reference, the effect size = 1.6, alpha = 0.05 and power = 0.95 for the psychological resilience scores obtained from two different groups (those who do pilates and those who do not) were determined as 176 in total. Accordingly, the sample group of our research consisted of 159 women (PG) (height: 164.35 ± 5.86 cm, weight: 62 ± 9.92 kg, BMI: 22.94 ± 3.34 kg/m2) who did pilates exercises and 156 women (NPG) (height: 163.68 ± 6.1 cm, weight: 64.64 ± 12.62 kg, BMI: 24.09 ± 4.34 kg/m2) who did not do pilates exercises, a total of 315 women.

2.2. Research Design

This research was designed within the scope of the relational screening model. The relational screening model is a quantitative research method used to understand and explain the relationships between variables (Karasar, 2016). Data were collected with the scale method within the scope of the quantitative research technique. Within the scope of the research, demographic, socioeconomic, quality of life and psychological resilience levels of individuals who do and do not do pilates were compared. The research data were presented with descriptive statistics and the relationships

between the variables were examined with statistical analyses. In this context, the status of doing pilates (doing and not doing) was considered as an independent variable; the effects of other independent variables such as age, marital status, education level, employment status, profession, income status, place of residence, frequency of doing pilates on quality of life and psychological resilience were analyzed.

2.3. Data Collection

After obtaining the necessary permissions, the Demographic Information Form, Brief Psychological Resilience Scale and Quality of Life Scale prepared by the researcher were used as data collection tools. Data collection tools were applied on a voluntary basis. Participants were informed about the research before the tools were applied. The application of the data collection tools took an average of 20 minutes.

Demographic Information Form: The demographic information form includes demographic questions regarding age, gender, height, weight, marital status, education status, employment status, profession, income status, and place of residence, and was created by the researchers.

Brief Psychological Resilience Scale (BPRS): This scale is a tool developed to measure individuals' psychological resilience and their capacity to recover. It was first designed by Smith et al. (2008) and then adapted to Turkish by Doğan (2015). This scale is a 5-point Likert-type measurement tool and consists of 6 items in total. Scoring is done with the options "Not at all appropriate" (1), "Not appropriate" (2), "Somewhat appropriate" (3), "Appropriate" (4) and "Completely appropriate" (5). Items 2, 4 and 6 in the scale are reverse coded and these items must first be translated according to the scoring key. High scores obtained after this process indicate that the individual has a high level of psychological resilience, while low scores indicate a lower level of psychological resilience (Doğan, 2015).

Quality of Life Scale (SF-12): The Quality-of-Life Scale is a tool that evaluates the general satisfaction level of individuals with their lives and whether they are healthy. Quality of life is a subjective perception that individuals show when evaluating their own life experiences and is generally directly related to life satisfaction. In our study, the adapted version of WHOQOL-BREF (World Health Organization Quality of Life Form) SF-12 was used. The Quality-of-Life Scale, developed by Ware et al. (1995) and adapted by Soylu and Kütük (2022), was used. In order to measure quality of life, Short Form-36 was developed by Ware et al. (1995). SF-12 Quality of Life Scale was created by taking 12 different items from 8 subheadings of SF-36. Turkish validity and reliability study was conducted by Soylu and Kütük (2022). The scale asks about the functional status, well-being and general health perception of the individual. The Quality-of-Life Scale is usually applied on a 5-point Likert-type scale, and participants are asked to answer each question from "Strongly Disagree" to "Strongly Agree". This scale measures individuals' perceptions and satisfaction levels regarding their quality of life, and its validity and reliability have been tested in various cultural contexts (Soylu & Kütük, 2022).

