

Sexual Function Alteration in First Trimester of Pregnancy Among Vietnamese Women

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Research Article

Keywords: Female sexual function, 1st trimester, Pregnancy, FSFI

Posted Date: April 20th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-436925/v1>

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Abstract

Introduction: A healthy sexual life would contribute to a lasting intimate couple relationship; pregnant women were susceptible to physical, psychological and social changes leading to sexual alterations and dysfunction in pregnancy. In Vietnam, despite not being a novel domain, sexuality has not been extensively evaluated due to the influence of Eastern tradition, which creating promotes unsecured feelings of insecurity when talking about sex.

Aim: To investigate the female sexual function alteration during the 1st trimester of pregnancy and some related factors among Vietnamese women.

Methods: A descriptive cross-sectional study comprising 383 women aged from 18 years old having routine antenatal visits at Department of Obstetrics and Gynecology, Hue University of Medicine and Pharmacy Hospital from April 2016 to March 2017. Data were collected by interviews using is Female Sexual Function Index (FSFI) questionnaire.

Main outcome measures: Subjects' sexual function alteration, using the validated Vietnamese version of Female Sexual Function Index.

Results: The prevalence of women with female sexual function alteration before pregnancy was 53% and in 1st trimester was 88.8%. The frequency of intercourses during 1st trimester of pregnancy is lower than before pregnancy ($p < 0.05$). The main reasons of no sexual activity during pregnancy were fear of harming the fetus (75.1%) and prefer not to be satisfied in the short-term rather than hurt the baby (73.5%). Factors affected female sexual function were age, time of living-together, age of 1st sexual intercourse, pregnancy planning, obstetrical history, sexual initiative, religion, academic level, and jobs ($p < 0.05$).

Conclusions: Sexual function alteration among first trimester pregnant women is a problem which should be considered, and medical staff should provide counseling to them to improve the quality of their sexual life and maintain normal course of pregnancy.

Introduction

Sexual activity is an important but sensitive factor in marriage. A healthy sexual life contributes to a lasting intimate relationship between partners; however, not every woman experiences a fulfilling sexual life, particularly during pregnancy. Many studies worldwide have evaluated the sexual activity of pregnant women and consistently reported a significant reduction in sexual function, especially in the third trimester.¹⁻⁴ Some of this can be attributed to physical discomfort, fear of fetal adverse effects, loss of sexual desire, and dyspareunia, among other factors.^{5,6} Furthermore, these studies report correlations between pregnancy sexual dysfunction and maternal age, obstetrical history, gestational age, body mass index (BMI) and urinary incontinence.⁷

In Vietnam, despite not being a novel domain, sexuality has not been extensively evaluated due to the influence of Eastern tradition, which promotes feelings of insecurity when talking about sex. Since the late 1980s, when very first studies about sexuality were published, sexual dysfunction has been under-investigated in medical science, though there have been a few studies on sexual satisfaction, which is unfortunately only one factor in sexual life.^{8,9}

To the best of our knowledge, there is no available medical study on sexual dysfunction among Vietnamese pregnant women in the medical literature, either domestically or internationally. This study aimed to evaluate female sexual function alterations during the first trimester of pregnancy and some related factors. Female Sexual Function Index questionnaire has been tested by many researchers to assess its effectiveness in evaluating sexual dysfunction and its ability to distinguish between sexual dysfunction and normal function.^{10,11} In this study, we aim to investigate changes in sexual function during pregnancy using the Female Sexual Function Index, Vietnamese translation version, and some related factors associated with these changes.

