DOI: 10.34057/PPj.2026.45.02.25733
Pelviperineology 2026;45(2):65-72

Association of physical activity with female sexual function across BMI categories in reproductive-age women

Alev ATIGAN[1], Ayhan ATIGAN[2], Derya KILIÇ GÜLER[2]

[1]Department of Physical Medicine and Rehabilitation, Pamukkale University Faculty of Medicine, Denizli, Türkiye
[2]Department of Obstetrics and Gynecology, Pamukkale University Faculty of Medicine, Denizli, Türkiye

Citation: Atıgan A, Atıgan Ay, Kılıç Güler D. Association of physical activity with female sexual function across BMI categories in reproductive-age women. Pelviperineology. 2026;45(2):65-72

ABSTRACT

Objective: Female sexual function is influenced by multiple biological, psychological, and lifestyle factors. Physical exercise and obesity have been linked to metabolic health and psychological well-being, which may influence sexual performance. The purpose of this study was to assess the association between exercise level and female sexual function in women of reproductive age, as well as to look into the impact of obesity and self-esteem on sexual health.

Materials and Methods: This cross-sectional study included 60 women of reproductive age. Participants were categorized as sedentary (n=21) or non-sedentary (n=39) according to the International Physical Activity Questionnaire (IPAQ). Additionally, participants were classified as group 1 [body mass index (BMI) ≥25; n=23] or group 2 (BMI <25; n=37) based on BMI. Anthropometric measurements including body weight, height, BMI, waist circumference, and waist-to-height ratio were recorded. Laboratory parameters including total testosterone, prolactin, and HbA1c levels were analyzed. Female sexual function was assessed using the Arizona Sexual Experiences Scale (ASEX) and self-esteem was evaluated using the Rosenberg Self-Esteem Scale.

Results: Sedentary and non-sedentary groups showed no significant differences in age, BMI, hormonal parameters, ASEX scores, or Rosenberg self-esteem scores ($p>0.05$). However, the sedentary group had significantly higher HbA1c values than the non-sedentary group ($p=0.028$). Group 1 subjects had significantly higher ASEX scores than group 2 subjects (17.3±3.4 vs. 14.8±3.1, $p=0.004$), suggesting poorer sexual function. Group 1 participants had substantially lower Rosenberg self-esteem levels (20.5±5.2 vs. 23.2±4.6, $p=0.036$). Group 1 subjects had considerably larger waist-to-height ratios ($p<0.001$).

Conclusion: Higher BMI is connected with poorer female sexual function and lower self-esteem in women of reproductive age, but a sedentary lifestyle appears to be associated with adverse metabolic markers such as elevated HbA1c. Promoting a healthy body weight and regular physical activity in women may help to promote metabolic health and sexual well-being.

Keywords: Female sexual function; self-esteem; Arizona sexual experiences scale; international physical activity questionnaire

Address for Correspondence: Ayhan Atıgan, Department of Obstetrics and Gynecology, Pamukkale University Faculty of Medicine, Denizli, Türkiye
E-mail: dratigan@hotmail.com **ORCID ID:** orcid.org/0000-0002-7257-0593
Received: 12 March 2026 **Accepted:** 05 June 2026 **Publication Date:** 04 August 2026

INTRODUCTION

Female sexual function is a complex and multifaceted process driven by biological, hormonal, psychological, and interpersonal factors. Studies show that female sexual dysfunction, encompassing issues with sexual desire/arousal, orgasm, and genital-pelvic discomfort, affects nearly half of women of reproductive age and is associated with poor quality of life and relational unhappiness.[1] The American Psychiatric Association's current diagnostic framework defines female sexual dysfunction as disorders of sexual interest/arousal, orgasm, and genito-pelvic pain/penetration, recognizing the biopsychosocial basis of female sexual response.[2]

Hormonal modulation via the hypothalamic-pituitary-gonadal axis is an important aspect of female sexual function. Women's libido and sexual satisfaction have been connected to reduced levels of testosterone, which has been shown to be a primary regulator of sexual desire and arousal.[3,4] However, because hyperprolactinemia decreases gonadotropin secretion and central dopaminergic pathways, it has been linked to decreased sexual desire, arousal difficulties, and orgasmic dysfunction.[4] These findings underscore the importance of measuring prolactin and testosterone levels when investigating factors influencing sexual function in reproductive-age women.

