

ORIGINAL RESEARCH ARTICLE

Is there a relationship between pregnant women's sexual attitudes and body image?

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Abstract

This research was conducted to investigate the relationship between women's attitudes toward sexuality during pregnancy and their body image and to determine the predictors of pregnant women's sexual attitudes. The research was conducted with 515 pregnant women in Turkey. Study data were collected using a sociodemographic data form, the Attitude Scale toward Sexuality during Pregnancy, and the Body Image in Pregnancy Scale. As women's positive attitudes toward sexuality increased, their dissatisfaction with their body image decreased. It was determined that women with a positive body image during pregnancy had a less anxious attitude toward sexual intercourse, developed positive beliefs and values toward sexuality, and approved of sexuality during pregnancy. The factors that explained 15.8% of pregnant women's attitudes towards sexuality were body image, age, gestational week, satisfaction with sexuality during pregnancy, and knowledge of sexuality during pregnancy. It is recommended that body image, age, gestational week, satisfaction with sexuality in pregnancy and knowledge of sexuality in pregnancy should be taken into consideration in order to accurately determine the sexual attitudes of pregnant women in obstetric clinics. (*Afr J Reprod Health* 2024; 28 [11]:56-67).

Keywords: Pregnancy, Sexual attitudes, Body image

Résumé

Cette étude a été menée pour étudier la relation entre les attitudes des femmes à l'égard de la sexualité pendant la grossesse et leur image corporelle, et pour déterminer les facteurs prédictifs des attitudes des femmes enceintes à l'égard de la sexualité. L'étude a été menée auprès de 515 femmes enceintes en Turquie. Les données de l'étude ont été recueillies à l'aide d'un formulaire de données sociodémographiques, de l'échelle d'attitude envers la sexualité pendant la grossesse et de l'échelle d'image corporelle pendant la grossesse. Plus l'attitude positive des femmes à l'égard de la sexualité augmentait, plus leur insatisfaction à l'égard de leur image corporelle diminuait. Il a été déterminé que les femmes ayant une image corporelle positive pendant la grossesse avaient une attitude moins anxieuse à l'égard des rapports sexuels, développaient des croyances et des valeurs positives à l'égard de la sexualité et approuvaient la sexualité pendant la grossesse. Les facteurs expliquant 15,8 % des attitudes des femmes enceintes à l'égard de la sexualité sont l'image corporelle, l'âge, la semaine de gestation, la satisfaction à l'égard de la sexualité pendant la grossesse et la connaissance de la sexualité pendant la grossesse. Il est recommandé de prendre en compte l'image corporelle, l'âge, la semaine de gestation, la satisfaction à l'égard de la sexualité pendant la grossesse et la connaissance de la sexualité pendant la grossesse afin de déterminer avec précision les attitudes sexuelles des femmes enceintes dans les cliniques d'obstétrique. (*Afr J Reprod Health* 2024; 28 [11]: 56-67).

Mots-clés: Grossesse, Attitudes sexuelles, Image corporelle

Introduction

Body image is defined as the mental portrayal of the body regarding shape, size, and form¹. Physical and hormonal changes experienced during pregnancy may negatively affect body image². Negative influences on body image may also negatively affect couples' sexual attitudes³. It has been stated that women who are satisfied with their body image find themselves more attractive, initiate sexual

activity, and experience coitus more frequently⁴. Women with low body image avoid being seen naked in front of their partners and that this negatively affects the couple's sexual life^{5,6}. In a study, it was stated that women who were satisfied with their sexual lives before pregnancy had a positive sexual life during pregnancy but that those who were not interested in sexuality also avoided sexual intercourse during pregnancy⁷. However, being sexually active during pregnancy may cause

false beliefs and fears in some societies, which may affect pregnant women's attitudes toward sexuality^{4,8,9}.

Sexuality in pregnancy is influenced by many factors, including sexual activity, religious beliefs and cultural values¹⁰. The majority of sexual problems in pregnancy arise due to attitudes, taboos, lack of knowledge and fear¹¹. In the literature from Turkey, the belief that sexual intercourse during pregnancy will harm the baby¹², belief that sexual intercourse is not safe, fear of sexual intercourse, embarrassment and problems related to perceptual body image are considered among the causes of sexual problems during pregnancy^{13,14}. Therefore, sexual health counseling during pregnancy can improve outcomes. Sexual training during pregnancy positively affects attitudes toward sexuality and sexual response during pregnancy¹⁵.