2.4. Data Analysis

To calculate the sample size, the t tests - Means: Difference between two independent means (two groups) module was used in the G*Power 3.1.9.2 statistics program. The research data were analyzed with the SPSS-27 statistics package program. The Shapiro-Wilk test and the Kolmogorov-Smirnov test were applied to evaluate the conformity of the data to normal distribution in the research. Along with these tests, the skewness and kurtosis values of the variables were also examined (±1.5) in order to support the normality assessment (Büyüköztürk et al., 2020). According to the test results, it was determined that not all variables showed normal distribution ($p<0.05$). Accordingly, non-parametric statistical analysis methods were preferred for the data that did not meet the normality assumption. Within the scope of descriptive statistics, the central tendency measures of the data (mean, median, standard deviation) were calculated, and the general characteristics of their distribution were determined. In the analysis, the Mann-Whitney U test was used for comparing paired groups, and the Kruskal-Wallis test was used for comparing more than two groups. In cases where significant differences were found, pairwise comparison method was used to determine which groups the difference was between. Spearman correlation analysis was used to determine the direction and strength of the relationships between continuous variables. In all statistical analyses, the significance level was accepted as $p<0.05$.

2.5. Ethics Committee Permission

Participants were given permission to participate voluntarily with the informed consent form. In addition, this study was found ethically appropriate by the Giresun University Social Sciences Science and Engineering Sciences Research

Ethics Committee (Date: 06.01.2025, Number: 01/13, Protocol: E-50288587-050.01.04-60783). Before data collection, participants were thoroughly informed about the study through a detailed presentation and subsequently provided written consent. The research was carried out in accordance with the ethical guidelines of the Declaration of Helsinki.

3. Results

Table 1. Comparison of quality of life and psychological resilience levels according to pilates practice status

Variables	Statistics	PG (N=159)	NPG (N=156)	M-WU	p
Quality of Life	Mean± SD	32.57±5.71	23.45±6.43	3751.000	**0.000****
	Avg. Rank	212.41	102.54		
	Tot. Rank	33773.00	15997.00		
Brief Psychological Resilience	Mean± SD	17.35±3.02	17.98±3.15	12366.000	0.964
	Avg. Rank	157,77	158.23		
	Tot. Rank	25086.00	24684.00		

***p<0.01; PG: Pilates Group, NPG: Non-Pilates Group, M-WU: Mann-Whitney U, N: Number of people, Mean: Average, SD: Standard deviation*

As a result of the Mann-Whitney U analysis conducted on the quality of life and psychological resilience scales according to the pilates status in Table 1, it was seen that the effect of the "pilates status" variable on the total quality of life score was significant (U=3751.000; p<0.01), while its effect on the total psychological resilience score was not significant (U=12366.000; p>0.05). When the means were examined, it was determined that the life quality averages of individuals doing pilates (32.57±5.71) were significantly higher than those Non-pilates group. (23.45±6.43).

Table 2. Comparison of quality of life in terms of demographic and socioeconomic characteristics of Pilates groups

Variables	Group	N	Mean	SD	Avg. Rank	K-W	p
Age	18-24 age	31	31.90	5.49	74.79	0.789	0.852
	25-34 age	75	32.56	5.80	79.66		
	35-44 age	38	33.05	6.16	84.61		
	45-54 age	15	32.87	4.91	80.80		
Educational Status	Literate or primary school graduate	1	40.00	-	150.00	5.962	0.202
	Secondary school	6	35.33	8.66	97.17		
	High school	22	30.50	6.36	64.05		
	College / University	110	32.66	5.45	81.04		
	Postgraduate	20	33.20	5.09	83.18		
Occupation	Retired	3	32.33	2.89	70.50	3.235	0.519
	Housewife	16	32.06	7.52	76.13		
	Civil servant	49	32.59	5.06	78.80		
	Worker	13	35.00	7.07	101.54		
	Other	78	32.28	5.56	78.33		
Income Status	10.000- 24.000 TRY	53	31.83	6.26	75.22	1.980	0.577
	25.000- 39.000 TRY	42	32.64	5.65	80.29		
	40.000- 54.000 TRY	32	34.00	5.19	89.44		
	55.000 and above	32	32.31	5.35	78.11		

***p<0.01; K-W: Kruskal-Wallis, Pairwise Comparisons, M-WU: Mann-Whitney U, N: Number of people, Mean: Average, SD: Standard deviation*

Table 2. (Continue)

