

Original Article

The relationship between the Wealth Index and Pregnancy-Related Anxiety in each trimester of pregnancy and their effect on sexual dysfunction

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Abstract:

Introduction: Sexual relationships change due to the physical and psychological changes occurring during pregnancy. Physical, emotional and economic anxieties in pregnancy often affect the couple's marital relationship and their sexual responses to each other and can thus adversely affect their overall relationship and the family's mental health. The present comparative study was conducted to examine the relationship between the wealth index and pregnancy-related anxiety in each trimester of pregnancy and their effect on sexual dysfunction.

Methods: This cross-sectional study was conducted on 450 pregnant Iranian women in 2016. Data were collected using the Female Sexual Function Index (FSFI), the Pregnancy-Related Anxiety Questionnaire, the Wealth Index and a demographic questionnaire. Data were analyzed in SPSS-23. **Results:** As gestational age increased, sexual dysfunction increased too. The highest degree of sexual dysfunction was reported in the first and third trimesters. Sexual arousal disorders were reported in all the trimesters and dyspareunia was reported in the second trimester. The greatest pregnancy concerns were reported in the third trimester. As the age of the subjects and their spouse increased, the prevalence of sexual dysfunction also increased and the level of pregnancy-related concerns decreased. A higher wealth index was associated with a reduced pregnancy-related anxiety. Sexual dysfunction was less observed in those with higher levels of education ($P < 0.05$). **Discussion and Conclusion:** The wealth index can affect sexual performance through the mediating effects of pregnancy-related anxiety.

Keywords: Pregnancy-related anxiety; sexual dysfunction; the Wealth Index; trimester of pregnancy

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Introduction

Sexual function is considered part of women's health and is an essential component of life and a multidimensional phenomenon that is affected by many psychological and biological factors^{1, 2}. Normal sexual functioning is integral to healthy mental functioning³. Sexual dysfunction is defined as a chain of psychosexual disorders that manifest as sexual desire disorder, sexual arousal disorder, orgasmic dysfunction and dyspareunia⁴⁻⁶. The disorder can develop in any individual or after a period of normal functioning and can be generalized or localized and general or specific⁷. Female Sexual Dysfunction (FSD) is one of the most common problems that affects approximately 40-45% of women⁸. Implementing the FSFI has shown that FSD affects 31.5% of Iranian women, with orgasmic disorder, inhibited sexual desire, sexual arousal disorder and dyspareunia being the most common sexual dysfunction problems, in respective order⁹. Several risk factors are associated with female sexual dysfunction and sexual satisfaction, including mental health, partner's sexual functioning, personality factors, duration of acquaintance with the sexual partner, infertility, medication therapy, chronic diseases, pelvic surgeries, cancer, pregnancy and the postpartum period¹⁰.

Factors such as the socioeconomic status of the couple and their families and their family relationships can cause marital conflicts and reduce marital satisfaction. Economic pressures construe one of the factors that can cause conflict among couples and affect their sexual activity^{11, 12}. According to Amido et al(2010), economic status plays a major role in the incidence of sexual dysfunction, which is the reason why sexual dysfunction is more likely in people with lower incomes¹³.

Sexual feelings fluctuate throughout life, such as in the transition from pregnancy to the postpartum period. Pregnancy is associated with changes in sexual function that make up a psychosocial crisis. Sexual functioning often decreases during pregnancy and remains low in many women during the postpartum period too¹⁴. Pregnancy is associated with specific tensions and concerns. Pregnant women worry about managing and adapting to the dramatic physical signs of pregnancy, changes in appearance, changes in personal relationships, the

stages of labor and delivery, newborn's health and potential medical complications and this greater source of stress makes women more prone to stress in life than men¹⁵. Any type of stress, emotional disturbance or lack of knowledge about physiology and sexual function can have a negative effect on sexual functioning¹⁶. Today, stressful life events such as marital conflicts, occupational problems and worries about the difficulties of pregnancy are known to contribute to the mental changes experienced by pregnant women¹⁷. Abd Aziz was showed that Stressful circumstances may alter the normal cortisol mechanisms resulting in marked increases in plasma levels¹⁸.

Since pregnancy involves major changes in both physical and mental health, just as is the case in any other crisis in life, improving mothers' health depends on understanding these changes and their interactions, which create different clinical taboos in different individuals, and despite the advances in the management of the physical problems of pregnancy, mental health problems remain a major issue in the health of pregnant women¹⁹. Given the important role of pregnancy-related anxiety as one of the factors affecting sexual functioning, the present comparative study was conducted to examine the relationship between the wealth index and pregnancy-related anxiety in each trimester of pregnancy and their effect on sexual dysfunction.