In a systematic review on the examination of the impact of pregnancy and childbirth on sexual behavior, it was determined that there was a gradual decrease in vaginal intercourse from pre-pregnancy to the first trimester and the third trimester, there was no or little change in sexual behavior beyond vaginal intercourse, and that concerns about sexuality during pregnancy were common¹⁶. It was similarly found that the frequency of sexual behavior decreased during pregnancy, especially in the third trimester, sexual activity started 6-8 weeks after childbirth but continued completely after six months and that couples experienced more dyspareunia and less desire, orgasm, and satisfaction in the perinatal period¹⁷.

Pregnancy is a physically, hormonally, psychologically, and socioculturally multidimensional period when many changes occur in women. Changes experienced in the following trimesters, starting from the first weeks of pregnancy, may affect a woman's sexual life and body image. The aim of the research is to examine the relationship between women's attitudes toward sexuality during pregnancy and their body image and to determine the predictors of their sexual attitudes.

Methods

Type and setting of the study

A descriptive and correlational research design was used. The study was conducted in the

pregnancy outpatient clinics of two public hospitals in Tokat, Turkey.

Population and sample of the study

The population of the study consisted of pregnant women who were aged between 18 and 49, had healthy, spontaneous, and singleton pregnancies, and presented to the pregnancy outpatient clinics of the relevant hospitals for follow-up. G*Power 3.1.9.7 software was used to determine the sample size of the study¹⁸. In the study, which was planned to determine the relationship between pregnant women's attitudes toward sexuality and their body image, the sample size was calculated taking into account Cohen's (2013) medium effect size recommendation¹⁹. Accordingly, the sample size was determined as at least 421 subjects, based on a correlation of ($p H1$) = 0.30, a power value of ($1-\beta$) = 0.90²⁰, and a margin of error of (α) = 0.05. Considering 20% of attrition, the study was conducted with 515 pregnant women.

Data collection tools

Data were collected using a sociodemographic data form, the Attitudes Scale toward Sexuality during Pregnancy, and the Body Image in Pregnancy Scale.

Sociodemographic data form

This 20-item form about sociodemographic and obstetric characteristics of pregnant women was created by the researchers following a review of the literature^{5,21}.

The attitude scale toward sexuality during pregnancy (ASTSDP)

This scale was developed by Sezer and Erenel (2021) to determine the attitudes of pregnant women toward sexuality, and its validity and reliability were tested and accepted²². It is a five-point Likert-type scale and consists of 34 items and three sub-dimensions, namely "anxiety about sexual intercourse during pregnancy" (9 items), "beliefs and values about sexuality during pregnancy" (10 items), and "approval of sexuality during pregnancy" (15 items). Positive attitude items on the scale are scored using the following options: "strongly disagree" = 1, "disagree" = 2, "somewhat agree" = 3, "agree" = 4, and "completely agree" = 5. Negative attitude items are reverse-scored.

The minimum and maximum total scores on the ASTSDP are between 34 and 170. An increase in the total scale score indicates that attitudes toward sexuality during pregnancy are positive, and a decrease in the total score indicates the opposite. The attitudes of individuals who score ≥ 111.5 from the ASTSDP toward sexuality during pregnancy are interpreted as positive. Cronbach's alpha internal consistency coefficient for the total scale was found as 0.88²². In this study, the alpha value of the scale was calculated as 0.86.

