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Comparison of Sexual Function Changes in High-Risk and Normal Pregnancies

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Abstract

Objective: The evidence on the sexual function in high-risk pregnancies is scarce. Sexual function generally decreases during pregnancy, although it decreases more in high-risk pregnancies. Therefore, we aimed to evaluate the sexual function changes in high-risk pregnancies compared to normal pregnancies.

Methods: This observational case–control study included 200 pregnancies with high-risk and normal pregnancies, each consisting of 100 cases. Demographic and obstetric data were collected, and participants completed the Female Sexual Function Index.

Results: Body mass index was found to be 28.6 ± 5.7 kg/m^2 in high-risk and 26.3 ± 3.9 kg/m^2 in normal pregnancies (P = .002). Gestational age was 28.1 ± 5.8 in high-risk and 27.3 ± 5.4 in normal pregnancies (P < .34). Education levels were found to be higher in high-risk pregnancies compared to normal pregnancies (P < .001). Previous cesarean delivery rates were higher in normal pregnancies compared to high-risk pregnancies (21% vs. 6%, P < .001). Most frequent comorbidities in the high-risk group were gestational diabetes mellitus (n = 38), preeclampsia (n = 21), intrauterine growth restriction (n = 13), and cholestasis (n = 8). The Female Sexual Function Index assessments revealed that the high-risk group had significantly higher rates of sexual dysfunction (80% vs. 68%, P < .001).

Conclusion: The sexual function decreases during pregnancy; however, women with high-risk pregnancies have significantly higher rates of sexual dysfunction as compared with others having normal pregnancies. Therefore, Female Sexual Function Index, which is inexpensive and can be easily applied to high-risk pregnancies, may be important for timely interventions to improve the quality of life of these women in terms of sexual function.

Keywords: Sexual function, sexual dysfunction, high-risk pregnancy, Female Sexual Function Index, sex counseling

Introduction

Sexual dysfunction is a multifaceted and severe situation that includes combination of sexual interest or arousal disorder, orgasmic disorder, genito-pelvic pain, and penetration disorder, as defined in the Diagnostic and Statistical Manual of Mental Disorders.[1] It is a prevalent problem for women of reproductive age, reported about 41% worldwide, making it a significant health problem.[2] It can be associated with various etiologies such as physical and emotional well-being, psychological issues regarding self-esteem, and marriage age.[3] Pregnancy is one of the vulnerable periods that women are prone to physical, psychological, hormonal, and social changes, which all possess a risk to their sexuality and may end up with sexual dysfunction.[4]

Previous studies reported that more than 80% of couples remain sexually active during pregnancy but with lessened coital frequency and sexual desire through the third trimester.[5] Despite these relatively high rates, sexual function problems are frequent among pregnant women. The most common factors associated with sexual dysfunction during pregnancy are changes in the female body that causes physical discomfort, concerns about harming the fetus during coitus, dyspareunia, and emotional or psychological issues regarding loss of attractivity.[6]

A high-risk pregnancy is broadly defined as the presence of conditions threatening the health or life of the mother or fetus. Once a woman is diagnosed with a high-risk pregnancy, it affects multiple domains of her life, inevitably including her sex life. Although the methodological qualities are debatable, the literature on the sexual dysfunction in normal pregnancies has many published studies[4,5,7]; however, the sexual dysfunction changes in high-risk pregnancies are less studied and without satisfactory data. Based on this background, the present study aimed to evaluate the changes in sexual dysfunction in high-risk pregnancies as compared with normal pregnancies using the Female Sexual Function Index (FSFI).

Methods

Patients

This observational, case–control study was conducted in the Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, University of Health Sciences, Başaksehir City Hospital between April and June 2021. Women who followed up for high-risk pregnancy were invited to participate and women with high-risk pregnancy in the second trimester (14th to 28th

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gestational weeks), between 20 and 40 years old, and followed up at our obstetrics department with a diagnosis of gestational diabetes mellitus, preeclampsia, intrauterine growth restriction, cholestasis, diabetes mellitus (type 1 or type 2), and fetal anomaly were included. The pregnant women admitted for routine second-trimester ultrasonography assessment but with no risk for pregnancy formed the control group. Pregnant women younger than 20 or older than 40 years of age, gestation in the first or third trimester, presence of psychiatric or chronic disorders like rheumatic or heart diseases, a diagnosis of sexual dysfunction of the spouse, and pregnant women refusing sexual intercourse during pregnancy were excluded. The study was approved by the Ethics Committee of Başakşehir City Hospital (approval number: KAEK/2021/.01.24, date: January 24, 2021). All women in the study provided informed consent for their participation.

Data Collection

Participants completed a study questionnaire prepared by the authors, which included data about age, education, monthly income, body mass index (BMI), smoking status, comorbid diseases, previous pregnancies, gravida, para, number of live births, gestational age, and any gestational complications (intrauterine growth restriction, preeclampsia, gestational diabetes mellitus, and pregnancy-associated cholestasis, type 1 and type 2 diabetes mellitus, and fetal anomalies) if present. Additionally, the sexual dysfunction of pregnant women was assessed using the FSFI, and the outcomes were compared between the high-risk and normal pregnancies.

