



Determination of exercise attitudes of women of reproductive age in pregnancy

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ARTICLE INFO

Keywords:
Pregnancy
Pregnant
Exercise
Attitude

ABSTRACT

Objective: This study was conducted to evaluate the exercise attitudes of women of reproductive age during pregnancy.

Method: The descriptive study was conducted with 326 women who applied to the gynecology outpatient clinics of a state hospital between September and November 2023. Data were collected with the "Personal Information Form" and "Exercise Attitudes in Pregnant Women Scale". Statistical analyses were analyzed at $p < .05$ significance level with the independent samples t test method.

Results: Most of the participants (85.6%) stated that they did not know the benefits of exercise during pregnancy and did not exercise during pregnancy (89.6%). The mean exercise attitude scale score of the participants was 135.42 ± 25.90 . A significant difference was found between the participants' education level, exercising outside pregnancy, attending a pregnancy school, knowing the benefits of exercise during pregnancy and exercising during pregnancy and all sub-dimension scores ($p < .05$).

Conclusion: In the study, it was observed that the participants had positive attitudes towards exercise during pregnancy, although their knowledge and behaviors were insufficient. Women's attitudes towards exercise should be determined by health professionals and women's positive attitudes, knowledge and behaviors should be improved by organizing trainings and exercise programs starting from pre-pregnancy.

Introduction

Pregnancy, which is a normal part of a woman's life and never a disease state, is characterized by physiological, psychological and hormonal changes [1]. Good management of the woman's body during this period ensures that both pregnancy and the following periods are experienced more easily and comfortably [2]. During pregnancy, women's motivation to initiate/continue healthy lifestyle behaviors, including exercise, significantly affects both maternal and fetal health [3]. It has been reported that regular physical exercise during pregnancy contributes to the prevention of gestational diabetes, hypertensive disorders, weight control, musculoskeletal pain and digestive problems, psychological problems, weakness and fatigue and their negative consequences [4].

In addition to the benefits it provides during pregnancy, it is reported to be effective on easy and intervention-free delivery, easy postpartum weight loss, recovery and emotional states (2–6).

Data obtained from health authorities and numerous scientific studies suggest that exercise during pregnancy is safe and has numerous

benefits [5–7]. The American College of Obstetricians and Gynecologists recommends that healthy pregnant women regularly participate in moderate-intensity physical activity for at least 20–30 min a day in the prenatal and postnatal period [5]. The World Health Organization guideline similarly emphasizes the importance of physical activity during pregnancy [8]. However, women's lack of knowledge about exercise during pregnancy and concerns about potential risks related to exercise lead to abandonment or refusal to exercise in this period [9].

There are limited studies in the literature on exercise attitudes and exercise status of pregnant women. It is very important to determine the beliefs, knowledge and attitudes of all women of reproductive age, pregnant or not, about the benefits of exercise during pregnancy and to develop a positive exercise attitude in them. In this way, it will be ensured to create exercise programs to prevent sedentary life and overweight during pregnancy and to maximize compliance with exercise. Accordingly, this study was conducted to evaluate the exercise attitudes of women of reproductive age during pregnancy.

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<https://doi.org/10.1016/j.eurox.2024.100294>

Received 29 December 2023; Received in revised form 16 February 2024; Accepted 28 February 2024

Available online 2 March 2024

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Table 1
Frequency and Percentage Distribution According to Demographic Variables.

Variables	Group	f	%
Age	35 Years and Under	261	80.1
	36 and Over	65	19.9
Working status	Yes	156	47.9
	No	170	52.1
Place of residence	Country	200	61.3
	City	126	38.7
Family structure	Nuclear family	281	86.2
	Extended family	45	13.8
Economic status	Income less than expenditure	244	74.8
	Income equal to or more than expenditure	82	25.2
Marital status	Single	49	15.0
	Married	277	85.0
Education level	Secondary school and below	244	74.8
	High school and above	82	25.2
BMI	Normal (18.5-24.9 kg/m ²)	262	80.4
	Overweight (25.0-29.9 kg/m ²)	64	19.6
Number of births	Primiparous	116	35.6
	Multipar	210	64.4
Smoking	Yes	61	18.7
	No	265	81.3
Chronic disease status	Yes	20	6.1
	No	306	93.9

Table 2
Distribution According to Participants' Knowledge and Behavior on Exercise During Pregnancy.