Body image in pregnancy scale (BIPS)

This scale was developed by Watson *et al.* (2016) to determine the body image of pregnant women, and it was adapted to Turkish by Kakaşçı *et al.* (2022) and its validity and reliability were accepted^{23,24}. The scale has a five-point Likert structure and consists of 36 items and seven sub-dimensions: "preoccupation with physical appearance" (6 items: 1, 2, 3, 4, 35, and 36), "dissatisfaction with strength-related aspects of one's body" (7 items: 15, 16, 17, 18, 19, 20, and 21), "dissatisfaction with complexion" (2 items: 22 and 25), "sexual attractiveness" (3 items: 5, 8, and 9), "prioritization of appearance over function" (2 items: 10 and 14), "appearance-related behavioral avoidance" (2 items: 32 and 34), and "dissatisfaction with body parts" (2 items: 26 and 31). The scale has Likert-type items and items from 1 to 14 are scored between 1 = strongly disagree and 5 = strongly agree, items from 15 to 31 are scored between 1 = very satisfied and 5 = not satisfied at all, and items from 32 to 36 are scored between 1 = never engaged in the behavior and 5 = regularly engaged in the behavior. Items 7, 8, 10, 11, 12, 13, and 14 are reverse-scored. High total scores on the scale indicate that pregnant women have a negative body image. The mean BIPS total score was determined as 81.80 ± 20.30 ²⁴. Cronbach's alpha internal consistency coefficient was found as 0.90 for the total scale. In this study, the alpha value of the total scale was calculated as 0.91.

Data analysis

Descriptive analyses (frequency, percentage, mean, standard deviation, minimum, maximum values, etc.) were employed to evaluate the data. The normality of the data and the homogeneity of the variances were analyzed. Student's t-test was used to compare two normally distributed independent

groups, and One-way ANOVA was employed to compare three or more groups. The Bonferroni test was preferred as a post hoc test in groups of three or more when the variances were homogeneous. The Mann-Whitney U test was used in comparisons with two groups that did not show a normal distribution, and the Kruskal-Wallis test was used in groups of three or more. The relationship between scale scores and other quantitative variables was evaluated with the Pearson correlation test. Some independent quantitative variables affecting pregnant women's attitudes toward sexuality were examined with multiple linear regression analysis. In the study, $p < 0.05$ was accepted as the significance level.

Ethical consideration

Necessary ethical approval for the study was obtained from Tokat Gaziosmanpaşa University Social and Humanities Research Ethics Committee (session number: 15, decision number: 37, and date: 07/12/2022). Necessary institutional permission was obtained from the institutions where the research was conducted. The pregnant women participating in the study were informed and their written and verbal consent was obtained. In addition, written consent of the authors of the scales used in the study was obtained via e-mail.

Results

The comparison of some demographic characteristics of the women and their mean ASTSDP and BIPS scores are given in Table 1. No significant difference was found between the participants' demographic variables such as BMI and liking physical appearance and their mean ASTSDP score ($p > 0.05$), but there was a significant difference between age, level of education, level of income, and employment status variables and the mean ASTSDP score ($p < 0.05$). There were differences in all groups according to the education level. As the education level increased, the attitude toward sexuality scores increased, and similarly, as the income level increased, the scale scores increased in all groups. Additionally, working women and those who were aged ≥ 25 had higher attitudes toward sexuality scores $p < 0.05$ (Table 1). The BIPS score were higher in participants who had less income than their expenses compared to those whose income was equal to their expenses and those who did not like their appearance compared to those who did ($p < 0.05$) (Table 1).

Table 1: Comparison of Some Demographic Characteristics of the Women and Their Mean Scores on the ASTSDP and the BIPS (n=515)

Some demographic characteristics	Total n (%)	ASTSDP $\bar{X} \pm SD$	Analysis Test and P	BIPS $\bar{X} \pm SD$	Analysis Test and P
Age groups					
<25	185 (35,9)	113.77±16.97	t:-2.163	84.81±19.05	
≥25	130 (64,1)	116.91±15.07	p:0,037	84.68±20.55	t:0.068 p: 0.945
BMI					
Underweight	9 (1,7)	111.44±17.05	F:2.580	90.22±19.66	
Normal	168(32,6)	115.85±13.43	p:0.063	83.99±17.81	
Overweight	162(31,5)	116.44±17.17		83.15±21.39	F:1.151
Obese	176(34,2)	115.84±16.39		86.60±20.64	p:0.328
Education					
Primary	113 (25,8)	110.54±13.91	F:16.030	86.72±19.87	
education(8years) ^a	204 (39,6)	115.13±16.55	p:0.000	84.71±21.22	F:1.137
High school ^b	178(34,6)	120.44±15.05	Post hoc	83.26±18.61	p: 0.321
University and above ^c			test:c>b>a		
Income level					
Income<expenses ^a	83(16,1)	110.91±16.92	F:6.191	89.69±22.76	F:3.338
Income=expenses ^b	367(71,3)	116.18±15.54	p: 0.002	84.48±19.22	p: 0.036
Income>expenses ^c	65(12,6)	119.73±14.77	Post hoc	85.41±19.90	Post hoc test: a>b
			test:c>b>a		
Employment status					
Yes	140(27,2)	118.74±15.20		85.25±19.89	
No	375(72,8)	114.68±15.94	t: 2.603	84.53±20.07	t:0.360
			p: 0.010		p: 0.719
Liking physical appearance					
Yes	438(85)	116.31±15.42	U: -1.398	82.09±18.54	U:-6.467
No	77(15)	112.80±17.82	p:0.162	99.74±21.51	p:0.000