Methods

This cross-sectional study was conducted in 2016 on 450 Iranian pregnant women admitted to select hospitals for receiving prenatal care services. The inclusion criteria consisted of age 15-45, reading and writing literacy, Iranian nationality, the pregnancy being wanted, the pregnancy not being high-risk according to obstetric definitions, no medical restrictions on intercourse during pregnancy, living with the partner, no history of alcohol consumption, smoking or use of medications affecting sexual desire (such as antidepressants and blood pressure medications) and no history of known physical or mental diseases.

Measures

Data were collected using a demographic form, a wealth index, the Female Sexual Function Index (FSFI) and the Pregnancy-Related Anxiety

Table 1. The mean and standard deviation of participants’ demographic characteristics in the study

Variable	Mean	SD
Age	27.6	5.41
Spouse’s age	32.26	5.71
Education(per Year)	10.25	3.91
Husband’s education	10.13	3.32
Wealth Index	3.95	1.02

Table 2. Pregnancy-related anxiety by trimester

Pregnancy-related anxiety	First trimester	Second trimester	Third trimester	Total
mean	26.71	25.83	28.55	27.08
Standard deviation	19	15.32	19.15	17.95

The results also indicate that sexual dysfunction increases with gestational age (Table 3).

Table 3. The prevalence of sexual dysfunction by trimester

sexual dysfunction	First trimester	Second trimester	Third trimester
Mean	22.74	23.18	19.94
Standard deviation	11	11.20	10.37

The sexual dysfunction analysis in the trimesters revealed the highest sexual dysfunction in the domain of arousal in the first and third trimesters, in the domain of pain in the second trimester and in the domain of arousal throughout the entire period of pregnancy (Table 4).

Table 4. The prevalence of sexual dysfunction in terms of each domain by trimester

Frequency		First Trimester		Second Trimester		Third Trimester		Total	
		Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency
Satis-Faction	Yes	37	25.5	31	21.4	37	23.1	105	23.3
	No	108	74.5	114	78.6	123	76.9	345	76.7
Pain	Yes	63	43.4	64	44.1	83	51.9	210	46.7
	No	82	56.6	81	55.9	77	48.1	240	53.3
Orgasm	Yes	61	42.1	60	41.4	81	50.6	202	44.9
	No	84	57.9	85	58.6	79	49.4	248	55.1
Desire	Yes	59	40.7	50	34.5	81	50.6	190	42.2
	No	86	59.3	95	65.5	79	49.4	260	57.8
Arousal	Yes	69	47.6	63	43.4	91	56.9	223	49.6
	No	76	52.4	82	56.6	69	43.1	227	50.4
Lubri-Cation	Yes	51	35.2	51	35.2	72	45	174	38.7
	No	94	64.8	94	64.8	88	55	276	61.3

Questionnaire.

The demographic form:

This form inquired about personal and obstetric information such as age, number of children, education, duration of marriage, place of residence, etc.

1. The wealth index:

This researcher-made questionnaire examined 12 economic variables (owning a vacuum cleaner, a separate kitchen, a computer, a washing machine, a bathroom, a freezer, a dishwasher, a private car not used as a tool for work or money-making, a cellphone, a color TV, different video players and a landline telephone). The wealth index was calculated as a percentage and was classified into five categories, including poorest (0-20), poor (21-40), average (41-60), rich (61-80) and richest (81-100),^{20, 21}.

2. The Pregnancy-Related Anxiety Questionnaire:

This questionnaire was a combination of the ten-item questionnaire developed in 2004 by Huizink et al²²(the short form of Van den Bergh’s 55-item questionnaire) and some personal-family factors originally listed in Van den Berg’s questionnaire. The questionnaire consisted of 25 items in six subscales, including maternal health (six items), infant health (five items), childbirth and the experience of motherhood (four items), maternal-fetal attachment (two items), personal/family factors (five items) and personal/career factors (three items). The items were scored based on a 5-point Likert scale (never =0; rarely =1; sometimes =2; most often =3; and always =4) and the total score was 0 to 100. Navidpour et al. confirmed the reliability and validity of this tool in 2015²³.

