






ORIGINAL ARTICLE

Investigation of the Relationships Between Physical Activity Levels and Sexual Response During Pregnancy

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Received: April 03, 2026 / Accepted: April 24, 2026

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Abstract

Objective: The aim of this study was to investigate the relationships between physical activity types and intensity levels and the subdomains of sexual response during pregnancy.

Methods: Healthy pregnant women between 10 and 35 gestational weeks were included in the study. Participants' descriptive characteristics and obstetric histories were recorded. Physical activity levels were assessed using the Pregnancy Physical Activity Questionnaire, and sexual responses were evaluated with the Pregnancy Sexual Response Inventory. Spearman correlation analysis was performed to examine relationships between numerical variables, and statistical significance was set at $p < 0.05$.

Results: In the study, including a total of 139 pregnant women, positive correlations were observed between light- and moderate-intensity physical activity levels and various subdomains of sexual function (frequency, arousal, orgasm, satisfaction, etc.) ($p < 0.05$). In particular, sports/exercise activity levels were found to be associated with the greatest number of sexual function subdomains ($p < 0.05$). In contrast, no associations were identified between vigorous-intensity activity or household/caregiving activity levels and sexual response dimensions ($p > 0.05$).

Conclusion: While light- to moderate-intensity activities and sports/exercise activities during pregnancy were associated with better sexual response, this was not the case for high-intensity activities or non-pleasurable household/caregiving tasks. Further studies are needed to elucidate the interaction between physical activity and sexual response during pregnancy.

Keywords: physical activity, pregnancy, sexual response

INTRODUCTION

Pregnancy is a dynamic process in a woman's life, involving numerous physical, physiological, and psychosocial changes. Hormonal fluctuations, increased cardiovascular load, metabolic adaptations, and weight gain during pregnancy affect the expectant mother's physical capacity, body image, sleep quality, and energy levels (1,2). Moreover, psychological stress, altered body perception, decreased physical comfort, changes in the relationship with the partner, and beliefs about the potential negative consequences of sexual activity during pregnancy, as well as sociocultural factors, can influence sexual function dimensions in pregnant women, including sexual desire, frequency of sexual activity, arousal, satisfaction, and orgasm (3).

Sexual dysfunction in pregnant women has been reported to have a high global prevalence, reaching up to 70%. Considering that pregnancy is a natural process in a woman's life, and that sexual dysfunction—an often neglected issue—significantly affects quality of life during this period, it is important to increase the evidence base regarding sexuality during pregnancy and to develop strategies for the prevention of these disorders (2,4).

One of the important factors affecting sexual response is the level of physical activity. Physical activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure above resting levels. Regular physical activity is associated with numerous benefits, including a reduced risk of premature mortality, prevention of risks associated with various chronic diseases, alleviation of anxiety and depressive symptoms, and improvement of mental health (5).

Although studies investigating the effects of physical activity on sexual function in women are limited and inconsistent, some research has reported that higher levels of physical activity are associated with better sexual function in women (5). Exercise may enhance sexual function by promoting relaxation, reducing body fat percentage, increasing muscle mass, improving physical comfort, and enhancing self-confidence and body image (6,7). A systematic review and meta-analysis conducted in 2025 demonstrated that sexual dysfunction is more prevalent among women with low or no physical activity compared to more active women (5). Various studies indicate that adequate

levels of physical activity may play a significant role in the prevention of sexual dysfunction (6,7). In this context, multiple healthcare professionals may be involved in interventions related to sexual function; however, physiotherapists represent a professional group with overlapping expertise in pregnancy, sexual function, and physical activity. Therefore, the role of physiotherapists becomes increasingly important in the management of problems observed in this population.

Although the relationship between physical activity and sexuality has been examined in specific female populations, such as postmenopausal women, breast cancer survivors, and women with type 1 diabetes (6,8,9), to our knowledge, it has been addressed in only one study among pregnant women. In that study, the primary focus was not directly on physical activity and sexuality; rather, it aimed to compare sexual response in pregnant women with and without pelvic girdle pain and to examine whether sexual response was associated with physical activity levels (2). Therefore, the aim of the present study is to comprehensively examine sexual response during pregnancy and to investigate its relationship with physical activity levels.

MATERIALS AND METHODS

This study was conducted on pregnant women referred for obstetric physiotherapy and rehabilitation to the Pelvic Health and Women's Health Physiotherapy and Rehabilitation Unit at Hacettepe University Faculty of Physical Therapy and Rehabilitation. The study was carried out in accordance with the principles of the Declaration of Helsinki. The study protocol was reviewed and approved by the Non-Invasive Clinical Research Ethics Committee of Hacettepe University and was deemed ethically appropriate from a medical standpoint (Approval: GO 17/507-31, Date: 2017-07-04).