Physical activity is one aspect that can be modified to improve female sexual health. Regular exercise has been associated with increased cardiovascular performance, reduced depressive symptoms, enhanced body image perception, and improved endothelial function, all of which may have a good impact on sexual functioning.[5,6] Through vascular, neuroendocrine, and psychological mechanisms, physical activity is a modifiable lifestyle factor that may impact female sexual health.[7] The short form of the International Physical Activity Questionnaire (IPAQ) has shown adequate reliability and validity for assessing physical activity levels across several countries.[8] Another major factor that influences female sexual function is psychological well-being, namely self-esteem. Higher global self-esteem has been positively connected with increased sexual satisfaction and sexual well-being.[9]

Research combining physical activity level, prolactin and testosterone concentrations, and self-esteem within the same cohort of reproductive-age women is still scarce, despite the fact that previous studies have independently investigated relationships between exercise, hormonal parameters, or psychological factors and female sexual function. A multimodal approach incorporating physiological, behavioral, and psychosocial assessments can provide a more complete understanding of the modifiable elements impacting female sexual function. Thus, the current study aims to examine prolactin and testosterone levels, as well as the effect of self-esteem, while also investigating the impact of physical activity level on female sexual function in reproductive-age women.

MATERIALS AND METHODS

A total of 60 patients who voluntarily applied to the Obstetrics and Gynecology Outpatient Department of a Pamukkale University Hospital were included in the study after providing informed consent. Patients who underwent hormone testing for any reason within a one-month period were consecutively invited to participate in the questionnaire study according to their order of admission during the same month. Fasting morning blood samples obtained during the menstrual period were evaluated. After measuring the patients' height, weight, and waist circumference, serum total testosterone, prolactin, and HbA1c levels were analyzed. Body mass index (BMI) was calculated using the formula: BMI = weight (kg)/height $(m)^2$. Participants were categorized as group 1 if BMI ≥25 kg/m^2 and as group 2 if BMI <25 kg/m^2. According to waist-to-height ratio (WHtR), participants were classified as normal (<0.50) or high (≥0.50).[10] All patients were asked to complete the following questionnaires.

Questionnaires

The IPAQ group's shortened version is a well-validated measure for measuring physical activity levels in adult populations.[8] Validation of the Turkish version of the IPAQ has been conducted.[11] Evaluation of the survey: Walking MET-min/week =3.3 X minutes walked X number of days walked. Moderate intensity MET-min/week =4.0 X minutes of moderate-intensity activity X number of days of moderate-intensity activity. Vigorous MET-min/week =8.0 X minutes of vigorous activity X number of days of vigorous activity. Accordingly, there are 3 activity levels: 1. Inactive (Category 1): This is the lowest level of physical activity. Situations that cannot be included in Categories 2 and 3 are considered inactive. 2. Minimally active (Category 2): Those who meet any of the following criteria are minimally active. a) Performing at least 20 minutes of vigorous activity for 3 or more days. b) Performing at least 30 minutes of moderate-intensity activity or walking for 5 or more days. c) Combination of walking and moderate-intensity activity for 5 or more days, achieving a minimum of 600 MET-min/week. 3. Very active (Category 3): This measurement is approximately equivalent to at least one hour or more of moderate-intensity activity per day. This category is the level required to achieve health benefits. a) At least 3 or more days of vigorous activity achieving a minimum of 1500 MET-min/week. b) Combination of walking, moderate-intensity,

or vigorous activity for 7 or more days achieving a minimum of 3000 MET-min/week. However, in our study, participants were dichotomized into two categories for analytical clarity: those classified as "inactive" according to the IPAQ were defined as sedentary, whereas those categorized as "minimally active" and "very active" were combined and defined as non-sedentary. This approach was adopted to simplify comparisons and enhance the interpretability of physical activity status.