Variables	Group	N	Mean	SD	Avg. Rank	K-W	p
Pilates Frequency	Once a month, less than once a week (1)	18	27.61	6.45	45.58	12.770	0.002**
	Once a week (2)	20	31.05	7.28	73.20		
	2-4 times a week (3)	121	33.57	4.86	86.24		3>1
		N	Mean	SD	Avg. Rank	M-WU	p
Marital Status	Married	76	32.87	5.67	81.30	3055.000	0.732
	Single	83	32.31	5.78	78.81		
Working Status	Yes	120	32.73	5.69	81.68	2138.500	0.419
	No	39	32.10	5.84	74.83		
Place of Living	City	128	32.53	5.48	79.56	1928.000	0.807
	Country	31	32.77	6.72	81.81		

***p<0.01; K-W: Kruskal-Wallis, Pairwise Comparisons, M-WU: Mann-Whitney U, N: Number of people, Mean: Average, SD: Standard deviation*

Table 3. Comparison of quality of life levels in Non-Pilates groups by demographic and socioeconomic factors

Variables	Group	N	Mean	SD	Avg. Rank	K-W	p
Age	18-24 age	26	21.81	7.51	66.79	3.440	0.329
	25-34 age	71	23.14	5.70	77.29		
	35-44 age	41	24.90	6.89	87.48		
	45-54 age	18	23.78	6.24	79.75		
Educational Status	Literate or primary school graduate	4	26.25	7.68	96.25	3.383	0.496
	Secondary school	6	20.50	6.06	58.08		
	High school	43	22.51	6.55	73.15		
	College / University	94	24.05	6.37	82.26		
	Postgraduate	9	22.44	6.21	70.56		
Occupation	Retired	7	22.29	6.82	68.36	2.378	0.667
	Housewife	38	24.37	6.43	83.80		
	Civil servant	34	24.50	6.66	84.84		
	Worker	54	22.83	6.22	74.85		
	Other	23	22.22	6.59	72.02		
Income Status	10.000- 24.000 TRY	53	22.04	6.90	68.00	6.699	0.082
	25.000- 39.000 TRY	42	22.98	5.49	76.12		
	40.000- 54.000 TRY	39	25.15	6.36	91.38		
	55.000 and above	22	24.77	6.55	85.50		
		N	Mean	SD	Avg. Rank	M-WU	p
Marital Status	Married	91	23.29	6.29	77.27	2845.500	0.687
	Single	65	23.69	6.67	80.22		
Working Status	Yes	100	23.15	6.31	76.28	2578.000	0.411
	No	56	24.00	6.67	82.46		
Place of Living	City	91	23.52	6.37	79.28	2886.500	0.798
	Country	65	23.37	6.57	77.41		

K-W: Kruskal-Wallis, M-WU: Mann-Whitney U, N: Number of people, Mean: Average, SD: Standard deviation

In Table 2, as a result of the Kruskal-Wallis analysis performed on the quality of life scale according to the age, education status, occupation, income status and pilates frequency of the pilates groups, it was seen that only the effect of the " pilates frequency " variable on the total quality of life score was significant (KW=12.770; p<0.01). When the means were examined, it was determined that the mean of those doing pilates 2-4 times a week (33.57±4.86) was higher than the mean of those doing pilates more than once a month or less than once a week (27.61±6.45). In addition, as a result of the Mann-Whitney U analysis performed on the quality of life scale according to the marital status, employment status and place of residence of the pilates doers in Table 2, it was seen that the effect of the variables on the total quality of life score was not significant (p>0.05).

In Table 3, as a result of the Kruskal-Wallis analysis conducted on the quality of life scale of the Non-Pilates groups according to age, education level, occupation and income status, it was seen that the effect of the variables on the total quality of life score was not significant (p>0.05). In addition, in Table 3, as a result of the Mann-Whitney U analysis conducted on the quality of life scale of the Non-Pilates groups according to marital status, employment status and place of residence, it was seen that the effect of the variables on the total quality of life score was not significant (p>0.05).

