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POSTURAL HABITS AND AWARENESS, BALANCE, FLEXIBILITY, AND QUALITY OF LIFE IN WOMEN PRACTISING YOGA, PILATES, AND SEDENTARY CONTROLS: A CROSS-SECTIONAL STUDY

YOGA VE PİLATES YAPAN KADINLAR İLE SEDANTER BİREYLERDE POSTÜRAL ALIŞKANLIK VE FARKINDALIK, DENGE, ESNEKLİK VE YAŞAM KALİTESİ: KESİTSEL BİR ÇALIŞMA

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ABSTRACT

Objective: Despite the use of yoga and Pilates as health-promoting and preventive exercise approaches, there is a paucity of research investigating their effects on postural habits and postural awareness. This cross-sectional observational study aimed to compare the postural habits and awareness, along with balance, flexibility, and quality of life levels of adult females who regularly practice yoga and Pilates with those of sedentary individuals.

Method: Females aged 20–40 who had never done yoga or Pilates before and had been practicing yoga (n=25) or Pilates (n=25) regularly for 3–6 months, and sedentary individuals who had and have not practiced such or any other exercises previously and currently (n=25) were recruited between December 2024 and October 2025. The level of postural habit and awareness was assessed using the Postural Habit and Awareness Scale, postural balance using the Y Balance Test, flexibility using trunk lateral flexion and sit-and-reach tests, and quality of life using the Nottingham Health Profile (NHP).

Results: The demographic features of groups (age, height, body weight, and body mass index (BMI)) were statistically similar ($p>0.05$). The weekly frequency of practice was 2.37±0.93 (1–4) for the pilates group and 2.03±0.85 (1–4) for the yoga group. The postural habits sub-score in both the Pilates and yoga groups ($p<0.001$), and balance test values in the posterolateral and posteromedial direction in the Pilates group ($p<0.05$) and yoga group ($p<0.001$) were higher than those of the controls. No difference was determined among the groups in terms of flexibility tests and NHP scores ($p>0.05$).

Conclusion: This cross-sectional study put forth that women who regularly practice yoga or Pilates may have more positive postural habits and posterior balance levels compared to sedentary women. We recommend conducting comprehensive interventional studies investigating the effects of yoga and Pilates on postural habits and awareness.

Key Words: Yoga, Pilates-Based Exercises, Posture, Awareness, Postural Balance

ÖZ

Amaç: Yoga ve Pilates'in sağlığı geliştirici ve koruyucu egzersiz yaklaşımları olarak yaygın biçimde kullanılmasına rağmen, postüral alışkanlıklar ve postüral farkındalık üzerindeki etkilerini inceleyen araştırmalar sınırlıdır. Bu kesitsel gözlemsel çalışmanın amacı, düzenli olarak yoga ve Pilates yapan yetişkin kadınların postüral alışkanlık ve farkındalık düzeyleri ile denge, esneklik ve yaşam kalitesi düzeylerini sedanter bireylerle karşılaştırmaktı.

Yöntem: Çalışmaya Aralık 2024 ve Ekim 2025 tarihlerinde 20-40 yaş aralığında, daha önce yoga ya da Pilates yapmamış, 3-6 aydır düzenli yoga (n=25) veya Pilates (n=25) yapan kadınlar ile bu tür egzersizleri daha önce ve güncel olarak yapmayan sedanter bireyler (n=25) dahil edildi. Postüral alışkanlık ve farkındalık düzeyi Postüral Alışkanlık ve Farkındalık Ölçeği ile, postüral denge düzeyi Y Denge Testi ile, esneklik düzeyi gövde lateral fleksiyon ve otur-uzan testleri ile, yaşam kalitesi düzeyi ise Nottingham Sağlık Profili (NSP) ile değerlendirildi.