%; Percentage, F: One-Way ANOVA Test, t: Independent Samples Test, Post hoc test: Bonferroni Test, U: Mann-Whitney U Test

The ASTSDP scores were higher in participants who did not have children compared to those who had three or more children, in those who had one or two pregnancies compared to those who had more than two, and in those who had not given birth before compared to those who had given childbirth vaginally (p <0.05). The ASTSDP scores were higher in women who were satisfied with their sexual lives before pregnancy, were satisfied with their sexuality during pregnancy, and had knowledge about sexuality during pregnancy (p <0.05) (Table 2).

When the participants' body images during pregnancy and obstetric variables were examined, it was found that women who had five or more pregnancies had higher body image scores than those who had fewer (p <0.05). The body image scores of those who were dissatisfied with their sexual lives before pregnancy and those who were dissatisfied with sex during pregnancy were found to be higher (p <0.05) (Table 2).

The correlation of mean ASTSDP and BIPS scores and sub-dimensions is given in Table 3. There was a weak, negative correlation between women's mean ASTSDP and BIPS total scores (r=-0.261, p=0.000). There was a weak, negative, and significant relationship between mean ASTSDP total score and the subscales of the BIPS, namely "dissatisfaction with strength-related aspects of the body" (r=-0.111, p=0.012), "dissatisfaction with complexion" (r=-0.207, p=0.000), "sexual attractiveness" (r=-0.293, p=0.000), "prioritization of appearance over function" (r=-0.252, p=0.000), and "dissatisfaction with body parts" (r=-0.169, p=0.000) (Table 3). A weak, negative, and significant relationship was found between pregnant women's mean scores on the total BIPS and the sub-dimensions of the ASTSDP, namely "anxiety about sexual intercourse during pregnancy" (r=-0.282, p=0.000), "beliefs and values about sexuality during pregnancy" (r=-0.215, p=0.000), "approval of sexuality during pregnancy" (r=-0.132, p=0.003).

Table 2: The Comparison of Some Obstetric Characteristics and Mean Scores on the Attitudes Scale toward Sexuality During Pregnancy Scale (ASTSDP) and Body Image in Pregnancy Scale (BIPS) (n=515)