Materials And Methods

This was a descriptive cross-sectional study. Pregnant women aged at least 18 years with gestational ages from 7 - 13 weeks and 6 days who attended the Clinic of the Department of Obstetrics and Gynecology, Hue University of Medicine and Pharmacy Hospital were invited to enter the study. Other inclusion criteria were women currently living with their husbands and having a stable relationship for at least 6 months. Exclusion criteria were poor obstetrical history (e.g., 3 consecutive miscarriages, history of preterm rupture of membranes), conceived via assisted reproductive technology, multiple pregnancy or disease requiring sexual abstinence during pregnancy.¹²

Sample size was calculated using the prevalence of sexual dysfunction among pregnant women in their first trimester of pregnancy in a study by Leite et al.¹⁰ with $p=0.466$ in the equation $n=z^2 \cdot p(1-p)/d^2$, where $d = 0.005$. The required sample size for analysis was 383.

Our study utilized the Vietnamese translation of Female Sexual Function Index (FSFI).^{13,14} The FSFI comprises a set of 19 questions that covers 6 domains of female sexual function (desire, excitement, lubrication, orgasm, satisfaction, and pain). The scores for the 4 aspects represented by questions 1, 2, 15, and 16 can range from 1-5, and the scores for the remaining 2 aspects represented by questions 3-14 and 17-19 can range from 0-5. The final score is calculated by taking the sum of all elements' scores multiplied by their coefficients. The total score can vary from 2-36, where a higher score corresponds to a higher level of sexual function.

Our study was a two-phase study. The first phase was a pilot study with a sample size of 15 eligible pregnant women to standardize the Vietnamese translation version of the FSFI questionnaire. Data collection was conducted in the second phase, which took place from April 2016 to February 2017. The questionnaire was completed during a personal interview at the Clinic. Before data collection, informed

consent was obtained from each participant. The pregnant women were told that their names and specific data would be confidential and that they were free to enter the study. Sexual dysfunction was defined according to Wiegel's et al.¹³ study, in which the cutoff of total score was 26.55. Based on published work on Asian women, the cutoff points for determining disorders in each of the elements of desire, arousal, lubrication, orgasm, satisfaction, and pain are 4.28, 5.08, 5.45, 5.05, 5.04 and 5.51, respectively.¹⁵ We had 4 questions in our questionnaire to assess participants' sexual activity 4 weeks prior to pregnancy.¹⁶

Data were entered and processed using MedCalc software version 13.0.6.0. Continuous variables were presented as mean \pm SD, and qualitative variables were presented as frequency and percentage. Comparisons between qualitative variables were performed using the χ^2 test,

whereas student's t-test was used for comparisons between continuous variables. A p value < 0.05 was considered statistically significant.

The study protocol was approved by the Ethics Committee for Biomedical Research of Hue University of Medicine and Pharmacy, Vietnam. All study participants provided informed consent for inclusion in the study.

Results

Among eligible 414 pregnant women who were invited to enter the study, 383 women agreed to participate in research and provided answers to the interview by medical staff. From the Table 1, the mean age of subjects was 27.44 ± 4.5 years, the majority (93.1%) were 18 to 34 years old, and 6.9% (26/383) were ≥ 35 years old. One hundred percent of women were nonsmokers before pregnancy, 98.7% (378/383) did not consume alcohol before pregnancy, and 1.3% (5/383) did not drink regularly.

Table 2 shows the frequency of sexual intercourse before conception and during pregnancy, demonstrating that there was a significant reduction. A total of 64.0% of participants reported no sexual activity, in contrast to 0.0% in the preconception period. The most common reasons for not having sex were belief that sex was dangerous for the fetus, feeling tired and exhausted (30.6%) and nausea and vomiting (25.3%). In contrast, the main reasons for continuing sexual intercourse were to maintain the relationship (74.6%) and to satisfy the husband's needs (60.9%) rather than to satisfy the women's needs (34.8%) (see Table 3).

With the cutoff of 26.55 to determine female sexual dysfunction, there was a significant increase in sexual dysfunction prevalence among first-trimester pregnant women (88.8%) compared to nonpregnant women (53.0%).¹³ We witnessed a reduction in the score for every domain of sexual function between the two points of investigation (Table 5). However, regarding the rate of dysfunction, significant differences were seen only in four out of six domains: lubrication ($p < 0.005$), orgasm ($p < 0.005$), satisfaction ($p < 0.0001$) and pain ($p < 0.0001$) (see Table 4 & 5).