Variables	Group	f	%
Presence of an obstacle to exercise during pregnancy	Yes	12	3.7
	No	314	96.3
Exercise outside of pregnancy	Yes	34	10.4
	No	292	89.6
Having problems during pregnancy	Yes	51	15.6
	No	275	84.4
Participation in pregnancy school	Yes	41	12.6
	No	285	87.4
Knowledge of the benefits of exercise during pregnancy	Yes	47	14.4
	No	279	85.6
Exercise during pregnancy	Yes	34	10.4
	No	292	89.6

Method

This study is descriptive in nature. The data were collected face-to-face with women who applied to the gynecology outpatient clinics of a state hospital between September and November 2023. In the study, 326 women who agreed to participate in the study and who met the research criteria were included in the study between the dates of the study without using the sampling method.

Inclusion criteria.

- Being between 18-49 years of age (reproductive age)
- Being pregnant or having had a pregnancy
- Graduated from at least primary school
- Being healthy
- Volunteering to participate in the research.

Exclusion criteria.

- Not between 18-49 years of age
- No pregnancy
- Communication problems
- Women with health problems were not included in the study.

Data collection tools

The data of the study were collected with the Personal Information Form and the Scale of Exercise Attitudes in Pregnant Women.

Personal information form

This form was prepared by the researchers and consisted of 27 questions to examine the socio-demographic, obstetric, exercise knowledge and behavioral characteristics of the participants [4,6,7,10].

Pregnant women's exercise attitude scale (PEAS)

The scale developed by Toprak Celenay et al. in 2021 is a 5-point Likert-type scale consisting of 37 items and 2 sub-dimensions. The Cronbach's alpha internal consistency coefficient of the scale was found to be 0.90 for the whole scale, 0.91 for the information and benefit sub-dimension (24 items), and 0.87 for the barrier sub-dimension (13 items). The scale score ranged between 37 and 185. A high score obtained from the scale indicates that pregnant women develop a positive attitude towards exercise [11].

Data collection

The research data were collected by the researcher personally through face-to-face interviews with women who volunteered to participate after explaining the purpose and scope of the study. The interviews were conducted in the training room of the institution after the examination in a way that would not disrupt the outpatient clinic routines of the women. The duration of the interview was approximately 10–15 min.

Data analysis

SPSS 28 program was used for data analysis. Frequency and percentage distribution were given according to demographic variables and questionnaire items related to exercise during pregnancy. Descriptive statistical values for exercise attitude during pregnancy and its sub-dimensions were obtained and skewness and kurtosis values were examined for the normality of the scale scores. For statistical analyses, the independent samples t test method, which is used to compare continuous and normally distributed scores according to two groups, was used. For statistical analyses, p < .05 significance level was examined.

Ethics committee statement

Before the data collection process started, ethical approval permission was obtained from the Non-Interventional Clinical Research Ethics Committee of a state university (Date-Number: XXX - XXX) and the hospital where the research will be conducted. Before the interview, women were informed about the purpose of the study and how it would

Table 3
Descriptive Statistics Table According to Exercise Scores and Subscales in Pregnancy.

Score	Smallest	Biggest	x̄	S.D.	Skewness	Kurtosis
Knowledge benefit	48	120	90.56	16.71	-0.449	0.441
Barrier	26	65	44.85	11.67	-0.14	-0.875
Pregnancy Exercise Total	74	185	135.42	25.90	-0.095	0.200

Table 4
Comparison of the mean scores of the Exercise Attitude Scale in Pregnant Women according to the descriptive characteristics of the participants.