Morris Rosenberg developed the Rosenberg Self-Esteem Scale, which remains one of the most extensively used instruments for assessing global self-worth in research contexts.[12] A Turkish validity and reliability study of the Rosenberg Self-Esteem Scale has been conducted.[13] Total score = the sum of 10 items. Range: 0-30 points. A score of 0-14 score indicates low self-esteem; a score of 15-25 score indicates normal self-esteem; a score of 26-30 score indicates high self-esteem.

The Arizona Sexual Experiences Scale (ASEX), created at the University of Arizona, is a quick and verified assessment of sexual drive, arousal, lubrication, orgasm, and satisfaction.[14] ASEX consists of a total of 5 questions, and these questions are scored overall. The score range is between 5 and 30 points. A high score indicates worse sexual function. Sexual dysfunction is present if the total score is ≥19; any question is scored ≥5 points; or 3 or more questions are scored ≥4 points.

Ethical approval was obtained from the Pamukkale University Faculty of Medicine Ethics Committee (approval number: E-60116787-020-839579, date: 24.02.2026). Informed consent was obtained.

Statistical Analysis

A priority power analysis was performed using G*Power 3.1 software to establish the minimal sample size needed to detect a medium effect size (Cohen's d =0.5) with a power of 0.80 and an alpha level of 0.05 for two-tailed comparisons. According to this estimate, at least 51 persons (21 sedentary and 30 non-sedentary) were required for group comparisons, showing that the current sample of 60 participants has sufficient statistical power to detect medium effect sizes.

The Shapiro-Wilk test was used to determine whether continuous variables were normal. Normally distributed variables were represented as mean ± standard deviation and compared using independent t-tests. The Mann-Whitney U test was used to assess variables that did not follow a normal distribution. Categorical variables were given as counts and examined using chi-square tests or Fisher's exact test when anticipated frequencies were low. Correlation analyses were performed using Spearman rank correlation coefficients, and logistic regression analysis was used to identify independent predictors of sexual dysfunction with ASEX-defined dysfunction as the dependent variable and BMI, IPAQ score, and Rosenberg score as independent variables. A p-value of <0.05 was considered statistically significant. All statistical analyses were conducted with IBM SPSS Statistics version 27.0 (IBM Corp., Armonk, NY, USA).

RESULTS

As shown in Table 1, the demographic, anthropometric, hormonal, and questionnaire characteristics of participants were compared according to sedentary status. Of the 60 participants, 21 were classified as sedentary and 39 as non-sedentary. The mean age was 26.4±4.4 years in the sedentary group and 25.4±4.6 years in the non-sedentary group (p=0.333). The mean weight was 63.1±13.4 kg vs. 64.2±14.4 kg (p=0.889); height was 161.2±3.9 cm vs. 162.3±5.6 cm (p=0.448); and BMI was 24.3±5.3 kg/m^2 vs. 24.4±6.1 kg/m^2 (p=0.914) for sedentary and non-sedentary participants, respectively. In the sedentary group, 7 participants and in the non-sedentary group, 16 participants had a BMI ≥25, with no statistically significant difference observed (p=0.559). Waist circumference and WHtR were also similar between groups (84.6±15.3 cm vs. 84.0±13.2 cm, p=0.877; 0.52±0.09 vs. 0.51±0.08, p=0.786). The number of smokers was 8 in the sedentary group and 12 in the non-sedentary group (p=0.566). Hormonal parameters including total testosterone ng/dL (36.6±18.2 vs. 38.6±22.4, p=0.852) and prolactin µg/L (16.6±7.4 vs. 17.4±7.8, p=0.694) showed no significant differences. ASEX scores were 16.0±4.0 in the sedentary group and 15.6±3.2 in the non-sedentary group (p=0.634). The distribution of ASEX groups was similar, with 14 vs. 28 participants classified as functional and 7 vs. 11 as dysfunctional (p=0.679). Rosenberg scores were 23.0±5.0 vs. 21.7±5.0 (p=0.361), and the distribution of Rosenberg groups was also comparable (low: 1 vs. 2; normal: 12 vs. 22; high: 8 vs. 15, p=0.997). However, HbA1c levels (%) were significantly higher in the sedentary group (5.2±0.3 vs. 5.1±0.4, p=0.028). As expected, IPAQ scores were lower in sedentary participants (840.4±1209.4 vs. 2740.0±2440.1, p<0.001), reflecting the classification criteria. These results suggest that sedentary status was associated with higher HbA1c levels but not with differences in hormonal or psychosocial measures.