We evaluated some factors associated with sexual activity during pregnancy and note several findings. Female sexual dysfunction was not associated with BMI or an age gap of 2 years between partners ($p>0.05$). In contrast, female sexual dysfunction correlated with age group, length of the relationship, age of first sexual intercourse, pregnancy plan, parity, number of children, number of abortions, the initiator of sex, religion, educational attainment and female profession (see Table 6).

Discussion

Sexual dysfunction is a common problem in daily life, with a prevalence of 43% according to Laumann et al.,¹⁷ notably during pregnancy. Pregnancy is responsible for various physical, psychological and social changes that can affect sexual activity.^{18,19}

In our study, 95.8% of patients had only one sexual partner, and the mean age at first sexual intercourse was 24.04 ± 3.25 years, which was higher than that in the study by Haines²⁰ and Gałazka⁴. This could be explained by the Eastern tradition, which discourages premarital sex and multiple partners. A total of 71.8% of our patients had never used contraception, and 14.9% reported having used condoms (see Table 1).

The incidence of sexual intercourse significantly decreased in the first trimester compared to pre-pregnancy, which corresponded to the findings of many other studies, such as that of Erenel et al.²¹ (see Table 2). A total of 64.0% reported no sexual activity during this period, which was higher than the 37.3% of subjects in the study by Haines et al.²⁰ In this study, 75.1% of women believed that sex during pregnancy would be dangerous, a rate that was higher than that in the study by Eryılmaz et al.¹ but similar to that in the study by Liu et al.³ This difference could be due to a lack of sexual information and medical consultation.

Before conception, three-quarters (77.5%) of our patients had sex more than once a week, while the studies by Haines et al.²⁰ (90.0%) and Eryılmaz et al.¹ (100%) reported a higher prevalence.³ Similarly, our study had a lower percentage of women having sex less than once a week in the first trimester than the Haines study, which could be due to differences in socioeconomic and geographic factors, although both studies took place in Asia.

In our study, women were less likely to initiate sexual intercourse (Table 1), and similar findings were reported in the study by Sacomori et al.²² The incidence of female initiators dropped heavily in the first trimester (see Table 4). In contrast, the study by Sacomori reported an increase from 5.2% to 7.2%.²² Regarding the explanation for sexual activity during pregnancy, 74.6% of women stated that they engaged in sexual activity to “satisfy the husband’s need”, 60.9% engaged in sexual activity because of personal desire, and 34.8% considered sex as an expression of love (see Table 4). These findings were different from the study by Moodley, in which 44% engaged in sexual activity to fulfill a personal desire, 35% to maintain the relationship, 13% to express love and 0.7% to satisfy the husband.²³ Women in our study prioritized their relationships with the husband; therefore, sexual intercourse during pregnancy was

mostly to satisfy the husband. Another study by Naim M comprising 150 pregnant women in Pakistan acknowledged the same situation.²⁴

Table 5 shows the significant differences in sexual domains pregestational and first-trimester scores were compared ($p < 0.001$), similar to the study by Aslan et al.⁵ We also noted a significant decrease in the satisfaction domain during the first trimester. This finding corresponded to the studies by Oruç et al.,²⁵ comprising 158 Turkish pregnant women, DeJudicibus et al.²⁶ and Fok et al.²⁷ Our study reported a higher incidence of sexual dysfunction after conception, which was similar to the study by Yıldız.¹⁶ The prevalence of sexual dysfunction in each domain is shown in Table 6, where a significant difference ($p < 0.05$) is noted in all but the desire and arousal domains.