Variables	N	Knowledge benefit x̄ ± S.D.	Barrier x̄ ± S.D.	Scale Total x̄ ± S.D.
Age				
35 years and Under	261	91 ± 17	45.2 ± 11.9	136.2 ± 26.5
36 and over	65	88.7 ± 15.5	43.6 ± 10.6	132.3 ± 23.3
P		0.326	0.328	0.282
Number of births				
Primiparous	116	88.7 ± 16.8	43.3 ± 11.6	132 ± 25.8
Multipar	210	91.6 ± 16.6	45.7 ± 11.7	137.3 ± 25.8
P		0.132	0.078	0.077
Working status				
Yes	156	92.1 ± 16.2	44.8 ± 12.1	136.8 ± 25.3
No	170	89.2 ± 17.1	44.9 ± 11.3	134.1 ± 26.4
P		0.118	0.902	0.341
Place of residence				
Country	200	91.2 ± 14.8	44.8 ± 11	135.9 ± 22.8
City	126	89.6 ± 19.4	45 ± 12.7	134.6 ± 30.3
P		0.399	0.857	0.644
Family structure				
Nuclear family	281	90.5 ± 17.1	45.1 ± 11.7	135.6 ± 26.4
Extended family	45	90.7 ± 13.8	43.3 ± 11.7	134 ± 22.5
P		0.95	0.327	0.689
Economic status				
Income less than expenditure	244	90.8 ± 16.3	45.7 ± 11.2	136.5 ± 25.3
Income equal to or more than expenditure	82	89.9 ± 18.1	42.3 ± 12.8	132.2 ± 27.5
P		0.657	0.124	0.193
Marital status				
Single	49	93.2 ± 15.4	43 ± 12.6	136.2 ± 23.6
Married	277	90.1 ± 16.9	45.2 ± 11.5	135.3 ± 26.3
P		0.224	0.229	0.809
Smoking				
Yes	61	90.4 ± 20.6	42.5 ± 13.7	132.9 ± 30.8
No	265	90.6 ± 15.7	45.4 ± 11.1	136 ± 24.7
P		0.943	0.076	0.398
Chronic disease status				
Yes	20	92.3 ± 16.4	46.8 ± 11.5	139.1 ± 26.6
No	306	90.5 ± 16.7	44.7 ± 11.7	135.2 ± 25.9
P		0.632	0.442	0.512
Education level				
Secondary school and below	244	87.6 ± 14.5	42.6 ± 10.2	130.2 ± 21.6
High school and above	82	99.5 ± 19.6	51.5 ± 13.2	151 ± 31
P		.000*	.000*	.000*
BMI				
Normal	262	91.8 ± 16.5	44.9 ± 12.1	136.7 ± 25.9
Overweight	64	85.3 ± 16.5	44.7 ± 10	130.1 ± 25.6
P		0.175	0.919	0.065

* p < 0.05

Table 5
Comparison of the mean scores of the Exercise Attitude Scale in Pregnant Women according to the participants' Exercise Knowledge and Behaviors during Pregnancy.

Variables	N	Knowledge benefit x̄ ± S.D.	Barrier x̄ ± S.D.	Scale Total x̄ ± S.D.
Obstacles to exercise during pregnancy				
Yes	12	88.3 ± 13.1	46.6 ± 6.7	134.9 ± 19.4
No	314	90.6 ± 16.8	44.8 ± 11.8	135.4 ± 26.1
P		0.638	0.601	0.946
Exercise outside of pregnancy				
Yes	34	108.9 ± 17.4	57.7 ± 11.2	166.6 ± 27.2
No	292	88.4 ± 15.3	43.4 ± 10.8	131.8 ± 23.2
P		.000*	.000*	.000*
Having problems during pregnancy				
Yes	51	91.6 ± 18.3	47.7 ± 11.2	139.3 ± 28.5
No	275	90.4 ± 16.4	44.3 ± 11.7	134.7 ± 25.4
P		0.628	0.057	0.243
Participation in pregnancy school				
Yes	41	104.4 ± 18.7	54.3 ± 12.8	158.7 ± 29.6
No	285	88.6 ± 15.5	43.5 ± 10.9	132.1 ± 23.6
P		.000*	.000*	.000*
Knowledge of the benefits of exercise during pregnancy				
Yes	47	103.6 ± 18.4	53.1 ± 13.1	156.8 ± 29.7
No	279	88.4 ± 15.4	43.5 ± 10.8	131.8 ± 23.4
P		.000*	.000*	.000*
Exercise during pregnancy				
Yes	34	108.9 ± 17.4	57.7 ± 11.2	166.6 ± 27.2
No	292	88.4 ± 15.3	43.4 ± 10.8	131.8 ± 23.2
P		.000*	.000*	.000*

* p < 0.05

be conducted, and their consent was obtained. The study was conducted in alignment with the Principles of the Declaration of Helsinki.

Results

The distribution of the descriptive characteristics of the 326 participants in the study is presented in Table 1.

The findings regarding the participants' exercise behaviors in their current or most recent pregnancy and their knowledge of exercise during pregnancy are presented in Table 2. Accordingly, 96.3% of the participants stated that there was no obstacle to exercise during pregnancy, 89.6% stated that they did not exercise outside pregnancy, 84.4% stated that they had no problems during pregnancy, 87.4% stated that they did not attend pregnancy school, 85.6% stated that they did not know the benefits of exercise during pregnancy and 89.6% stated that they did not exercise during pregnancy.