Bulgular: Grupların demografik özellikleri (yaş, boy, vücut ağırlığı ve vücut kitle indeksi (BMI)) istatistiksel olarak benzerdi ($p>0,05$). Haftalık uygulama sıklığı pilates grubunun 2.37±0.93 (1-4), yoga grubunun ise 2.03±0.85 (1-4) olduğu belirlendi. Hem Pilates hem de yoga gruplarında postüral alışkanlıklar alt puanı ($p<0.001$) ve Pilates grubunda ($p<0.05$) ve yoga grubunda ($p<0.001$) posterolateral ve posteromedial yöndeki denge testi değerleri kontrol grubuna göre daha yüksekti. Esneklik testleri ve NSP puanları açısından gruplar arasında fark belirlenmedi ($p>0.05$).

Sonuç: Bu kesitsel çalışma, düzenli olarak yoga veya Pilates yapan kadınların sedanter kadınlara kıyasla daha olumlu postüral alışkanlıklara ve daha iyi posterior denge düzeylerine sahip olabileceğini gösterdi. Yoga ve Pilates'in postüral alışkanlık ve farkındalık üzerindeki etkilerini inceleyen kapsamlı müdahale çalışmalarına ihtiyaç vardır.

Anahtar Kelimeler: Yoga, Pilates Temelli Egzersizler, Postür, Farkındalık, Postüral Denge

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INTRODUCTION

Yoga and Pilates are health-promoting exercise approaches that support physical and mental well-being [1-3]. Both disciplines are founded on increasing body awareness, flexibility, and strength, but they differ in their fundamental philosophies and application techniques [3,4]. Yoga combines physical postures, breathing exercises, and meditation, whereas Pilates emphasizes core strength, postural alignment, and controlled movement [2,3,5].

Posture refers to the alignment of body segments during static and dynamic activities [6] and is essential for musculoskeletal health and efficient movement [7]. Studies in the literature have concluded that yoga and Pilates exercises positively affect posture alignment [8,9]. Postural habits, on the other hand, refer to the body positions a person frequently adopts in daily life, while postural awareness describes the ability to instantly perceive and correct one's own posture [7]. It has been emphasized that yoga and Pilates exercises increase postural awareness by focusing attention on the muscle groups in the body and how they work together [10]. While most studies report positive outcomes, some evidence suggests that the effects of Pilates on postural-related parameters may be limited or population-specific. For example, a study conducted in women with temporomandibular dysfunction reported no significant effect on postural habits [11].

Balance and flexibility are important components of physical function and postural stability [12,13]. Many studies have concluded that yoga and Pilates exercises contribute to balance and flexibility [14,15]. In addition, previous studies have reported that the effects of yoga and Pilates may vary across different outcomes, with some parameters showing limited or non-significant changes, particularly in healthy populations or short-term practice conditions [16-18]. Quality of life is a broad concept that integrates factors such as general health status of the individual, happiness, emotional well-being, and social functionality [19]. Saltan emphasizes that quality of life can be improved through exercises such as yoga and Pilates [8]. In parallel, many studies have concluded that Pilates and yoga methods may have a positive impact on the quality of life [1,16-18,20]. However, some studies have reported mixed findings; for example, Wong et al. [21] found improvements in certain physiological parameters, while no significant differences were observed in overall quality of life scores.

From a clinical and practical perspective, postural habits and postural awareness are important components of musculoskeletal health, as they influence load distribution, movement efficiency, and the development of musculoskeletal complaints. Although the effects of yoga and Pilates on individuals' balance, flexibility, and life quality have been researched previously, there is a notable gap in the literature in terms of a holistic study comparing the postural habits and awareness level alongside other musculoskeletal parameters of individuals who practice yoga and Pilates regularly, compared to sedentary individuals. The present study was designed to capture real-world engagement with yoga and Pilates rather than controlled intervention effects. By comparing individuals who voluntarily incorporated these practices into their daily lives with sedentary individuals of similar demographic characteristics, the study aimed to explore whether observable differences emerge under natural conditions. Although based on self-reported practice, such comparisons may still provide meaningful insights into functional outcomes associated with habitual engagement in these activities. Understanding whether commonly recommended exercise modalities such as yoga and Pilates are associated with improved postural habits in daily life may provide clinically meaningful insights for physiotherapists and rehabilitation professionals.