The inclusion criteria for the study were: age between 20 and 45 years, gestational age between 10 and 35 weeks, and no impediment to completing the study questionnaires. The exclusion criteria included pregnant women with conditions limiting or contraindicating physical activity, such as diabetes, hypertension, multiple pregnancy, heart disease, or chronic kidney disease, as well as conditions limiting or contraindicating sexual activity, including placenta previa, risk of preterm birth, cervical insufficiency, antepartum bleeding, premature rupture of membranes, and genital infections.

Demographic, physical, obstetric, and medical information of the pregnant women was recorded. Physical activity levels were assessed using the Turkish version of the Pregnancy Physical Activity Questionnaire (PPAQ) (10), while sexual activity and sex-related problems were evaluated using the Turkish version of the Pregnancy Sexual Response Inventory (PSRI) (11).

The PPAQ determines the weekly physical activity level based on the time spent on a total of 32 activities. The questionnaire includes activity categories of household/caregiving activities (13 items), occupational activities (5 items), sports/exercise activities (8 items), transportation activities (3 items), and inactivity (3 items). The PPAQ also calculates the MET value for each activity according to the time spent performing it. The intensity of each activity is classified as follows: sedentary (<1.5 MET), light (1.5–3.0 MET), moderate (3.0–6.0 MET), and vigorous (>6.0 MET). In this way, the average weekly energy expenditure in MET-hours/week is calculated for each activity level (12).

PSRI was developed to evaluate sexual activity during pregnancy and pregnancy-related sexual problems. The subheadings assessed by the PSRI include sociodemographic characteristics, perceptions of sexuality before and during pregnancy, and sexual behaviors. The questionnaire consists of a total of 38 items. Questions related to sexuality and sexual activity are divided into nine domains, including frequency of sexual activity, sexual desire, sexual satisfaction in women/men, arousal, orgasm, dyspareunia, beginning of sexual intercourse, sexual difficulty in women, and the pregnant woman’s perception of her partner’s sexual response (sexual difficulty in men). For the total sexual function score, the PSRI is divided into 10 domains, including 8 related to the woman’s feelings and 2 related to the pregnant woman’s perceptions of her partner. Scores range from 0 to 100, with higher scores indicating better sexual response (13).

We used the STROBE reporting guideline (14) to draft this manuscript, and the STROBE reporting checklist (15) when editing, included in supplement A.

Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics 27. The normality of numerical data was assessed both visually (histograms and probability

plots) and analytically (Kolmogorov–Smirnov and Shapiro–Wilk tests). Descriptive numerical data were presented as means with standard deviations and minimum–maximum values. Relationships between variables were analyzed using Spearman’s correlation test. A p-value of <0.05 was considered statistically significant for all analyses.

RESULTS

A total of 157 pregnant women were initially screened for the study, of whom 18 were excluded due to not meeting the inclusion criteria (insufficient literacy, n = 2; vaginal bleeding, n = 3; risk of miscarriage, n = 3; risk of preterm birth, n = 5; or unwillingness to participate, n = 5). Consequently, 139 pregnant women were included in the study. A flow diagram of the study selection process is presented in Figure 1.

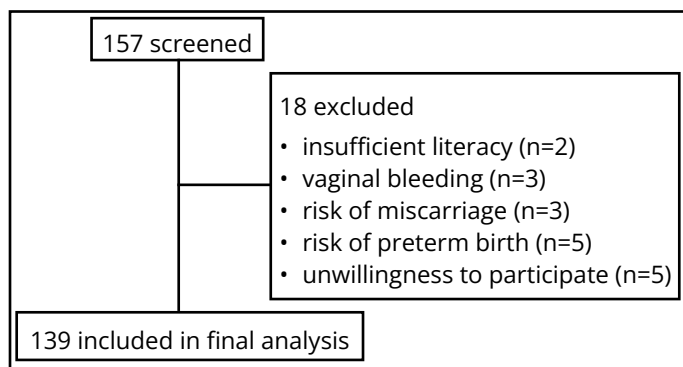


Figure 1. Flow Diagram of Study Participants

The participants had a mean age of 29.5 ± 4.8 years and a mean gestational age of 27.01 ± 6.21 weeks. Most participants were in their second or subsequent pregnancy (55.4%), while additional demographic and clinical characteristics are presented in Table 1.