Some obstetric characteristics	Total n (%)	ASTSDP $\bar{X} \pm SD$	Analysis Test and P	BIPS $\bar{X} \pm SD$	Analysis Test and P
Number of pregnancies					
1-2 ^a	334(64,9)	117.78±16,13	F:9.364	83,74±18,91	
3-4 ^b	153(29,7)	112,96±14,27	p:0.000	85,01±21,23	F:4.134
≥5 ^c	28(5,4)	107,35±15,76	Post hoc test: a>b, a>c	94,96±23,45	p: 0,017 Post hoc test: c>b, c>a
Gestational week					
≥13	29(5,6)	112.13±17.51	KW:0.207	85.96±20.40	
14-26	76(14,8)	114.88±55.67	p:0.332	82.81±19.94	KW:0.610
27-41	410(79,6)	116.21±15.74		84.99±20.02	p: 0.727
Number of children					
None ^a	217(42,1)	117,33±16,72	F:3.650	84,44±19,86	
1-2 ^b	252(48,9)	115,40±15,36	p:0,027	83,89±19,51	F:2.284
≥3 ^c	46 (8,9)	110,56±12,76	Posthoc test: a>c	90,67±22,70	p: 0.103
Previous childbirth mode					
Vaginal birth ^a	154(29,9)	112,60±15,01	F:4.614	86,37±19,89	
Cesarean birth ^b	148(28,7)	116,66±14,96	p: 0,010	83,27±20,43	F:0.923
No previous childbirth ^c	213(41,4)	117,47±16,71	Posthoc test: c>a	84,55±19,80	p: 0,398
Satisfaction with sex before pregnancy					
Yes	492(95.5)	116.30±15.42	U:-3.038	84.23±19.68	U:-2.261
No	23 (4.5)	104.69±20.34	p:0.002	95.26±24.22	p:0.024
Satisfaction with sex during pregnancy					
Yes	339(65.8)	118.62±14.79	U:-5.548	81.00±19.18	U:-5.963
No	176(34.2)	110.31±16.39	p:0.000	91.89±19.66	p:0.000
Knowledge about sexuality during pregnancy					
Yes	239(46.4)	119.17±15.36	U:-4.398	83.03±18.77	U:-1.651
No	276(53.6)	112.85±15.67	p:0.000	86.19±20.93	p:0.099

Percentage, F: One-Way ANOVA Testi, t: Independent Samples Test, KW: Kruskal-Wallis Testi, U: Mann-Whitney U Test, Post hoc test: Bonferroni Test

It was determined that the "sexual attractiveness" and "prioritization of appearance over function" sub-dimensions of BIPS had a weak and negative relationship with the total and all sub-dimensions of the ASTSDP (p<0.05, p<0.001) (Table 3).

There was a negative relationship between the pregnant women's mean score on the total ASTSDP and the number of pregnancies (r=-0.179, p=0.000) and the number of children (r=-0.151, p=0.001), and a positive correlation with the gestational week (r=0.108, p=0.014). There was a weak, positive relationship between pregnant

women's mean score on the total BIPS and BMI (r=0.126, p=0.004) (Table 4).

When the results of the multiple linear regression analysis were examined, it was determined that the model created was statistically significant (R²= .173, AdjR²= .158, F=11.738, p<0.001). Of the variables included in the model, the total BIPS score, age, gestational age, satisfaction with sexuality during pregnancy, and knowledge about sexuality during pregnancy were determined to be statistically significant predictors of the ASTSDP score (p<0.05) (Table 5)

Table 3: The Correlation Between Mean Attitudes Scale towards Sexuality during Pregnancy (ASTSDP) and Body Image in Pregnancy Scale (BIPS) Scores and Sub-dimensions (n=515)

Scales and sub-dimensions	Test and P	Total ASTSDP	ASTSDP-Anxiety sub-dimension-1	ASTSDP-Beliefs sub-dimension-2	ASTSDP-Approval sub-dimension-3
Total BIPS	r p	-0.261** .000	-.282** .000	-.215** .000	-.132** .003
BIPS- Physical sub-dimension-1	r p	-.015 .726	-.062 .162	-.048 .274	.061 .164
BIPS-Dissatisfaction with streng sub-dimension-2	r p	-.111* .012	-.229** .000	-.031 .477	-.015 .739
BIPS- Dissatisfaction with complexion sub-dimension-3	r p	-.207** .000	-.224** .000	-.205** .000	-.075 .090
BIPS- Sexual attractiveness sub-dimension-4	r p	-.293** .000	-.284** .000	-.236** .000	-.180** .000
BIPS- Appearance sub-dimension-5	r p	-.252** .000	-.093* .035	-.257** .000	-.238** .000
BIPS- Avoidance sub-dimension-6	r p	-.051 .245	.047 .287	-.053 .234	-.104* .018
BIPS- Dissatisfaction with body parts sub-dimension-7	r p	-.169** .000	-.233** .000	-.137** .002	-.044 .322

***. Correlation is significant at the 0.01 level (2-tailed), * . Correlation is significant at the 0.05 level (2-tailed), r: Pearson Correlation Test*

Table 4: The Correlation Between Some Demographic Variables of Pregnant Women and Their Mean ASTSDP and BIPS Scores (n=515)