Therefore, the purpose of this study was to carry out a comparative analysis of postural habits and awareness, balance, flexibility, and quality of life in women who regularly practice yoga or Pilates for 3-6 months and sedentary controls who do not regularly do these exercises or any sports now or before.

METHOD

Study Design and Subjects

This cross-sectional observational study was carried out using the convenience sampling method, with the participation of 75 female volunteers residing in Istanbul, aged 20-40 years. Subjects were recruited through local yoga and Pilates studios, social media announcements, and personal referrals between December 2024 and October 2025. Inclusion criteria for the study were being female, being at least a high school graduate, practicing regular only yoga or only Pilates for a minimum of 3 months and a maximum 6 months for Pilates and yoga groups, and not having practiced regular yoga, Pilates, or any sports previously and actively for the controls. The 3-6 month practice duration was selected to include individuals who had recently started practicing yoga or Pilates and were likely to have a more consistent and clearly defined pattern of practice. Previous studies have reported that meaningful adaptations in physical function, flexibility, balance, and postural control may occur within approximately 8-12 weeks of regular exercise participation [1,5]. Therefore, a minimum duration of 3 months was considered sufficient for subjects to develop exercise-related adaptations. A maximum duration of 6 months was selected to limit heterogeneity associated with more prolonged training exposure and to ensure that subjects were evaluated within a relatively comparable stage of adaptation.

The exclusion criteria were; those who have diagnosis of any physical, neurological, psychiatric, oncological or cardiovascular disease, pregnancy or breastfeeding, and any chronic musculoskeletal pain, body mass index below 18.5 and above 30, those who currently or have previously practiced both yoga and Pilates, those who have been practicing yoga or Pilates for more than 6 months, those who do other regular sports in addition to yoga or Pilates, and those with a sports background. A total of 75 subjects were included in the study, consisting of 25 individuals in the yoga group, 25 in the Pilates group, and 25 in the sedentary control group.

The assessment procedure was conducted at the Neurophysiological Applications Laboratory of the Marmara University Health Sciences Faculty. After providing verbal and written informed consent to participate, the demographics of subjects, medical and family history, the leg length, and the duration and frequency of yoga or Pilates practice were recorded.

Outcome Measures

Postural Habit and Awareness: Postural Habit and Awareness Scale (PHAS) was applied to determine the postural habits and awareness of healthy adults. The PHAS consists of 19 items, each scored using a 5-point Likert scale. The total score can reach a maximum of 35 for postural habits and 60 for postural awareness, resulting in a maximum total score of 95. A high score indicates that the individual has a good level of postural habits and awareness. Postural habits items include statements about the posture preferred by the individual in activities in daily life and postural awareness items include statements about subjective conscious awareness of posture [7].

Balance: The Y Balance test, which involves reaching in the anterior, posterolateral (PL), and posteromedial (PM) directions, was used to assess dynamic balance performance. The subject was set up so that the angle between the anterior and posterior sides was 135˚ and the angle between the posteromedial and posterolateral directions was 90˚. Subjects began the test by placing a foot centred. The subject was asked to reach in these three directions while standing on one leg, hands on their hips, and maintaining sole contact with the ground and the position of their hand. Two trials were given before each direction to ensure familiarity, and they were asked to reach three times in the anterior, PM, and PL sides. The average of three extensions for each direction was taken, and this average was divided by the leg length and multiplied by 100 to obtain a score [22].

Flexibility: Flexibility assessment was performed by using the sit and reach and trunk lateral flexion tests. In the sit and reach test, the subject was asked to sit upright and lean forward as far as possible without bending their knees, extending their hands on a test device. The point where the fingers align with the toes was considered zero; those that progressed further were recorded as a positive value, while those that lagged were recorded as a negative value [23]. Trunk lateral flexion was assessed by the subject standing with their feet slightly apart and parallel, arms at their sides. First, the distal tip of the right middle finger was marked on the thigh. Then, they were asked to bend their trunk by sliding their hand down their thigh. The last point was marked again, and the distance from the first point was measured with a tape measure and recorded in cm [24].