As shown in Table 2, participants were compared according to obesity status. Of the 60 participants, 23 were placed in group 1 because their BMI ≥25, and 37 were placed in group 2 because their BMI <25. The mean age was 26.3±4.6 years in group 1 and 25.4±4.5 years in group 2 (p=0.425). Mean weight was significantly higher in group 1 (77.8±11.7 kg) compared with

group 2 (55.1±5.7 kg, $p<0.001$). Similarly, BMI (30.0±5.5 vs. 20.9±2.1 kg/m^2, $p<0.001$), waist circumference (96.1±12.4 vs. 76.8±8.6 cm, $p<0.001$), and WHtR (0.59±0.08 vs. 0.47±0.05, $p<0.001$) were significantly higher in group 1 participants. When classified according to WHtR risk categories, the majority of group 1 participants were in the "high" category (22/23) compared with group 2 participants, most of whom were in the "normal" category (24/37), and this difference was statistically significant ($p<0.001$). There were no significant differences in age, smoking status (9 vs. 11 smokers, $p=0.453$), total testosterone ng/dL (41.8±26.0 vs. 35.4±16.9, $p=0.253$), prolactin µg/L (15.7±8.9 vs. 18.0±6.7, $p=0.259$), or HbA1c levels (%) (5.1±0.3 vs. 5.2±0.5, $p=0.907$) between groups. In terms of sexual function, ASEX scores were significantly higher in group 1 participants (17.3±3.4 vs. 14.8±3.1, $p=0.004$), indicating poorer sexual function. The distribution of ASEX functional and dysfunctional groups was similar between groups (functional: 15 vs. 27; dysfunctional: 8 vs. 10, $p=0.524$). Rosenberg self-esteem scores were significantly lower in group 1 (20.5±5.2 vs. 23.2±4.6, $p=0.036$), while the Rosenberg group distribution was similar (low: 2 vs. 1, $p=0.419$). IPAQ scores were not significantly different between group 1 and group 2 participants (2292.4±2859.9 vs. 1940.1±1848.9, $p=0.825$). These findings suggest that having a high BMI is associated with higher ASEX scores and lower self-esteem, while

Table 1. Comparison of variables according to sedentary status

	Sedentar n=21 mean ± SD	**Non-sedentar n=39 mean ± SD**	***p*-value**
Age	26.4±4.4	25.4±4.6	0.333
Weight	63.1±13.4	64.2±14.4	0.889
Height	161.2±3.9	162.3±5.6	0.448
BMI	24.3±5.3	24.4±6.1	0.914
BMI ≥25			0.559
Yes	7	16	
No	14	23	
Waist circumference	84.6±15.3	84.0±13.2	0.877
WHtR points	0.52±0.09	0.51±0.08	0.786
WHtR risk			0.681
Normal	8	17	
High	13	22	
Cigarette			0.566
Smoker	8	12	
Non-smoker	13	27	
Total testosterone ng/dL	36.6±18.2	38.6±22.4	0.852
Prolactin µg/L	16.62±7.4	17.4±7.8	0.694
HbA1c %	5.2±0.3	5.1±0.4	**0.028***
ASEX score	16.0±4.0	15.6±3.2	0.634
ASEX group			0.679
Functional	14	28	
Dysfunctional	7	11	
Rosenberg score	23.0±5.0	21.7±5.0	0.361
Rosenberg group			0.997
Low	1	2	
Normal	12	22	
High	8	15	
IPAQ score (MET-min/week)	840.4±1209.4	2740.0±2440.1	**<0.001***

BMI: body mass index; IPAQ: international physical activity questionnaire; SD: standard deviation; ASEX: Arizona sexual experiences scale. Participants were categorized as group 1, if BMI ≥25 kg/m^2 and as group 2, if BMI <25 kg/m^2; WHtR was categorized as normal (<0.50) or high (≥0.50); *: $p<0.05$ was considered statistically significant; WHtR: waist-to-height ratio

other demographic and hormonal measures did not differ between groups.