The Female Sexual Function Index

The FSFI was first developed and validated by Rosen et al[8] as a self-completed instrument to evaluate the dimensions of sexual dysfunction of women in clinical or epidemiological studies. The scale assesses sexual dysfunction by 19 items and provides information on 6 domains as desire, arousal, lubrication, orgasm, satisfaction, and dyspareunia. Domain scores were calculated by adding the scores of each item in the domain and multiplying the sum with the domain factor. A domain score of zero means no sexual activity in the past month. The total score is calculated by adding all domain scores, and scores below 26 were considered as sexual dysfunction. The FSFI was adapted and validated into Turkish by Aygin and Eti Aslan.[9]

Patient and Public Involvement

There is no patient and public involvement in this research.

Statistical Analysis

Descriptive statistics were expressed as mean and standard deviation for continuous variables and frequency and percentage for categorical variables. Continuous data were compared using the Mann–Whitney *U* test, and the chi-square test was used to compare the categorical data between independent groups. Statistical significance was considered as a *P*-value lower than .05. Statistical analyses were performed using the IBM Statistical Package for the Social Sciences Statistics version 23 (IBM Inc., Armonk, NY, USA).

Results

Two hundred pregnant women (100 in each study group) were included. The basal demographic characteristics of patients are presented in Table 1. The mean ages of the women were 28.1 ± 5.8 years and 27.3 ± 5.4 years ($P = .34$) in the high-risk pregnancy and the control groups, respectively. The BMI in the high-risk group was significantly higher than in the controls (28.6 ± 5.7 vs. 26.3 ± 3.9 kg/m^2, $P = .002$). The smoking rates were similar between groups ($P = .58$), 8% in high-risk pregnancies and 6% in controls. About 45% and 44% of women in each group were nulliparous ($P = .89$) and the gravida ($P = .12$) and parity ($P = .56$) rates were similar in the study groups. The gestational age ($P < .001$) and education levels ($P < .001$) were higher in the high-risk pregnancy group than in the controls. All patients in both groups were married, and 6% of the high-risk group and 21% of controls had a history of previous cesarean delivery ($P < .001$).

The most frequent diagnoses were gestational diabetes mellitus (n = 38), followed by preeclampsia (n = 21), and intrauterine growth restriction (n = 13). Remaining diagnoses with lesser frequencies are presented in Table 2.

The FSFI assessments in the study groups are presented in Table 3. The scores in desire ($P < .001$), arousal ($P < .001$), lubrication ($P = .001$), orgasm ($P = .004$), and satisfaction ($P = .002$) domains were significantly high in the control group; however, the score of dyspareunia domain was similar in the 2 groups ($P = .24$). The total FSFI score was 16.9 ± 9.2 in the high-risk group and 21.1 ± 8.2 in the control group ($P = .001$).

The comparison of sexual dysfunction rates between the study groups revealed that 80% of women with a high-risk pregnancy and 68% of women with a normal pregnancy had sexual dysfunction, which was significantly high in the high-risk group ($P < 0.001$) (Table 4).

Discussion

Sexuality is an important determinant of the quality of life.[10] However, it is not independent of other physical, psychological, or emotional well-being domains and may be affected by various factors, including pregnancies. In general, the sexual dysfunction in pregnancies can be considered an under-investigated topic, particularly compared to the number of studies in non-pregnant women, but the sexual dysfunction in high-risk pregnancies is even more neglected.[11] Therefore, this study aimed to shed light on the sexual dysfunction of women with high-risk pregnancy using a validated scale, namely FSFI. The primary outcome of this study is the decreased sexual dysfunction in high-risk pregnancies compared to normal pregnancies. This decrease was an anticipated outcome when the evidence in the literature is considered but needs further evaluation to identify its determinants.

Couples continue the sexual activities during pregnancy but less frequently, which was reported to vary between 66% and 94%.[12-15] These rates are anticipated to be lower in high-risk pregnancies, either due to health concerns or recommendations by an obstetrician. The worries of couples to reduce or completely stop their sexual activities are primarily associated with beware of further harm to the fetus or mother.[7] However, numerous studies have reported that intercourse during pregnancy is safe.[16] Physicians' attitudes when dealing with women with high-risk pregnancy is another critical issue to be evaluated separately. When a woman is diagnosed with a high-risk pregnancy, the primary point of interest becomes the health of the fetus and mother, and conversations and communications between the patient and obstetrician almost solely focus on these issues. The most advised sexual activity recommendation to couples is pelvic rest, which does not explain the other components of intercourse like arousal, lubrication, or orgasm.[16] Thus, unmet information needs in high-risk pregnancy yield sexual dysfunction, unfortunately. However, unless there is no unexplained vaginal bleeding, premature rupture of the membrane, cervical insufficiency, placenta previa, a history of preterm birth in a previous pregnancy, and multiple pregnancy, sexual intercourse is safe at any time during pregnancy. Moreover, sexual