Table 4. Psychological resilience comparison of Pilates practitioners by demographic and socioeconomic factors

Variables	Group	N	Mean	SD	Avg. Rank	K-W	p
Age	18-24 age (1)	31	17.58	2.63	84.32	14.795	0.002** 3>2, 3>4
	25-34 age (2)	75	16.83	2.59	70.63		
	35-44 age (3)	38	18.92	3.03	101.97		
	45-54 age (4)	15	15.60	4.15	62.23		
Educational Status	Literate or primary school grad. (1)	1	7.00	-	3.00	14.916	0.005** 5>3
	Secondary school (2)	6	17.33	6.25	72.67		
	High school (3)	22	16.00	4.39	58.05		
	College / University (4)	110	17.47	2.37	80.75		
	Postgraduate (5)	20	18.75	1.62	106.05		
Occupation	Retired	3	17.67	1.15	75.67	7.555	0.109
	Housewife	16	15.94	3.99	58.59		
	Civil servant	49	17.76	2.58	83.47		
	Worker	13	15.23	4.64	60.42		
	Other	78	17.74	2.60	85.64		
Income Status	10.000- 24.000 TRY	53	16.79	3.32	75.75	4.058	0.255
	25.000- 39.000 TRY	42	17.38	3.15	79.38		
	40.000- 54.000 TRY	32	17.19	2.10	73.97		
	55.000 and above	32	18.44	2.98	93.88		
Pilates Frequency	Once a month, less than once a week	18	17.17	3.13	79.42	1.901	0.387
	Once a week	20	18.10	3.26	92.98		
	2-4 times a week	121	17.26	2.98	77.94		
		N	Mean	SD	Avg. Rank	M-WU	p
Marital Status	Married	76	17.08	3.34	74.99	2773.000	0.181
	Single	83	17.61	2.71	84.59		
Working Status	Yes	120	17.57	3.06	84.36	1816.500	0.033*
	No	39	16.72	2.88	66.58		
Place of Living	City	128	17.68	2.53	84.34	1429.000	0.014*
	Country	31	16.03	4.35	62.10		

**p<0.05, **p<0.01; K-W: Kruskal-Wallis, Pairwise Comparisons, M-WU: Mann-Whitney U, N: Number of people, Mean: Average, SD: Standard deviation*

In Table 4, as a result of Kruskal-Wallis analysis performed on the psychological resilience scale according to age, education level, profession, income level and frequency of doing pilates, it was seen that the effect of the variables "age (KW=14.795; p<0.01) and education level (KW=14.916; p<0.01)" on the total score of psychological resilience was significant. When the means were examined, it was determined that the means of those between the ages of 35-44 (18.92±3.03) were higher than the means of those between the ages of 25-34 (16.83±2.59) and 45-54 (15.60±4.15), while the means of those with postgraduate education (18.75±1.62) were higher than the means of those with high school education (16.00±4.39). In addition, as a result of the Mann-Whitney U analysis conducted on the psychological resilience scale of those doing pilates according to marital status, employment status and place of residence in Table 4, it was seen that the effect of the variables of "employment status (U=1816.500; p<0.05) and place of residence (U=1429.000; p<0.05)" on the total psychological resilience score was significant (p>0.05). When the means were examined, it was determined that the means of those working (17.57±3.06) were higher than the means of those not working (16.72±2.88), while the means of those living in the province (17.68±2.53) were higher than the means of those living in the district (16.03±4.35).

Table 5. Psychological resilience comparison in Non-Pilates groups by demographic and socioeconomic factors

Variables	Group	N	Mean	SD	Avg. Rank	K-W	p
Age	18-24 age (1)	26	17.65	2.15	79.08	8.891	0.031* 2>4, 3>2
	25-34 age (2)	71	18.32	3.12	83.09		
	35-44 age (3)	41	18.49	3.63	82.88		
	45-54 age (4)	18	15.94	2.62	49.58		
Educational Status	Literate or primary school grad.	4	19.75	8.42	88.00	0.441	0.979
	Secondary school	6	19.00	6.93	75.75		
	High school	43	17.95	3.55	76.80		
	College / University	94	17.85	2.26	79.53		
	Postgraduate	9	18.00	2.83	73.44		
Occupation	Retired	7	14.86	3.67	42.79	5.797	0.215
	Housewife	38	18.45	3.46	82.33		
	Civil servant	34	18.03	1.91	85.21		
	Worker	54	18.15	3.62	76.18		
	Other	23	17.70	2.34	78.59		
Income Status	10.000- 24.000 TRY	53	18.23	4.30	71.42	3.061	0.382
	25.000- 39.000 TRY	42	17.60	2.72	76.92		
	40.000- 54.000 TRY	39	18.10	1.82	85.59		
	55.000 and above	22	17.91	2.58	86.02		
		N	Mean	SD	Avg. Rank	M-WU	p
Marital Status	Married	91	18.25	3.42	79.99	2821.500	0.617
	Single	65	17.60	2.71	76.41		
Working Status	Yes	100	17.94	3.12	79.63	2687.000	0.669
	No	56	18.05	3.24	76.48		
Place of Living	City	91	17.52	2.33	75.38	2673.500	0.296
	Country	65	18.63	3.96	82.87		