As shown in Table 3, correlation analysis revealed a significant negative relationship between Rosenberg self-esteem scores and ASEX scores (r=-0.35, p=0.008), indicating that participants with higher self-esteem had better sexual function. No significant correlation was observed between IPAQ scores and ASEX scores (r=-0.12, p=0.350), whereas BMI showed a modest positive correlation with ASEX scores (r=0.28, p=0.025). Logistic regression analysis, using ASEX-defined sexual dysfunction as the dependent variable, demonstrated that Rosenberg self-esteem was independently associated with sexual dysfunction [odds ratio (OR) =0.86, 95% confidence interval (CI): 0.77-0.97, p=0.013], while BMI also remained an independent predictor (OR =1.13, 95% CI: 1.02-1.26, p=0.020).

DISCUSSION

This cross-sectional study included anthropometric, hormonal, and psychosocial (ASEX, Rosenberg) assessments of sedentary and non-sedentary adults, as well as individuals according to their BMI status. The findings demonstrated a significant association between high BMI, sexual dysfunction, and low

Table 2. Comparison of variables according to weight status

	Group 1 (BMI ≥25) n=23 mean ± SD	**Group 2 (BMI <25) n=37 mean ± SD**	***p*-value**
Age	26.3±4.6	25.4±4.5	0.425
Weight	77.8±11.7	55.1±5.7	**<0.001***
Height	161.3±5.2	162.1±5.1	0.493
BMI	30.0±5.5	20.9±2.1	**<0.001***
Sedentar			0.559
Yes	7	14	
No	16	23	
Waist circumference	96.1±12.4	76.8±8.6	**<0.001***
WHtR	0.59±0.08	0.47±0.05	**<0.001***
WHtR risk			**<0.001***
Normal	1	24	
High	22	13	
Cigarette			0.453
Smoker	9	11	
Non-smoker	14	26	
Total testosterone ng/dL	41.8±26.0	35.4±16.9	0.253
Prolactin µg/L	15.7±8.9	18.04±6.71	0.259
HbA1c %	5.1±0.3	5.15±0.51	0.907
ASEX score	17.3±3.4	14.8±3.1	**0.004***
ASEX group			0.524
Functional	15	27	
Dysfunctional	8	10	
Rosenberg score	20.5±5.2	23.2±4.6	**0.036***
Rosenberg group			0.419
Low	21	1	
Normal	14	20	
High	7	16	
IPAQ score (MET-min/week)	2292.4±2859.9	1940.1±1848.9	0.825

BMI: body mass index; IPAQ: international physical activity questionnaire; SD: standard deviation; ASEX: Arizona sexual experiences scale. Participants were categorized as group 1, if BMI ≥25 kg/m^2 and as group 2, if BMI <25 kg/m^2; WHtR was categorized as normal (<0.50) or high (≥0.50); *: p<0.05 was considered statistically significant; WHtR: waist-to-height ratio

Table 3. Correlation and regression analysis of ASEX scores with Rosenberg, BMI, and IPAQ				
Variable	**r (Spearman)**	***p*-value**	**OR (95% CI)**	***p*-value**
Rosenberg score	-0.35	**0.008***	0.86 (0.77-0.97)	**0.013***
BMI	0.28	**0.025***	1.13 (1.02-1.26)	**0.020***
IPAQ score (MET-min/week)	-0.12	0.350	0.999 (0.998-1.000)	0.245

ASEX: Arizona sexual experiences scale (used as outcome in regression and correlation analyses); r = Spearman correlation coefficient; BMI: body mass index; IPAQ: international physical activity questionnaire; OR: odds ratio; CI: confidence interval; *: $p<0.05$ was considered statistically significant

self-esteem, while physical activity level was associated with HbA1c but showed limited association with hormonal markers and sexual function measures in our cohort. These findings are consistent with prior research that has assessed the metabolic and psychological elements of obesity and physical activity at the same time, bolstering the notion that this is a health issue that necessitates a multidisciplinary approach.[15]