Quality of Life: The Turkish version of the Nottingham Health Profile (NHP), is a general questionnaire that evaluates perceived health problems and the extent to which these problems interfere with normal daily activities, was used to assess quality of life. The survey consists of 38 items and assesses six dimensions related to health status: energy (3 items), pain (8 items), emotional reactions (9 items), sleep (5 items), social isolation (5 items), and physical activity (8 items). Each section is scored from 0 to 100, with 0 representing the best health status and 100 representing the worst [25].

Ethical Approval

Ethical approval for the study was obtained from the Marmara University Health Sciences Institute Ethics Committee (date:16.09.2024, decision number: 80). All subjects provided written and verbal informed consent before participation.

Statistical Analysis

SPSS version 26 was applied to analyse the data of research parameters. The average of the data from both sides was used to compare the groups, because no significant difference was detected when comparing the data from the right and left side of the Y-shaped balance test, obtained in three different directions, and the lateral flexion flexibility test. No a priori sample size calculation was performed, as the study was designed as an exploratory cross-sectional analysis based on a convenience sample. The sample size was determined by the number of eligible subjects available during the study period. To ensure accurate statistical analysis of sit and reach test values, a positive value equal to the maximum negative value (25 cm) among all subjects was added to the test value of all subjects, the test data were converted to positive values for analysis. The normality of the data was assessed using the Shapiro-Wilk test. The One-Way ANOVA test was used for parameters that met the parametric test requirements, and the Kruskal-Wallis test was used for parameters that did not meet the parametric test requirements. If a significant difference was found, the Bonferroni correction or the Mann-Whitney U test was applied as secondary analysis. Effect sizes were calculated using eta squared (η^2) for ANOVA analyses. Statistical significance was accepted as $p<0.001$.

RESULTS

The demographic features of groups (age, height, body weight, and body mass index (BMI)) were statistically similar ($p>0.05$), (Table 1). The weekly frequency of practice was 2.37±0.93 (1-4) for the pilates group and 2.03±0.85 (1-4) for the yoga group.

When the PHAS sub scores and total score were examined, a statistically significant difference was found between the groups only in the postural habits sub score parameter ($p<0.001$, Table 2). When the groups were compared pairwise using the Bonferroni correction, the postural habits sub-score was found to be significantly higher in the Pilates and yoga groups compared to the controls ($p<0.001$, Table 3). No statistically significant difference was detected between the yoga and Pilates groups in terms of the postural habits sub-score ($p>0.05$). The groups were similar according to postural awareness and PHAS total score ($p>0.05$, Table 2).

Table 1. Demographic characteristics of the subjects

Variable	Pilates Group (n=25)	Yoga Group (n=25)	Control Group (n=25)	F	p
Age (years)	31.20±6.23	30.88±5.57	30.76±7.73	.030	.971
Height (cm)	161.92±4.15	162.04±5.80	163.76±5.69	.953	.390
Weight (kg)	64.28±8.00	66.48±7.34	68.48±9.55	1.581	.213
BMI (kg/m^2)	24.55±3.17	25.45±3.61	25.48±2.91	.664	.518

BMI:Body mass index

When the balance parameters were examined, a statistically difference was found among the groups in Y balance test scores in the PL and PM directions ($p<0.001$). According to the post hoc analysis, the yoga group had significantly higher scores in the PL and PM ($p<0.001$) directions compared to the control group (Table 3). Higher scores were also found in the PL ($p=0.026$) and PM ($p=0.010$) directions in the Pilates group compared to the control group (Table 3). No statistically significant difference was found between the yoga and pilates groups in terms of the Y balance test parameters ($p>0.05$). In the flexibility values compared among groups, no significant difference was found in terms of sit-and-reach and trunk lateral flexion tests ($p>0.05$). When the quality-of-life outcomes (NHP total and subscale scores) were examined (Table 4), no statistically significant difference was found among Pilates, yoga, and control groups ($p>0.05$).