Table 1. Demographic and Clinical Obstetric Characteristics of Patients

	High-Risk Pregnancies	Controls	*P*
Age, years	28.1 ± 5.8	27.3 ± 5.4	.34
BMI, kg/m^2	28.6 ± 5.7	26.3 ± 3.9	.002
Smoking	8 (8)	6 (6)	.58
Gravida	2 (1-13)	2 (1-6)	.12
Parity	1 (0-4)	1 (0-3)	.56
Nulliparity	45 (45)	44 (44)	.89
Gestational age	25.8 ± 2.4	22.1 ± 3.0	<.001
Educational level			
Primary	19 (19)	51 (51)	
High school	53 (53)	26 (26)	<.001
University	28 (28)	23 (23)	
Marital status			-
Married	100 (100)	100 (100)	
Previous cesarean delivery	6 (6%)	21 (21%)	<.001

Data are presented as mean ± standard deviation or number (%), where appropriate.
BMI, body mass index.

intercourse might have ameliorating effects on the issues women with high-risk pregnancies frequently face such as sleeping problems, frequent urination, muscle and joint pain, anxiety, stress, and even depression through the secretion of hormones following the orgasm such as prolactin, oxytocin, and endorphins.[17-19]

The most frequent disorders causing high-risk pregnancy were gestational diabetes mellitus, intrauterine growth restriction, and preeclampsia in our study. Previous studies on the effect of gestational diabetes mellitus on sexuality during pregnancy reported that progression of this disorder and switching from a normal pregnancy to high-risk pregnancy could result in sexual dysfunction.[20] Moreover, the treatment course of gestational diabetes mellitus, sudden changes in lifestyle, anxiety, and fear of uncertainty about the fetus all possess a significant emotional and psychological burden on the mother, and sexual dysfunction is generally ignored,

Table 2. Distribution of Comorbidities in the High-Risk Pregnancy Group

Comorbidities	n
Gestational diabetes mellitus	38
Preeclampsia	21
Intrauterine growth restriction	13
Cholestasis	8
Type 2 diabetes mellitus	5
Type 1 diabetes mellitus	3
Fetal anomaly	12

Table 3. Results of the Female Sexual Function Index Assessments in the High-Risk Pregnancies and Controls

FSFI Items	High-Risk Pregnancy, n = 100	Controls, n = 100	*P*
Desire	2.8 ± 1.1	3.4 ± 1.1	<.001
Arousal	2.3 ± 1.6	3.1 ± 1.5	<.001
Lubrication	2.8 ± 2.1	3.7 ± 1.9	.001
Orgasm	2.7 ± 2.0	3.5 ± 1.8	.004
Satisfaction	3.6 ± 1.7	4.3 ± 1.5	.002
Dyspareunia	2.7 ± 2.2	3.0 ± 1.8	.24
FSFI score	16.9 ± 9.2	21.1 ± 8.2	.001

Data are presented as mean ± standard deviation.
FSFI, Female Sexual Function Index.

among other relatively more severe concerns.[21] Other than gestational diabetes mellitus, the literature search returned no results on the effects of sexual intercourse when an intrauterine growth restriction or preeclampsia is present. However, intrauterine growth restriction/preeclampsia increases the preterm birth risk, which indirectly and negatively affects sexual dysfunction. Especially if there is a history of preterm birth, couples tend to stay abstinent from intercourse, which is not valid for all instances. However, if preterm labor is induced following intercourse, couples may be recommended to abstain from penetrance after arrested preterm labor until term labor to avoid further complications.[16] Close communication with an obstetrician may be the essential factor in maintaining a healthy sex life during a high-risk pregnancy. Unfortunately, conversations about sexual issues with an obstetrician or gynecologist are generally based on pregnancy failures or assisted pregnancies. The talks on sexual functions during normal pregnancies or high-risk pregnancies are generally neglected during routine follow-up visits or only limited to superficial and general questions.[7,16] At least, physicians should administer validated scales, like the FSFI that we used in this study, to longitudinally follow-up the sexual well-being of their patients in clinical settings and should intervene or communicate with the couples to provide the most accurate information from the very first-hand.

The limitation of this study is the limited number of patients and it contained few types of diseases. Therefore, our study result is not valid for the general population as the power of the study is low. However, since it is a pioneering study, further studies are needed for a more precise inference.

In conclusion, decreased sexual dysfunction or complete sexual dysfunction during high-risk pregnancy is a common problem experienced by many pregnant women worldwide. The etiologies

Table 4. Presence of Sexual Dysfunction in the Study Groups

	High-Risk Pregnancies, n = 100	Controls, n = 100	*P*
Sexual dysfunction*, n (%)			
Present	80 (80)	68 (68)	<.001
Absent	20 (20)	32 (32)	

*Female Sexual Function Index scores <26 were considered as sexual dysfunction.

of sexual dysfunction may vary, but the concerns that cause these deteriorations may be unnecessary in most cases. This study showed that sexual dysfunction significantly increases in high-risk pregnancy compared to normal pregnancies. Therefore, we recommend evaluating the high-risk pregnancies using validated scales like FSFI, which is an inexpensive and easily applicable tool for those pregnancies, to intervene any unnecessary concerns or to prevent couples from further pregnancy complications.

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