4- The Female Sexual Function Index (FSFI):

This 19-item questionnaire evaluated female sexual function in six domains, including desire (items 1-2), arousal (items 3-6), lubrication (items 7-10), orgasm (items 11-13), satisfaction (items 14-16) and pain (items 17-19). Each item was scored from 1 to 5 in the desire domain and from 0 to 5 in the arousal, lubrication, orgasm, satisfaction and pain domains. The score of each domain was calculated by summing the scores of the items and multiplying the value by the coefficient of the domain. The

Table 5. The correlation between sexual dysfunction and the other independent variables in each trimester

	Age	Spouse's Age	Education	Husband's Education	Wealth Index	Stress	Sexual Dysfunction	
First Trimester	Age	1	787. ** 0	0.053	-0.066	*0.164	-0.112	**_-0.369
	Spouse's Age		1	0.009	-0.033	**0.251	-0.074	**_-0.247
	Education			1	**0.675	**0.504	-0.044	0.017
	Husband's Education				1	**0.503	-0.058	0.053
	Wealth Index					1	**_-0.265	-0.012
	Stress						1	0.006
	Sexual Dysfunction							1
	Age	Spouse's age	education	Husband's education	Wealth Index	Stress	sexual dysfunction	
Second trimester	Age	1	791.**0	000.0	110.0-	019.0	327.0-**	158.0-
	Spouse's age		1	093.0-	099.0-	111.0	289.0-**	079.0-
	education			1	552.**0	443.**0	053.0-	155.0
	Husband's education				1	393.0	048.0	074.0
	Wealth Index					1	0040.0-	015.0-
	Stress						1	-0.044
	sexual dysfunction							1
	Age	Spouse's age	education	Husband's education	Wealth Index	Stress	sexual dysfunction	
Third Trimester	Age	1	0.721 **	045.0	84.0	**0.277	0.210-**	0.041-
	Spouse's age		1	0.024-	0.046	**0.304	0.239-**	0.050-
	education			1	**0.646	**0.443	0.107	0.160 *
	Husband's education				1	** 0.447	0.063	0.134
	Wealth Index					1	0.138	0.143-
	Stress						1	0.015
	sexual dysfunction							1

** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

coefficient was 0.6 for desire, 0.3 for arousal, 0.3 for lubrication, 0.4 for orgasm, 0.4 for satisfaction and 0.4 for pain. The score of sexual desire ranged from 1.2 to 6 and the scores of the other domains ranged from 0 to 6. Higher scores indicated a better sexual function. Based on this questionnaire, a total score equal to or less than 26.5 was taken to indicate a case of FSD²⁴. Mohammadi et al. confirmed the reliability and validity of the FSFI for assessing female sexual function in Iran in 2008²⁵.

Procedure

After the research project was approved, permissions were obtained from the authorities of the School of Nursing and Midwifery of ShahidBeheshti University

of Medical Sciences and the university officials, and a letter of introduction was obtained after receiving the ethics code (SBMU2.REC.1394.91) from the Joint Committee on Ethics of the Schools of Nursing and Midwifery and Pharmacy. The subjects were selected through random sampling. Four hospitals (Shohada-e Tajrish, Taleghani, Baharloo and Arash hospitals) were selected from three regions in Tehran, Iran, and quotas were allocated to those visiting each hospital and the researcher randomly selected different days of the week to visit each hospital. The researcher then visited the prenatal clinics of the selected hospitals, presented the introduction letter and permissions to the authorities and obtained their permission too. The patients were then evaluated in terms of their

eligibility criteria and informed consent forms were obtained from the eligible candidates and they were briefed on the study objectives and were ensured of the confidentiality of their data and the voluntary nature of participation. The samples then completed the data collection instruments. A total of 150 eligible pregnant women participated in the study from all three trimesters of pregnancy. After collecting the questionnaires, data were analyzed using descriptive indices and Pearson's correlation test.

Results

The study was conducted on 450 samples whose demographic information is presented in Table 1.

The results of the study on the amount of pregnancy-related anxiety in the trimesters suggested a higher mean score of pregnancy-related anxiety in the third trimester than in the first and second trimesters (Table 2). In the first and third trimesters, pregnant mothers were most concerned about their own health and least about their maternal-fetal attachment. In the second trimester, they were mostly concerned about childbirth and least about maternal-fetal attachment.

In the first trimester of pregnancy, the subjects' age had a significant negative correlation with sexual dysfunction; that is, an increased age was associated with a lower score in the FSFI and thereby an increased degree of sexual dysfunction. The spouse's age also showed a significant negative correlation with sexual dysfunction. The wealth index also showed a significant negative correlation with pregnancy-related anxiety. In the second trimester, the level of pregnancy-related anxiety decreased with the age of the subjects and their spouse. In the third trimester, an increase in the age of the subjects and their spouse decreased the level of pregnancy-related anxiety and increased sexual dysfunction. Sexual dysfunction was also reduced as the subjects' level of education increased (Table 5).