DISCUSSION

This study compared the postural habit and awareness, body balance, flexibility, and quality of life levels of women who regularly practice yoga and Pilates with those of sedentary individuals. The findings show that each exercise group had significantly higher postural habits level and balance than the controls, particularly in the posterior direction. However, no significant difference was found among the groups in terms of postural awareness, flexibility, and quality of life.

Yoga and Pilates practitioners participating in this study had been practicing yoga or Pilates for 3-6 months and practiced 1-4 times a week. Because it was a cross-sectional study the specific yoga style they practiced or whether they used equipment or mat Pilates was not questioned. The aim of the research was to investigate, using a convenience sampling method, what differences might be observed between sedentary individuals and women who incorporated yoga or Pilates in any form into their lives. Due to the cross-sectional and observational design of the present study, the findings should be interpreted as descriptive group-level differences rather than establishing a causal relationship. Because there are limited studies that investigate posture, balance, and flexibility parameters cross-sectionally between yoga and Pilates practitioners and controls, the present findings have been discussed within a contextual and supporting framework with the results of interventional studies in the literature. While the information obtained is limited compared to interventional studies in the current study, it sheds light on the targeted research question, providing insights into health-related physical activity and functional health.

Postural habits and postural awareness play a critical role in musculoskeletal health, as habitual faulty postures are associated with altered load distribution, muscle imbalance, and musculoskeletal pain, whereas increased postural awareness contributes to the prevention of these dysfunctions and supports musculoskeletal health from a preventive health perspective [26]. This study is one of the pioneering works to examine the postural habits and awareness of yoga and Pilates practitioners by comparing them to those of sedentary individuals. That output of higher level of postural habits may support the condition that regular yoga and Pilates practice have positive impacts in terms of postural habits.

Table 2. Postural habits and awareness, balance, flexibility, and quality of life according to group

Variable		Groups (n=25 for each group)			Statistics (F/H)	p	η^2/ ε^2
		Pilates	Yoga	Control			
PHAS	Postural Habits	29 (26–31.5)	29 (25.5–31)	23 (20–26)	20.623$^{\mu}$	<.001	0.259
	Postural Awareness	34.56±4.99	36.24±4.77	38.32±6.84	2.818	.066	0.073
	Total	63.04±6.74	64.12±6.47	61.04±8.52	1.144	.324	0.031
Y Balance Test	Anterior (%)	110.61±26.42	112.36±17.74	98.65±22.15	2.780	.069	0.072
	PL (%)	115.01±16.62*	122.18±17.03*	99.95±24.63	8.251	<.001	0.186
	PM (%)	111.39±17.11*	118.83±19.21*	95.35±19.41	10.405	<.001	0.224
Flexibility Tests	Sit and Reach (cm)	31.68±7.22	29.78±9.10	25.54±11.76	2.712	.073	0.070
	Lateral Flexion (cm)	27 (21–38)	25 (18–33)	20 (16–29)	5.207$^{\mu}$	.074	0.045

*H:Kruskal–Wallis statistic, F:One-way ANOVA F statistic, PHAS:Postural Habit and Awareness Scale, PL:Posterolateral, PM:Posteromedial. Postural habits and lateral flexion scores were analyzed using Kruskal–Wallis test, all other parameters were analyzed using one-way ANOVA, η^2 values are reported for one-way ANOVA analyses and ε^2 values for Kruskal–Wallis analyses, *statistically higher than the control group at the level of <0.001.*

Table 3. Bonferroni-adjusted post-hoc comparisons of postural habits and PL and PM balance parameters