In the study by Gałazka et al.,⁴ there was no difference in sexual dysfunction prevalence between age groups.²⁰ However, we found some associations: prior to pregnancy, sexual dysfunction was more common in women above 30 years old. In contrast, those women experienced fewer symptoms of sexual dysfunction in the first trimester. As women grew older, they were more experienced in dealing with sexual dysfunction during pregnancy. Furthermore, according to Eryılmaz et al.,¹ there was a correlation between the length of the relationship and sexual dysfunction, which could be a reasonable point of view for our findings. To support this statement, we also found that sexual dysfunction occurred more frequently when the participant's relationship had lasted for more than 5 years ($p < 0.005$). The reduction in desire, intimacy and other related issues might lead to lower sexual quality.

Prior to pregnancy, the prevalence of sexual dysfunction was higher in multiparous women, which could be due to the growing pressure of and responsibility for an expanding family.²⁸ However, in the first trimester, nulliparous women had a higher chance of sexual dysfunction in our study. Women who had previously given birth might have more experience so they could be more open to sexual intercourse during pregnancy, while nulliparous participants might feel more pressured.

Our study found that passive women whose husband was the sex initiator were more susceptible to sexual dysfunction during pregnancy. According to Sacomori et al.,²² sexual arousal was correlated with the level of sexual desire; therefore, women who were the initiators would have better sexual function.

Studies by Haines, Pauls and Naldoni found no association between FSFI and educational attainment.^{11,20,29} In contrast, we witnessed a higher FSFI score in the advanced academic education group (college/university or above). This corresponded to the study by Güleroğlu²⁸ showing that lower education limited the ability to self-explore and restricted accessibility to sexual health care information, leading to a lower FSFI score. In contrast, Eryılmaz et al.¹ reported that women with higher education had more knowledge about the risks of having sex during pregnancy.¹

Women who previously had a spontaneous abortion also feared that sexual activity would affect fetal development. In our study, the prominent reason for sexual abstinence was the belief that "sex is dangerous to the fetus", which could also be the explanation for the high prevalence of sexual

dysfunction in this group of women. Although studies have demonstrated that sexual activity during pregnancy does not lead to adverse outcomes, such as abortion, preterm rupture of the membranes, and reproductive tract infection, this false belief remains entrenched.^{30,31}

A higher prevalence of sexual dysfunction was also observed in the group of women who had sex prior to the age of 25 and the group of women whose couple age gap was greater than 5 years. These associations, although not prominent, might be the result of female immaturity and differences in life perspectives.

In our study, the mean preconception BMI was 19.85 ± 2.37 , lower than that of Chang et al.⁷ Esposito concluded that the FSFI score was lower for obese women; however, Yaylali et al.³² reported no major association of obesity with sexual dysfunction; instead, they stated that obesity affected only a few domains of sexual function.^{32,33} We found no significant difference in FSFI score between the BMI<25 and BMI \geq 25 groups ($p > 0.05$).

To the best of our knowledge, this is the first study on sexual dysfunction during the 1st trimester of pregnancy among Vietnamese women. Further study should be conducted to investigate sexual function alteration throughout the pregnancy and the postpartum periods to obtain an overview of sexual dysfunction.

Limitations

Limitations of this study include its nature: this was a woman-centric study based on interviews performed by medical staff. Only if the situations of the participants' partners were taken into consideration would the study provide an objective perspective. In addition, there were socioeconomic and psychological barriers that limited the honest expression of the participants' feelings about sexual activity. Nevertheless, this study showed that sexual health care was an essential issue during pregnancy.

Conclusions

During pregnancy, there was a trend toward reduction in sexual activity that was due mainly to the fear of adverse fetal outcomes. Sexual dysfunction during pregnancy is a common problem that can affect women's lives. Because of the lack of reliable sources of information, women should be carefully consulted during prenatal visits regarding maintenance of their quality of sexual life.

Declarations

FUNDING

None.