Discussion

According to the findings of the present study, an increased gestational age increased pregnancy-related anxiety and the highest level of anxiety was observed in the third trimester. Women experience severe fatigue in the first trimester and the increase in their estrogen levels makes their mood instable. Nausea, vomiting and fear of abortion cause problems, but most women gradually get used to them. The second

trimester of pregnancy is more rewarding for women, because they feel comfortable and excited when the problem of nausea and vomiting are relieved and their previous strength is restored and as they begin to feel the movements of the fetus²⁶. The last trimester of pregnancy is more demanding and distressing²⁷. The pain and fears of childbirth are closely associated with the pregnant woman's anxiety in this trimester²⁸.

Sexual dysfunction increased with gestational age. In a study by Bayrami et al., 66.3% of women had sexual dysfunction in the first trimester, 50.7% in the second trimester and 69.2% in the third trimester, and sexual desire disorder was the most common sexual dysfunction in all three trimesters²⁹. Shishehgar et al. (2014) reported a 68% prevalence of sexual dysfunction in the first trimester and a 72% prevalence in the third trimester, which were both significantly higher than in the second trimester (51%)³⁰. Naldoni et al. similarly argued that sexual function reduces linearly during pregnancy from the first trimester to the third³¹.

In the first trimester of pregnancy, factors such as fatigue, nausea, vomiting, dyspareunia and changes in the woman's mental image are possible causes that reduce the pregnant woman's sexual desire³². In the second trimester, since the pregnant woman is more emotionally stable than in the previous trimester and because she experiences vascular changes in the pelvis and her feelings of nausea have disappeared, the quality of orgasm increases for her. Moreover, psychiatric disorders and anxiety decrease in this period, and this reduction may have a positive effect on sexual function³³. Kardi et al was shown religiosity, spirituality and the meditation practice have significant effects to the physical and mental health³⁴. In the third trimester, concerns about childbirth and fetal health and the discomfort created by an enlarged stomach are exacerbated. In this period, the sexual activity of many couples is reduced or completely stopped and the couple's marital and sexual relationship is thus disrupted³⁵. Feeling physically unattractive, especially to the spouse, and an altered mental body image can lead to an unenjoyable sexual intercourse. The progression of pregnancy thus gradually decreases sexual desire, the frequency of intercourse, the frequency of orgasm and sexual satisfaction in most women³².

Sexual dysfunction was mostly observed in the

domain of arousal in the first and third trimesters and in the domain of pain in the second trimester. In a study by Shishehgar et al. (2014), sexual desire declined in the first trimester, fluctuated in the second and again declined in the third trimester. Sexual arousal, lubrication and orgasm decreased significantly in the third trimester. Sexual satisfaction was significantly lower in the first trimester than in the second and third trimesters, but dyspareunia was more frequent in the second trimester than in the first and third trimesters.

The subjects' mean age was 27.6 years in this study. In the first and third trimesters, sexual dysfunction increased with the age of the subjects and their spouses. Mohammadi et al. (2008) suggested age as a risk factor that increases the prevalence of sexual problems. Similarly, Hosseini (2010) suggested that sexual desire and the frequency of intercourse gradually decrease with age and lead to a reduced satisfaction and increased sexual dysfunction³⁶. Age also affects the sexual response cycle and the physiology of marital relationships and creates hormonal changes. As a result, sexual desire and the frequency of intercourse decrease and ultimately lead to a reduced marital satisfaction³⁷.

In the first trimester of pregnancy, pregnancy-related anxiety decreased with an increase in the wealth index. Dolatian et al (2014) also showed that a higher socioeconomic status reduces pregnant women's anxiety³⁸. Bradley and Corin (2002) explained the relationship between socioeconomic status and well-being by a number of processes –most notably the access to material and social resources and the response to the tensions imposed through different sources³⁹. The socioeconomic status of the individual might affect anxiety and the chance of coping with stress and difficult life conditions as a long-term source. Nonetheless, social inequality in health can be explained indirectly by way of stress⁴⁰. The results of the study by Yousefnezhad et al. Also showed

a positive relationship between mental distress, including depression and economic pressures⁴¹.

In the third trimester of pregnancy, an increase in the subjects' level of education reduced the incidence of sexual dysfunction. Women with higher education complain less about the lack of sexual pleasure and experience lower sexual anxiety and higher marital satisfaction compared to women with lower education, which may be due to their increased knowledge, which can cause greater marital and sexual satisfaction⁴².

Conclusion

Since certain demographic characteristics and the wealth index were found to affect pregnancy-related anxiety, it appears that pregnancy-related anxiety is indirectly related to sexual dysfunction. Since pregnancy is a risky and stressful period in women's life, and considering that sexual desire and function are part of women's health, efforts to reduce pregnancy-related anxiety and enable the continuation of sexual activity during this period are an undeniable necessity for achieving marital satisfaction.

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