The significantly higher ASEX scores obtained in high BMI individuals, indicating a higher frequency of impaired sexual function, are consistent with previous research. Large epidemiological studies have also discovered that women with a higher BMI have less sexual activity and function, which has been connected to body image and psychosocial issues.[15] Obesity is thought to impact female sexual function through factors such as hormonal alterations, vascular dysfunction, inflammation, and negative body image.[16] Increased adipose tissue, in particular, can disrupt sex hormone metabolism and decrease endothelial function, resulting in reduced sexual stimulation and orgasmic response.[17]

Another significant conclusion in our study is that high BMI patients exhibited reduced Rosenberg self-esteem levels. Prior research has demonstrated that obesity substantially impacts both physical health and psychological well-being, as well as body image.[18] Previous research has found that obese people have lower Rosenberg scores, which is similar to our results. Excess weight has been linked to poor body image and psychological well-being, as well as problems with sex and self-esteem.[19] Low self-esteem and unfavorable body image are associated with diminished sexual desire and satisfaction in women. In this context, the influence of psychological variables related to excess weight on sexual function is considered to be as significant as biological mechanisms.[20]

WHtR is a strong indication of obesity, including abdominal obesity and cardiometabolic hazards. Values above 0.50 indicate significant risk.[10] Obese people had higher WHtR readings, suggesting a higher cardiometabolic risk profile. Central obesity is closely linked to cardiometabolic risk factors and endothelial dysfunction.[21] This could be viewed as a potential mechanism influencing the physiological components of sexual function.

Sedentary persons had higher HbA1c levels, indicating poorer glycemic control. Studies have found a positive relationship between HbA1c levels, BMI, and other anthropometric parameters, suggesting obesity's deleterious impact on glucose homeostasis.[22] The higher HbA1c values in the sedentary group support the unfavorable impact of physical inactivity on metabolic health, although the absolute difference between groups was relatively small. Physical activity has long been associated with increased insulin sensitivity and better glycemic management.[23] Metabolic diseases may have an indirect effect on sexual function by influencing vascular function and hormonal balance over time.[24]

The literature offers conflicting findings about the effects of different types of exercise on sexual function. While pelvic floor exercises usually improve sexual function, the efficacy of aerobic and strength activities is less consistent. Studies, particularly those on postmenopausal women, demonstrate that aerobic exercise has inconsistent impacts on the quality of sexual life, emphasizing the necessity for individualized exercise programs.[25] Unfortunately, our study did not allow for the diversification of exercise types. The significantly higher physical activity scores in our study's non-sedentary group were expected and reflected the study classification criteria. Although previous studies suggest beneficial effects of physical activity on sexual function, psychological well-being, and general health, our study did not demonstrate a significant difference in ASEX scores between sedentary and non-sedentary participants. There have also been studies in men demonstrating that the risk of sexual dysfunction increases with decreased physical activity.[26] While literature indicates beneficial effects of physical activity on sexual function, this association is not uniformly evidenced across all studies.[27] This indicates that the impact of physical activity may be contingent upon characteristics such as duration, intensity, and frequency of exercise.

Total testosterone and prolactin levels did not differ substantially between sedentary and non-sedentary participants or between BMI group 1 and group 2 in our study, implying that changes in sexual function may be influenced more by psychosocial and anthropometric factors than by measurable hormonal alterations. However, because the relationship between

hormones and sexual function in women is complex and multifaceted, additional research is required.[28] Although diverse assessment instruments are used to examine sexual function in women, the connection between BMI and abdominal obesity indicators with sexual dysfunction has been reported in numerous studies; particularly strong impacts have been discovered in certain domains (e.g., orgasm).[29]

In the current study, we found an inverse association between Rosenberg self-esteem and ASEX scores, implying that high self-esteem is linked to better sexual function. Conventional tests have shown a positive association between self-esteem and sexual quality of life, similar to our study.[30] This substantiates the impact of psychological influences on sexual function. Collectively, these studies suggest that women's sexual health is affected by hormonal parameters, metabolic condition, psychological well-being, and lifestyle choices. Addressing obesity and instituting healthy lifestyle interventions may be crucial not only for metabolic health but also for improving women's sexual health.