Demographic variables	Test and P	Total ASTSDP (115.78±15.83)	Total BIPS (84.73±20.01)
age/year (27.80±5.35)	r p	,016 ,717	,029 ,508
Number of pregnancies (2.17±1.17)	r p	-,179** ,000	,083 ,058
Number of children (1.04±0.25)	r p	-,151** ,001	,083 ,058
Gestational week (31.80±7.88)	r p	,108* ,014	-,014 ,760
BMI (28.05±5.13)	r p	,016 ,713	,126 ,004**

***. Correlation is significant at the 0.01 level (2-tailed), * . Correlation is significant at the 0.05 level (2-tailed), r: Pearson Correlation Test*

Discussion

In the study, it was determined that 85% of pregnant women liked their physical appearance and that pregnant women who did not like their appearance had a more negative body image than others. It was found that those who were dissatisfied with

their sexual lives before pregnancy and those who were dissatisfied with their sexuality during pregnancy had a negative body image (Table 2). Hutchinson and Cassidy (2022) reported that pregnant women were satisfied with their bodies and that their body image affected their physical appearance²⁵.

Table 5: Multiple Linear Regression Analysis Results of Variables Affecting Pregnant Women's Attitudes Toward Sexuality (n=515)

Some Variables (Constant)	β	T	p
Total BIPS	-.195	-4.602	.000
Age	.110	2.231	.026
BMI	.058	1.322	.187
Gestational week	.096	2.217	.027
Number of pregnancies	-.119	-1.403	.161
Number of children	-.073	-.840	.401
Pre-pregnancy sexual satisfaction	-.072	-1.699	.090
During-pregnancy sexual satisfaction	.157	3.622	.000
Knowledge about sex during pregnancy	.134	3.185	.002

Kaya and Atasever (2022) reported that pregnant women's perceptions of motherhood and body image were positive²⁶. A systematic review study on the evaluation of body image research in pregnant women indicated a growing concern about body image during pregnancy²⁷. Although the pregnancy process affects women's sexual lives, it can be said that the sexual lives of women who are dissatisfied with their body image are more negative during pregnancy.

In this research, it was found that while 95.5% of the women were satisfied with their sexual life before pregnancy, 65.8% were not satisfied with it during pregnancy and 53.6% did not have knowledge about sexuality during pregnancy. It was observed that sexual satisfaction decreased in more than half of women during pregnancy compared to the pre-pregnancy period. Battaglia *et al.* (2018) reported that the majority of women were concerned that the changes in their bodies during pregnancy might have a negative impact on sexuality²⁸. García-Duarte *et al.* (2023) stated that the quality of sexual life of women during pregnancy was low²⁹. Compared to the pre-pregnancy period, as pregnancy progresses, especially in the third trimester, many women experience a decrease in the frequency of, desire for, and satisfaction with sexual intercourse³⁰.

Sezer and Erenel (2021) reported that the scores of the participants in their study were between 34 and 170 from the ASTSDP and that the cut-off point of the scale was 111.5.²² In the present study, the mean ASTSDP total score was

115.78±15.83, and most pregnant women had positive attitudes toward sexuality. Güney and Bal (2023) reported that one in every two women had a positive attitude toward sexuality during pregnancy, and the mean ASTSDP total score was 112.36±14.21.³¹ Similarly, it was reported in another study that the majority of pregnant women had positive attitudes toward sexuality.³² However, some studies indicated that sexual desire decreased during pregnancy compared to the pre-pregnancy period^{30,33,34} and that sexual functions and satisfaction with sexuality decreased.⁵ This is often explained as dyspareunia experienced during sex.^{35,36} Some studies showed that the majority of pregnant women and their partners had a fear of harming the fetus and, therefore, moved away from sexuality and exhibited negative attitudes toward sexuality.^{37,38,39,40} The differences between pregnant women's attitudes toward sexuality in the literature can be explained by the presence of multidimensional variables affecting the process.