Table 1. Descriptive Characteristics of Pregnant Women

Parameters	Participants (n=139)
Age (years)	29.5 ± 4.8 (20-40)
Body Weight (kg)	75.2 ± 10.5 (45-110)
Height (m)	1.64 ± 0.06 (1.50-1.77)
Body Mass Index (kg/m²)	26.95 ± 4.56 (18.07-38.67)
Gestational Week	27.01 ± 6.21 (14-35)
Gravidity	
First Pregnancy	62 (44.6%)
Second and Subsequent Pregnancies	77 (55.4%)

n: Number of participants, %: percentage. Data were presented as mean±standard deviation (minimum-maximum).

No significant relationship was found between total physical activity, vigorous-intensity activity, and household/caregiving activity scores and sexual response scores ($p > 0.050$).

Sedentary activity scores were weakly and positively correlated with the male satisfaction subscale ($p < 0.050$) (Table 2).

Light-intensity activity scores showed weak-to-moderate positive correlations with the frequency, arousal, orgasm, satisfaction, and male satisfaction subscales, as well as the total score ($p < 0.050$) (Table 2). Moderate-intensity activity scores showed weak positive correlations with the frequency, arousal, orgasm, female difficulty subscale scores, and the total score ($p < 0.050$) (Table 2).

Occupational activity scores showed weak-to-moderate positive correlations with the frequency, arousal, orgasm, satisfaction, female difficulty, and male satisfaction subscale scores, as well as the total score ($p < 0.050$) (Table 2).

Weak-to-moderate positive correlations were observed between sports/exercise activity scores and the frequency, desire, arousal, orgasm, satisfaction, intercourse initiation, female difficulty, and male satisfaction subscale scores, in addition to the total score ($p < 0.050$) (Table 2).

DISCUSSION

To our knowledge, this study is the first to examine the relationship between physical activity types and intensity levels and sexual response in pregnant women. The findings indicate that the association between physical activity and sexual response during pregnancy varies according to both the type and intensity of the activities. Total physical activity, vigorous-intensity activity, and household/caregiving activities were not found to be associated with sexual response. On the other hand, light- and moderate-intensity activities and occupational activities and sports/exercise activities demonstrated weak-to-moderate associations with various sexual response subdomains.

Studies examining the effects of physical activity on female sexual function are limited and methodologically heterogeneous. Existing research has primarily

focused on specific female populations, such as peri- and postmenopausal women, individuals with type 1 diabetes, and breast cancer survivors (8,9). To our knowledge, only one study has addressed this topic during pregnancy, with a primary focus on pregnancy-related pelvic girdle pain (2). In that study, sexual function was compared between pregnant women with and without pelvic girdle pain, and correlations between women's physical activity levels and sexual function were also assessed, revealing significant positive associations similar to those observed in the present study. Furthermore, the study reported a marked decline in sexual function during pregnancy compared to the pre-pregnancy period, highlighting the impact of pregnancy on sexual health and the importance of not overlooking associated issues (2). In addition, several studies in non-pregnant populations have reported a positive association between higher levels of physical activity and sexual function (6,8,9).

In the present study, no significant associations were found between total physical activity, vigorous-intensity activity, or household/caregiving activity levels and sexual response subdomains. This suggests that, rather than the overall level of physical activity, the type and intensity of activity may be more influential on sexual function. The absence of an association between vigorous-intensity activity and sexual response may be explained by pregnant women rarely engaging in or avoiding vigorous activity due to fear, anxiety, or safety concerns (16). Additionally, the lack of association for household/caregiving activities may be attributed to their specific nature and the fact that a large proportion of the participants in the study were primiparous.

A meta-analysis examining the prevalence of female sexual dysfunction according to physical activity levels reported a higher prevalence of sexual dysfunction among women with low physical activity levels or a sedentary lifestyle (5). The findings of the present study, in which low- and moderate-intensity physical activity was associated with various sexual response subdomains in pregnant women compared to sedentary activity, support this observation.

In a retrospective cross-sectional study including 322 pre- and postmenopausal women, it was reported that women with higher levels of physical activity had better sexual function compared to sedentary women, with

Table 2. Relationship of Types of Physical Activity and Sexual Response Scores During Pregnancy