Study Limitations

A limitation of our study is that participants may have underreported or overreported behaviors related to physical activity or sexual experiences due to social acceptability or personal perceptions. Additionally, the relatively small sample size may limit the generalizability of the results to a larger population. While the sample size is sufficient to detect moderate effect sizes, larger multicenter studies would provide stronger statistical power and external validity.

CONCLUSION

This study's cross-sectional methodology makes it impossible to definitively determine causality. However, the ability to evaluate numerous factors simultaneously (anthropometry, survey scores, and hormonal levels) is a strength. The relationship between high BMI, sedentary lifestyle, self-esteem, and sexual function is an important public health issue, affecting both individual and community health. These findings suggest that weight control, psychosocial support, and promotion of physical activity may contribute to improvements in metabolic health and overall sexual health.

ETHICS

Ethics Committee Approval: Ethical approval was obtained from the Pamukkale University Faculty of Medicine Ethics Committee (approval number: E-60116787-020-839579, date: 24.02.2026).

Informed Consent: Informed consent was obtained.

FOOTNOTES

Contributions

Concept: A.A., Ay.A., D.K.G., Design: A.A., Ay.A., D.K.G., Data Collection or Processing: A.A., Ay.A., Analysis or Interpretation: A.A., Ay.A., Literature Search: A.A., Ay.A., D.K.G., Writing: A.A., Ay.A., D.K.G.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

REFERENCES

1. Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States: prevalence and predictors. JAMA. 1999; 281: 537-44. Erratum in: JAMA 1999; 281: 1174.
2. Wheeler LJ, Guntupalli SR. Female sexual dysfunction: pharmacologic and therapeutic interventions. Obstet Gynecol. 2020; 136: 174-86.
3. Simon JA, Ohleth K. Testosterone for treating female sexual dysfunction. Clin Obstet Gynecol. 2025; 68: 60-7.
4. David K, De Vincentis S, Antonio L. Impact of hyperprolactinemia on sexual function. J Sex Med. 2024; 21: 197-9.
5. Salari N, Hasheminezhad R, Hosseinian-Far A, Mohammadi M. Global prevalence of female sexual dysfunction based on physical activity: a systematic review and meta-analysis. BMC Womens Health. 2025; 25: 200.
6. Yıldız Karaahmet A, Dişli Çetinçay D, Hotun Şahin N. Exercise and sexuality in women with menopausal symptoms: a systematic review and meta-analyses of randomized controlled trials. Int J Nurs Pract. 2025; 31: e13318.
7. Fausto DY, Martins JBB, Moratelli JA, Lima AG, Guimarães ACA. The effect of body practices and physical exercise on sexual function of menopausal women. A systematic review with meta-analysis. Int J Sex Health. 2023; 35: 414-26.
8. Craig CL, Marshall AL, Sjöström M, et al. International physical activity questionnaire: 12-country reliability and validity. Med Sci Sports Exerc. 2003; 35: 1381-95.
9. Lia CG, Greco F, D'Amato A, Tarsitano MG, Emerenziani GP, Quinzi F. The role of physical exercise in sexual health and body image in women living with and surviving breast cancer: a scoping review. Healthcare (Basel). 2025; 13: 741.
10. Shen S, Lu Y, Qi H, et al. Waist-to-height ratio is an effective indicator for comprehensive cardiovascular health. Sci Rep. 2017; 7: 43046.
11. Öztürk M. Üniversitede eğitim-öğretim gören öğrencilerde uluslararası fiziksel aktivite anketinin geçerliliği ve güvenirliği ve fiziksel aktivite düzeylerinin belirlenmesi. Ankara: Hacettepe

Üniversitesi Sağlık Bilimleri Enstitüsü; Bilim Uzmanlığı Tezi; 2005.