It is known that pre-pregnancy sexuality plays a critical role in maintaining it during pregnancy and the postpartum period.⁴¹ In our research, it was determined that women who were satisfied with their sexual lives before and during pregnancy and had knowledge about sexuality during pregnancy had higher attitude scores toward sexuality and exhibited positive attitudes (Table 2). In a study parallel to these results, the attitude toward sexuality scores of pregnant women who knew about sexuality, had sexual intercourse twice a week before pregnancy, were satisfied with sexual

intercourse before pregnancy, and did not stay away from sexual intercourse during pregnancy were found to be higher.³² Güney and Bal (2023) reported that pregnant women whose sexual intercourse frequency and sexual desire decreased had lower attitude scores toward sexuality, while those who did not find sexual intercourse safe and could not have sexual intercourse due to complaints arising from pregnancy had higher anxiety. However, those who enjoyed sexual intercourse and had a good quality of sexual life and whose partners had no change in their sexual desire had higher attitude scores toward sexuality.³¹ Our research results are similar to the literature in terms of women's perceptions of sexuality and their attitudes toward sexuality before and during pregnancy.

In this research, the comparison of the women's sexual attitudes according to some characteristics showed that as the gestational age, number of pregnancies, and number of children increased, their positive attitudes toward sexuality decreased. However, no significant relationship was found between pregnant women's age and BMI and their attitudes toward sexuality. Contrary to our research findings, Pamuk (2021) found that those who had two pregnancies, had a living child, were in the second trimester of pregnancy, became pregnant naturally, had a planned pregnancy, and were aged >26 years at first pregnancy had higher attitude toward sexuality during pregnancy scores and that the mean ASTSDP score differences between the groups were statistically significant according to the trimester of pregnancy ($p = 0.008$), whether the pregnancy was planned ($p = 0.002$), and the age at first pregnancy ($p = 0.000$).³² These differences were expected findings. Apart from some demographic and obstetric characteristics, many different independent variables, such as partner/spouse relationships, lifestyles, and cultural characteristics, can affect sexual attitudes during pregnancy.

Physical changes experienced during pregnancy, especially the growth of the breasts, hips, and abdomen, weight gain, and skin changes, cause women to focus their attention on their bodies.⁴² Kakaşçı *et al.* (2022) reported the mean BIPS total score as 81.80 ± 20.30 , which ranged from 42 to 143.²⁴ Similarly, the mean total scale score was found as 84.73 ± 20.01 in this study, and the body image scores of pregnant women were at a medium level. Gür and Pasinoğlu (2020), too, stated

that pregnant women's mean body image scale score was at a medium level.²¹ This result is similar to that of our study. However, Roomruangwong *et al.* (2017) found that pregnant women had high mean body image scale scores and that most participants were not satisfied with their body image during pregnancy and the postpartum period.⁴³ Some studies indicated that the mean body image scale scores of pregnant women were high.^{5,44} Contrary to this study, some studies showed that pregnant women had a negative body image as the pregnancy progressed (especially in the third trimester).^{1,45} The rate of perinatal depression in women who experience dissatisfaction with their body image during pregnancy increases three to four times.^{46,47,48} Compared to studies reporting high body image scores during pregnancy, the moderate level of body image scores in this study indicates that women's thoughts and beliefs about and satisfaction with their body image are more positive.

In our research, it was found that pregnant women with high BMI had a more negative body image. However, there was no significant relationship between the variables of age, number of pregnancies, number of children, and gestational week and the body image of pregnant women. Gür and Pasinlioğlu (2020) stated that as the number of pregnancies, the number of live births, and the number of living children of pregnant women increased, the total body image scale score decreased significantly, and their body image perception was negatively affected.²¹ Senobari *et al.* (2019), on the other hand, did not detect a significant relationship between BMI and body image and sexual functions of pregnant women ($p = 0.44$ and $p = 0.837$, respectively).⁴⁹ A systematic review study on body image during pregnancy showed that women's perceptions of their body image during pregnancy varied. Pregnancy-related changes caused women to re-question themselves and move from their identity as sexually attractive women to their identity as a mother.⁵⁰ Different results were reported in our research and the literature. It is thought that this may stem from many different causes that may affect body image, personal perceptions during pregnancy, and various characteristics of the studied populations.

According to our research results, as women's positive attitudes toward sexuality increased, their dissatisfaction with their body image decreased. In addition, pregnant women who

perceived themselves more positively in terms of sexual attractiveness and appearance regarding body image had more positive attitudes toward sexuality.