Types of Physical Activity-Sexual Response		Frequency of sexual activity	Sexual desire	Arousal	Orgasm	Sexual satisfaction in women	Dyspareunia	Beginning of sexual intercourse	Sexual difficulty in women	Sexual difficulty in men	Sexual satisfaction in men	Total score
Total activity	r	-0.50	-0.003	0.051	0.001	-0.077	0.091	0.006	-0.058	0.096	-0.053	0.011
	p	0.556	0.974	0.551	0.987	0.367	0.286	0.944	0.494	0.262	0.537	0.897
Sedentary activity	r	0.143	0.018	0.156	0.162	0.111	-0.091	0.035	0.024	0.013	0.179	0.115
	p	0.094	0.835	0.067	0.057	0.193	0.287	0.682	0.780	0.878	0.035*	0.178
Light-intensity activity	r	0.304	0.118	0.284	0.277	0.181	-0.026	0.050	0.076	0.151	0.232	0.243
	p	<0.001*	0.168	<0.001*	<0.001*	0.033*	0.764	0.558	0.371	0.077	0.006*	0.004*
Moderate-intensity activity	r	0.207	0.059	0.264	0.223	0.167	0.038	0.092	0.236	0.076	0.077	0.240
	p	0.014*	0.491	0.002*	0.008*	0.050	0.660	0.281	0.005*	0.373	0.368	0.004*
Vigorous-intensity activity	r	0.136	0.063	0.071	0.107	0.104	-0.117	-0.037	-0.001	0.018	0.132	0.066
	p	0.109	0.463	0.409	0.209	0.222	0.170	0.662	0.993	0.834	0.121	0.441
Household/caregiving activity	r	0.042	0.020	0.100	0.104	-0.041	0.004	0.027	-0.012	0.160	0.034	0.065
	p	0.623	0.813	0.240	0.224	0.629	0.959	0.756	0.885	0.060	0.695	0.450
Occupational activity	r	0.291	0.105	0.289	0.396	0.257	0.071	0.162	0.213	-0.071	0.216	0.297
	p	<0.001*	0.220	<0.001*	<0.001*	0.002*	0.406	0.056	0.012*	0.408	0.011	<0.001*
Sports/ exercise activity	r	0.544	0.179	0.618	0.487	0.447	0.157	0.264	0.319	0.138	0.372	0.551
	p	<0.001*	0.035*	<0.001*	<0.001*	<0.001*	0.065	0.002*	<0.001*	0.105	<0.001*	<0.001*

r: Correlation Coefficient. *p<0.050. p: Spearman Correlation.

the differences being particularly pronounced in sexual desire, arousal, and lubrication. Interestingly, the 'highly active' group with the highest levels of physical activity exhibited lower scores in certain psychosexual parameters. In this group, sexual satisfaction was reduced, and some psychopathological symptoms were more prevalent, with certain parameters even scoring lower than those in the sedentary group (6). Similarly, in the present study, no associations were observed between vigorous-intensity activity and sexual response subdomains. As previously noted, the avoidance or minimal engagement in vigorous physical activity by the pregnant population may be an important factor explaining this lack of association.

Another key finding of the study is that sports/exercise activities were significantly associated with more sexual response subdomains than other activity types, while occupational activities were positively associated with several sexual response dimensions. This suggests that physical activity may be more effective in its sports or exercise component, but its benefits are not limited to these activities, as being active in daily life can also contribute positively to sexual health. On the other hand, no associations were found between household/caregiving activities and sexual response subdomains. This indicates that mandatory activities, such as household tasks, which may lack elements of enjoyment or pleasure, do not appear to have a positive impact on sexual function.

The strength of this study lies in being the first to comprehensively and multidimensionally examine the relationship between physical activity and sexual response during pregnancy. In addition, the use of pregnancy-specific instruments rather than general scales to assess physical activity and sexual function represents another strength of the study. On the other hand, a major limitation is the cross-sectional and correlational design, which precludes causal inferences. Furthermore, the potential confounding effects of various factors that may influence sexual function, such as psychosocial factors, hormonal changes, and partner relationship dynamics, were not controlled, representing an additional limitation of the study.

CONCLUSION

Based on the study findings, sexual response during pregnancy appears to vary according to the intensity

and type of physical activity. Light- and moderate-intensity activities, particularly those involving sports or exercise, may enhance sexual function in pregnant women, whereas high-intensity activities or physically demanding but non-pleasurable tasks, such as household chores, do not seem to contribute significantly to sexual function. High-quality, methodologically robust future research is needed to more clearly elucidate the relationship between physical activity and sexual function during pregnancy.

Acknowledgments: None.

Conflict of Interest: The authors report no conflicts of interest.

Informed Consent: Informed consent was obtained from all participants.

Funding: This study did not receive any funding.

Ethical Approval: The study was approved by the Non-Invasive Clinical Research Ethics Committee of Hacettepe University (Approval No: GO 17/507-31, Date: 2017-07-04).

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- Concept and Design: G.G., T.A.
- Supervision: S.O., T.A.
- Data Collection and/or Processing: G.G., M.S.B.
- Materials: G.G., M.S.B.
- Analysis and/or Interpretation: H.D., G.G.
- Literature Search: H.D., G.G., S.O.
- Writing and Critical Review: H.D., G.G., S.O., T.A.

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