Variable	Groups (n=25 for each group)	Mean±SD	Z / Mean Difference	p
Postural Habits	Pilates	28.20±4.32	307.500	.922
	Yoga	27.88±4.68		
	Pilates	28.20±4.32	105.000	<.001*
	Control	22.72±3.61		
	Yoga	27.88±4.68	117.500	<.001*
	Control	22.72±3.61		
Y Balance Test (Posterolateral)	Pilates	115.01±16.62	-7.169	.612
	Yoga	122.18±17.03		
	Pilates	115.01±16.62	15.084	.026*
	Control	99.95±24.63		
	Yoga	122.18±17.03	22.253	<.001*
	Control	99.95±24.63		
Y Balance Test (Posteromedial)	Pilates	111.39±17.11	-7.443	.485
	Yoga	118.83±19.21		
	Pilates	111.39±17.11	16.048	.010*
	Control	95.35±19.41		
	Yoga	118.83±19.21	-23.491	<.001*
	Control	95.35±19.41		

One-way ANOVA with Bonferroni correction, Mann–Whitney U test for postural habits, p<0.05 was considered statistically significant according to adjusted p value.

Although no significant difference was detected among the groups in terms of total PHAS score, it was superior to the controls in the Pilates and yoga groups. However, no significant difference was observed between the groups in the postural awareness sub-dimension, suggesting that while regular engagement in yoga and Pilates may influence habitual postural behaviors, it may not be sufficient to produce measurable changes in conscious postural awareness within the duration of practice examined in this study. The postural habits and awareness levels are parameters that have not been previously examined in a cross-sectional or interventional manner, although research on posture has been performed within the context of yoga and pilates [9,27]. Specifically, when comparing spinal curvature and posture assessments between individuals who practice yoga and those who do not, thoracic kyphosis and lumbar lordosis were less pronounced in yoga practitioners, and they have more frequently normal or smaller thoracic kyphosis and lumbar lordosis [9]. This conclusion is plausible when interpreted in conjunction with the results of studies examining the effects of yoga on posture. In parallel, in studies examining the effects of Pilates on posture, it was stated that Pilates-based exercises improve postural alignment [28], and affect positively postural control in women [8]. In the context of our research, it can be predicted that yoga and Pilates methods, which have positive postural effects, may also lead to differences in postural habits. This parameter can be considered and investigated in further randomized interventional studies.

Table 4. Quality of life (Nottingham Health Profile) total and subscale scores according to groups

Variable	Groups (n=25 for each group)			Kruskal-Wallis H	P
	Pilates	Yoga	Control		
Pain	1.18±3.52	0.00±0.00	.87±3.08	2.939	.230
Emotional Reactions	4.54±10.70	.98±3.42	.66±3.31	3.734	.155
Sleep	.64±3.22	1.59±5.90	1.08±3.73	.390	.823
Social Isolation	2.51±6.95	1.69±8.43	3.92±11.14	1.106	.575
Physical Mobility	0.00±0.00	.432±2.16	2.55±6.42	5.541	.063
Energy	0.00±0.00	0.00±0.00	0.00±0.00	.000	1.000
Total NHP Score	8.88±14.13	4.69±10.90	10.03±15.70	1.837	.399

NHP: Nottingham Health Profile

Balance is a fundamental component of the musculoskeletal system; it is closely related to neuromuscular control, proprioception, and postural stability, and maintaining it is vital for reducing the risk of lifelong injury, maintaining functional independence, and preventing falls, especially in older ages [13]. In the current study, the significant difference observed in balance assessment especially in posterior balance among groups indicates that yoga and Pilates methods may support neuromuscular control. While there are no studies in the literature that compare the balance of people who regularly practice yoga and Pilates in a cross-sectional study, there are studies showing that physically active young individuals have higher level of postural balance than sedentary people [29]. In this context, the results obtained support the positive effects of regular physical activities such as yoga and Pilates methods on balance, especially in the posterior aspect. Effect size estimates further indicated that these differences, particularly in the posterolateral and posteromedial directions, were of

moderate magnitude. Studies have reported that both yoga and Pilates methods improve dynamic and static balance in different populations [15,17,30]. The observed differences in posterior balance direction may reflect adaptations related to trunk control and proprioceptive demands common to both yoga and Pilates practices. It should also be noted that not all studies have consistently reported improvements in balance, and some findings suggest that the effects of exercise interventions may vary depending on the characteristics of the population and the duration of practice [15]. However, no significant difference was observed among the groups in the anterior direction of the Y Balance Test. This may be explained by the relatively lower neuromuscular and proprioceptive demands of the anterior reach compared to the posteromedial and posterolateral directions. In addition, given that the study population consisted of young and healthy individuals, anterior balance performance may have already been at a relatively high level, potentially leading to a ceiling effect and limiting the ability to detect between-group differences.