As women's attitudes toward sexuality scores increased, their body image scores decreased. A decrease in body image scores is an indication that pregnant women have a more positive body image. For this reason, women with a positive body image during pregnancy have more positive attitudes toward sexuality. There are studies on attitudes toward sexuality during pregnancy.^{32,37,40} However, there is no research on the relationship between sexual attitudes and body image during pregnancy in the literature. In our research, it was determined that those who had a positive body image during pregnancy exhibited less anxious attitudes toward sexual intercourse, developed positive beliefs and values toward sexuality, and approved of sexuality during pregnancy. Pregnant woman's attitudes toward sexuality expresses her thoughts, beliefs, and evaluations regarding sexuality in this period. It is thought that pregnant women with a positive body image exhibiting a positive attitude toward sexuality will make a significant contribution to the family system by strengthening partner/spouse relationships.

In our research, the results of the multiple linear regression analysis of variables affecting pregnant women's attitudes toward sexuality were presented. In this study, the factors that explained 15.8% of pregnant women's attitudes toward sexuality were body image, age, week of gestation, satisfaction with sexuality during pregnancy, and knowledge of sexuality during pregnancy. However, BMI, number of pregnancies, number of children, and satisfaction with sexuality before pregnancy did not affect attitudes toward sexuality. According to our research results, body image, age, gestational week, satisfaction with sexuality during pregnancy, and knowledge of sexuality during pregnancy variables were significant predictors of pregnant women's attitudes toward sexuality.

There are studies in the literature on pregnant women's attitudes toward sexuality and comparing sexual attitudes according to demographic and obstetric characteristics.^{31,41,51,52} However, there is no research on the in-depth examination of the variables affecting pregnant women's attitudes toward sexuality and the extent of the impact that these variables have.

Conclusion

Pregnant women's attitudes toward sexuality were positive and their body image perceptions were at a moderate level. Women who were satisfied with their sexual lives before and during pregnancy and had knowledge about sexuality during pregnancy had positive attitudes toward it. As women's positive attitudes toward sexuality increased, their dissatisfaction with their body image decreased. Women with a positive body image during pregnancy had more positive attitudes toward sexuality. In addition, pregnant women who perceived themselves more positively in terms of sexual attractiveness and appearance regarding body image also had more positive attitudes toward sexuality. It was determined that those who had a positive body image during pregnancy exhibited less anxious attitudes toward sexual intercourse, developed positive beliefs and values toward sexuality, and approved of sexuality during pregnancy. The variables of body image, age, week of gestation, satisfaction with sexuality during pregnancy, and knowledge of sexuality during pregnancy were found as significant predictors of pregnant women's attitudes toward sexuality. It is recommended that body image, age, gestational week, satisfaction with sexuality in pregnancy and knowledge of sexuality in pregnancy should be taken into consideration in order to accurately determine the sexual attitudes of pregnant women in obstetric clinics.

Strengths and limitation

This study includes several limitations. The fact that this study was conducted in only one province of Turkey limits the generalization of the results to Turkey. The study included pregnant women who were aged between 18 and 49, had a healthy, spontaneous, and singleton pregnancy, were at least a primary school graduate, spoke Turkish, and were voluntary to participate in the study. Pregnancy experiences are different for women who have a chronic disease, are adolescents, have a risky pregnancy, or have a pregnancy after infertility treatment. For this reason, women with these characteristics were excluded from the research, considering that they might affect the research findings. The research can be conducted on larger samples. Sexual attitudes and body images of pregnant women with different characteristics can

be investigated in the future. Additionally, qualitative and mixed research can be conducted on the sexual attitudes and body image of pregnant women.

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Conflict of interest

The authors declared that they had no competing interests in this research.

Contribution of authors

Dilek Öcalan: Conceptualization, methodology, formal analysis, writing – original draft, writing - review & editing; Serpil Toker: Data curation, writing-original draft preparation, software; Emine Kılıç Doğan: Visualization, investigation, validation; Özgür Alparslan: Supervision, writing - review & editing. All authors mentioned in the article approved the manuscript.

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