**p<0.05, K-W: Kruskal-Wallis, Pairwise Comparisons, M-WU: Mann-Whitney U, N: Number of people, Mean: Average, Std: Standard SD: Standard deviation*

In Table 5, as a result of the Kruskal-Wallis analysis performed on the psychological resilience scale according to age, education status, occupation and income status of the Non-Pilates groups it was seen that only the effect of the "age" variable on the total score of psychological resilience was significant (KW=8.891; p<0.05). When the means were examined, it was determined that the means of those between the ages of 25-34 (18.32±3.12) and 35-44 (18.49±3.63) were higher than the means of those between the ages of 45-54 (15.94±2.62). In addition, as a result of the Mann-Whitney U analysis performed on the psychological resilience scale according to marital status, employment status and place of residence of the Non-Pilates groups in Table 5, it was seen that the effect of the variables on the total score of psychological resilience was not significant (p>0.05).

Table 6. Relationship between quality of life and level of psychological resilience

Pilates Doing Status	Parameter	Coefficient	Psychological Resilience
PG	Quality of Life	r	0.056
		p	0.483
		n	159
NPG		r	0.064
		p	0.425
		n	156

**Spearman correlation, PG: Pilates Group, NPG: Non-Pilates Group*

In Table 6, Spearman correlation test was applied to determine whether there is a relationship between the quality of life and psychological resilience levels of Pilates group and Non-Pilates group. In the test results, it was determined that the relationship between the quality of life and psychological resilience levels of both those who do pilates and those who do not do pilates was low and not significant (p>0.05).

4. Discussion

Our findings showing the effects of Pilates on quality of life and psychological resilience emphasize the importance of exercise on the physical and mental well-being of individuals. First of all, it was determined that the quality of life of individuals who do Pilates is significantly higher than those who do not. This shows that regular physical activity positively affects individuals' general health perception and that increasing body awareness increases satisfaction with life. Pilates provides physical comfort by increasing flexibility, posture and muscle strength (Canukazov et al., 2019), while also improving individuals' ability to cope with stress (Cengiz & Delen, 2019). On the other hand, the fact that Pilates does not have a direct effect on psychological resilience suggests that mental resilience is shaped not only by physical activity but also by the individual's social environment, personality traits and life experiences.

In this context, when the studies in the literature are examined; Özdemir and Uysal (2017) concluded in their study that pilates exercises increase the quality of life in women. Vergili (2012) concluded in his study that women who do pilates exercises change their quality of life positively. Saltan (2018) investigated the effect of pilates exercise on the quality of life. At the end of the study, he concluded that pilates-based exercises increase the quality of life of women.

In the literature, unlike our study, there are studies showing that pilates exercise strengthens psychological resilience (Özdemir & Uysal, 2017). In their study, Mokhtari et al. (2013) investigated the depression levels of elderly women who did pilates exercises. They had the participants do pilates exercises regularly for 12 weeks, and it was found that the participants' depression levels decreased at the end of the study. In the study conducted by Hassan and Amin (2011), the effects of pilates exercises on the mental and physical structure were investigated. In the study, the participants did pilates exercises regularly for 12 weeks, and positive effects were found on psychological well-being. In addition to the positive effects of pilates exercise on psychological well-being, there are also studies similar to our study in which it had no effect. Tükel (2021) examined the psychological resilience levels of individuals participating in recreational activities in his study. No significant difference was found in the psychological resilience score averages of the participants who actively participated in the activities. Rushing et al. (2022) concluded that restrictions on participation in different leisure sports negatively affect psychological resilience by causing emotional unrest, including stress,

frustration, hopelessness, and conflict. In the study conducted by Bayrakdar et al. (2020), it was determined that there was no change in mental health summary scores as teachers' physical activity levels increased.