One of the key parameters targeted by yoga and Pilates exercises is body flexibility [14,17]. In this cross-sectional study, no significant differences were found when comparing groups using two assessments, particularly regarding trunk and hip flexibility. One important factor in this result may be that the specific yoga (hatha, yin, ashtanga, hammock yoga, etc.) and Pilates (mat, reformer, cadillac) styles practiced by the exercise groups were not investigated, given that different styles of practice yield different results. This finding is in line with previous studies reporting limited or non-significant improvements in flexibility, particularly in healthy individuals or in short-term practice conditions [5,17]. In addition, the absence of significant differences may also be related to relatively high baseline flexibility levels in this population of young and healthy individuals, which may have limited the potential for observable improvements. Furthermore, the flexibility assessment methods used in this study, such as the sit-and-reach and trunk lateral flexion tests, may not fully capture all dimensions of flexibility and may have limited sensitivity to detect subtle between-group differences.

When the assessment of quality of life is examined, no difference between the groups in the level of quality of life may be explained by the fact that the participants were not from a patient or geriatric population and that their general health status might be likely in a good level. Atılgan et al. reported that yoga-based exercises contribute positively to quality of life, but this effect is known to be particularly pronounced with long-term practice [1]. Wong et al. [21] reported that women who practice yoga regularly had shorter sleep latency and higher heart rate variability, but no significant difference was found in overall quality of life scores. However, despite the 3-6 month duration of practice, this period may not have been sufficient for measurable changes in quality of life to emerge, particularly when assessed using general health questionnaires such as NHP. Furthermore, quality of life is a multifactorial construct influenced by various psychosocial and environmental factors beyond physical activity alone. In addition, the clustering of quality-of-life scores at the lower end of the scale indicates a floor effect, which may have limited the ability to detect between-group differences.

The strengths of this research include the fact that it is the first time in the literature that postural habits and awareness levels have been examined in the context of yoga and Pilates, and that it compares the postural habits and awareness levels of yoga and Pilates practitioners, regardless of exercise style and frequency, alongside their musculoskeletal system and quality of life values.

Limitations

The limitations of this research include the fact that only cross-sectional and observational findings were obtained, limited number of participants, data on exercise frequency and duration were collected through self-report, individuals had different styles and practices in yoga and Pilates programs, and individuals performed yoga and Pilates programs with varying frequency. In addition, participants engaged in self-directed yoga and Pilates practices rather than standardized, supervised exercise protocols, which limits control over exercise content and intensity. Furthermore, variability in practice frequency (1-4 sessions per week) and practice setting (e.g., studio-based vs. online) may have introduced heterogeneity and potential confounding effects that could not be fully controlled within the current study design. We recommend further studies, using randomized controlled designs and involving a larger number of participants, to examine the effects of yoga and Pilates exercises, particularly on postural habits and awareness levels.

CONCLUSION

When considered within the context of functional health and preventive approaches, this study has shown that women who regularly practice yoga or Pilates had more positive postural habits and balance levels compared to sedentary women. Differences observed in posterior balance directions highlight potential associations between engagement in these exercise modalities and neuromuscular control components related to postural stability. Although yoga and Pilates are commonly described as awareness-based practices, no significant difference was observed in postural awareness among groups. While the effectiveness of yoga and Pilates has been previously examined in various studies, this study examined the current parameters of postural habit and awareness within two different practices for the first time. We recommend conducting more comprehensive and interventional studies to examine the effects of yoga and Pilates on postural habits and awareness in the future. These findings may guide physiotherapists and health professionals in recommending exercise-based physical activity programs as part of preventive health strategies for adult women.

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