Table 3 shows the distribution of the mean PEAS scores of the participants. The participants' exercise attitude scale score was between 74-185 and the mean was 135.42 ± 25.90. When all skewness and kurtosis values were examined, they were between ± 1 and normally distributed.

Table 4 shows the comparison of the mean PEAS scores according to the descriptive characteristics of the participants. A significant difference was found between exercise attitude during pregnancy and all sub-dimension scores according to the education level of the participants (p < .05).

Table 5 shows the comparison of the mean scores of the exercise attitude scale in pregnant women according to the participants' exercise knowledge and behaviors during pregnancy. A significant difference was obtained between exercise attitude in pregnancy and all sub-dimension scores according to the participants' exercise status outside pregnancy, participation in pregnancy school, knowing the benefits of exercise in pregnancy and exercise in pregnancy (p < .05).

Discussion

In the present study, exercise attitudes of women of reproductive age

during pregnancy were evaluated. Studies have shown that exercise during pregnancy is safe and has a positive effect on women's physical and psychological health [2–7]. However, it is reported that exercise during pregnancy is not practiced sufficiently worldwide [12–14]. Attitude is an important factor in the acquisition, development and continuity of behaviors [15]. Determining women's exercise attitudes during pregnancy is important in terms of understanding the benefits of exercise, contraindications, precautions to be taken, and starting and maintaining exercise. In the present study, it was found that the participants had positive attitudes towards exercise during pregnancy, with a high mean exercise attitude scale score (135.42 ± 25.90). In the literature, there are studies showing that women have positive attitudes towards exercise during pregnancy [10,16,17]. Sonmez et al. (2023) found that the mean scale score of pregnant women was 130.42 ± 26.76 and they had a positive attitude towards exercise [10]. In the current study, it was determined that although the participants had a positive attitude, their knowledge and practice of the benefits of exercise during pregnancy were low. Similarly, there are studies in the literature indicating that women have positive attitudes towards exercise but do not have sufficient knowledge about exercise in antenatal care [18,19]. In addition, in the present study, a significant difference was found between the attitude towards exercise during pregnancy according to participation in pregnancy school, knowing the benefits of exercise during pregnancy and exercising during pregnancy. Lack of adequate knowledge is one of the important determinants of being away from exercise during pregnancy. Therefore, healthcare professionals should take responsibility to increase women's knowledge and awareness about exercise during pregnancy.

In the present study, it was observed that there was a significant difference between exercise attitude during pregnancy and all sub-dimension scores according to the level of education, which was actually a very expected finding. In other studies in the literature, it was reported that women with higher education level had higher exercise knowledge and attitudes during pregnancy [10,16,19,20]. In the study of Sönmez et al. (2023), it was determined that there was a significant relationship between the information benefit sub-dimension and total score of the GIT and the level of education and the level of education of the spouse [10]. Education is one of the leading behaviors that improve the health of individuals. It shows that empowerment of women through education has an important role in the development of exercise attitudes and behaviors during pregnancy. In the present study, a significant difference was found between the exercise attitude during pregnancy and all sub-dimension scores of the participants who exercised during and outside pregnancy. This finding is supported by other studies [10, 16]. In the study by Janakiraman et al. (2021), it was reported that participants who did not exercise before pregnancy had negative attitudes towards exercise during pregnancy [20]. It can be said that the findings obtained in the current study are compatible with the literature; since the level of education, exercising during and before pregnancy, attending a pregnancy school, and knowing the benefits of exercise during pregnancy will ensure a high awareness of the benefits of exercise, all these characteristics positively affect women's attitude towards exercise during pregnancy.

Conclusion

As a result of the study, it was seen that the participants had positive attitudes towards exercise during pregnancy. It was determined that the participants' level of education, exercising during and before pregnancy, attending a pregnancy school, and knowing the benefits of exercise during pregnancy were determinants of their attitudes towards exercise during pregnancy. Pregnancy is the most natural and unforgettable process in a woman's life and the role of exercise is very important in the healthy and comfortable passage of this process. It is necessary to eliminate the lack of information about exercise during pregnancy and to encourage women to exercise by health professionals. Women's

attitudes towards exercise should be determined and women should be encouraged to develop positive attitudes, knowledge and behaviors by organizing trainings and exercise programs starting from pre-pregnancy.

Ethics approval

Ethics approval was obtained from the Çukurova University Medical Faculty Ethics Committee (dated 1 September 2023, numbered 136/74).

Funding

The authors received no financial support for the research, authorship, and publication of this article.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

I am thankful to all women.

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