In our study, the relationship between the frequency of exercise and quality of life revealed that doing pilates regularly yields more positive results. The fact that individuals who do pilates at least 2-4 times a week have a higher quality of life than those who exercise more irregularly supports the idea that physical activity requires a certain process and continuity in order to be effective. However, the fact that variables such as marital status, employment status and place of residence do not have a significant effect on quality of life in individuals who do pilates shows that life satisfaction does not only depend on the individual's physical activity level, but also that social and economic conditions play an important role.

The finding that age and education level are the determining factors in terms of psychological resilience emphasizes the role of the individual's developmental process and coping strategies acquired through education on psychological resilience. The higher level of psychological resilience in older age groups indicates that individuals become more experienced in stress management as they age and are more resistant to the challenges of life. Similarly, the higher level of psychological resilience in individuals with higher levels of education suggests that individuals' problem-solving skills improve through education and that they develop more effective strategies for coping with stress. The significant effect of employment status and place of residence on psychological resilience points to the role of the social environment in the individual's mental health. The higher level of psychological resilience in employed individuals indicates that work life provides individuals with a certain social support and contributes to individuals feeling more productive and strong. In addition, the fact that individuals living in cities have higher psychological resilience than those living in districts suggests that access to more social and cultural activities in big cities may support psychological resilience.

When similar studies in the literature are examined, Sanioğlu and Maçkalı's (2021) study also revealed that the psychological resilience scores of women between the ages of 18-50 differed depending on the age variable. Sanioğlu and Maçkalı (2021) also stated that success in business and professional life can increase the psychological resilience of individuals.

When evaluated in terms of individuals who do not do Pilates, the fact that age has a significant effect on psychological resilience is a finding that supports the fact that the individual's skills to cope with stress improve as their life experience increases. However, the fact that variables such as education, occupation, income status, marital status, employment status and place of residence do not have a significant effect on psychological resilience suggests that the factors affecting psychological resilience among individuals who do not do Pilates are based more on individual differences.

Finally, the low level and statistically insignificant relationship between quality of life and psychological resilience indicates that these two variables do not directly affect each other. While quality of life is affected by multidimensional variables such as physical health, social relationships and environmental factors, psychological resilience is shaped by the individual's internal motivations, character structure and past experiences. This result reveals that although physical activity has a positive effect on general well-being, psychological resilience should be supported not only by doing sports but also by other experiences and skills gained in the individual's life.

5. Conclusion

This study has shown that doing pilates regularly significantly increases the quality of life of individuals. The quality of life of individuals who do pilates was found to be significantly higher than those who do not; it was observed that individuals who do pilates regularly, especially 2-4 times a week, have higher life satisfaction than those who exercise less frequently. This finding shows that pilates contributes to psychological well-being as well as physical health. However, it was determined that pilates does not have a direct effect on psychological resilience. Psychological resilience is more affected by factors such as the individual's age, level of education, employment status and the environment in which they live. The fact that individuals in older age groups and with higher levels of education have higher levels of psychological resilience shows that individual development and learned coping mechanisms strengthen psychological resilience. The fact that working individuals and those living in cities have higher levels of psychological

resilience emphasizes the role of the social environment and economic factors on psychological well-being. On the other hand, no significant relationship was found between quality of life and psychological resilience.

As a result, although it has been clearly demonstrated that pilates increases the quality of life, no evidence has been obtained that it directly affects psychological resilience. However, it should be noted that regular exercise can indirectly strengthen psychological resilience by increasing individuals' physical awareness. Therefore, individuals should be encouraged to develop sustainable physical activity habits and different supportive approaches to increase psychological resilience should also be considered.

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