12. Schmitt DP, Allik J. Simultaneous administration of the Rosenberg self-esteem scale in 53 nations: exploring the universal and culture-specific features of global self-esteem. J Pers Soc Psychol. 2005; 89: 623-42.
13. Çuhadaroğlu F. Rosenberg benlik saygısı ölçeğinin (RSES) Türkçe uyarlaması: geçerlilik ve güvenirlik çalışması. Hacettepe Üniversitesi Tıp Fakültesi Uzmanlık Tezi; 1986.
14. McGahuey CA, Gelenberg AJ, Laukes CA, et al. The Arizona sexual experience scale (ASEX): reliability and validity. J Sex Marital Ther. 2000; 26: 25-40.
15. Faubion SS, Fairbanks F, Kuhle CL, et al. Association between body mass index and female sexual dysfunction: a cross-sectional study from the data registry on experiences of aging, menopause, and sexuality. J Sex Med. 2020; 17: 1971-80.
16. Barbagallo F, Cucinella L, Tiranini L, Chedraui P, Calogero AE, Nappi RE. Obesity and sexual health: focus on postmenopausal women. Climacteric. 2024; 27: 122-36.
17. Kolotkin RL, Andersen JR. A systematic review of reviews: exploring the relationship between obesity, weight loss and health-related quality of life. Clin Obes. 2017; 7: 273-89.
18. Puhl RM, Himmelstein MS, Pearl RL. Weight stigma as a psychosocial contributor to obesity. Am Psychol. 2020; 75: 274-89.
19. Türkben Polat H, Kaplan Serin E. Self-esteem and sexual quality of life among obese women. Perspect Psychiatr Care. 2021; 57: 1083-87.
20. Woertman L, van den Brink F. Body image and female sexual functioning and behavior: a review. J Sex Res. 2012; 49: 184-211.
21. Ross R, Neeland IJ, Yamashita S, et al. Waist circumference as a vital sign in clinical practice: a consensus statement from the IAS and ICCR working group on visceral obesity. Nat Rev Endocrinol. 2020; 16: 177-89.
22. Bala M, Meenakshi, Aggarwal S. Correlation of body mass index and waist/hip ratio with glycated hemoglobin in prediabetes. EJIFCC. 2019; 30: 317-24.
23. Kanaley JA, Colberg SR, Corcoran MH, et al. Exercise/physical activity in individuals with type 2 diabetes: a consensus statement from the American College of Sports Medicine. Med Sci Sports Exerc. 2022; 54: 353-68.
24. Longo M, Cirillo P, Scappaticcio L, et al. Female sexual function in young women with type 1 diabetes and additional autoimmune diseases. J Sex Med. 2021; 18: 219-23.
25. Carcelén-Fraile MDC, Aibar-Almazán A, Martínez-Amat A, et al. Effects of physical exercise on sexual function and quality of sexual life related to menopausal symptoms in peri- and postmenopausal women: a systematic review. Int J Environ Res Public Health. 2020; 17: 2680.
26. Janiszewski PM, Janssen I, Ross R. Abdominal obesity and physical inactivity are associated with erectile dysfunction independent of body mass index. J Sex Med. 2009; 6: 1990-8.
27. Stanton AM, Handy AB, Meston CM. The effects of exercise on sexual function in women. Sex Med Rev. 2018; 6: 548-57.
28. Myers A, Marino J, Connor K, Kelley EL, Kingsberg SA, Pope R. Female sexual function, dysfunction, and treatment: a biopsychosocial multidisciplinary approach. J Minim Invasive Gynecol. 2026; 33: 10-5.
29. Keçe AC, Kırmızı DA, Başer E, Şahin NS. Body mass index, waist/hip ratio and sexual dysfunction. Pelviperineology. 2024; 43: 48-53.
30. Husain FS, Lulla D, Tay TKC, Lee JM, Dhaliwal SS, Ang SB. Association between body mass index, body image and self-esteem with sexual function: a survey of young women in Singapore. Ann Acad Med Singap. 2023; 52: 190-8.