AUTHORS CONTRIBUTIONS

Conceptualization, H.D.N.L. and N.V.Q.H.; Methodology, H.D.N.L., L.M.T. and N.V.Q.H.; Investigation, H.D.N.L., L.S.P.A. and N.V.Q.H.; Writing – Original Draft, H.D.N.L., L.M.T. and L.S.P.A.; Writing – Review & Editing, L.S.P.A., L.M.T., and N.V.Q.H.; Resources, N.V.Q.H.; Supervision, L.M.T. and N.V.Q.H.

Competing interests: The authors have no competing interests.

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Tables

Table 1. Characteristics of study subjects.

Factors	Number (%)	
Number of sexual partners throughout lifetime:	367 (95.8)	
1	13 (3.4)	
2	3 (0.8)	
3		
Age of first sexual intercourse: $X \pm D$	24.04 \pm 3.25	
< 18	2 (0.5)	
18 - < 25	224 (58.5)	
≥ 25	157 (41.0)	
Have used birth control methods:		
None	275 (71.8)	
Condom	57 (14.9)	
Birth control pills	28 (7.3)	
Menstrual cycle calculation	7 (1.8)	
Intrauterine device	33 (8.6)	
Number of previous pregnancies (Parity):		
0	168 (43.9)	
1	155 (40.5)	
2	44 (11.5)	
3	14 (3.6)	
4 or more	2 (0.5)	
Current number of children:		
0	189 (49.3)	
1	155 (40.5)	
2	38 (9.9)	
3	1 (0.3)	
	Pre-pregnancy	During pregnancy
Sex initiator:	n=383	n=138
Male	124 (32.4)	86 (62.3)
Both	259 (67.6)	52 (37.7)
Female	0 (0.0)	0 (0.0)
Body mass index (BMI): $X \pm D$	19.85 \pm 2.37	20.10 \pm 2.67
<18.5	125 (32.6)	106 (27.7)
18.5 - 24.9	248 (64.8)	258 (67.4)
25 - 29.9	10 (2.6)	19 (4.9)
≥ 30	0 (0.0)	0 (0.0)

Table 2. Rate of sexual activity during the first trimester of pregnancy.

Rate	Pre-pregnancy (n=383)	During pregnancy (n=383)	p
None	0 (0.0)	245 (64.0)	p<0.0001
Once per month	37 (9.7)	50 (13.1)	
Twice per month	49 (12.8)	40 (10.4)	
Once per week	86 (22.5)	22 (5.7)	
Twice per week	98 (25.5)	23 (6.0)	
At least three times per week	113 (29.5)	3 (0.8)	

Table 3. Reasons for not having / having sexual activity during the first trimester of pregnancy.

Reasons for not having sexual activity during pregnancy	n=245
Tired, exhausted	75 (30.6)
Not being physically comfortable	11 (4.5)
Nausea, vomiting	62 (25.3)
Would rather abstain for sometimes than risk hurting fetus	180 (73.5)
Decline in sex drive	18 (7.3)
No longer feel oneself attractive	2 (0.8)
Believe having intercourse during pregnancy is dangerous	184 (75.1)
Worried wrong intercourse positions can affect fetus	8 (3.3)
Fear of miscarriage	61 (24.9)
Fear of stillbirth	1 (0.4)
Husband declines intercourse	9 (3.7)
Fear having intercourse is painful	2 (0.8)
Reasons for having sexual activity during pregnancy	n=138
To satisfy one's personal needs	48 (34.8)
To satisfy husband's needs	84 (60.9)
Maintain relationship	103 (74.6)
Reduce stress	8 (5.8)
Relax	4 (2.9)
A must in marriage	1 (0.7)
Express one's love	24 (17.4)

Table 4. FSFI score range.

Domain	Prepregnancy (n=383)	During pregnancy (n=383)	S1 to S0
Desire	3.45 ± 0.91	2.46 ± 0.98	p<0.0001
Arousal	3.83 ± 0.97	1.16 ± 1.69	p<0.0001
Lubrication	4.77 ± 0.96	1.49 ± 2.15	p<0.0001
Orgasm	4.16 ± 1.26	1.34 ± 1.98	p<0.0001
Satisfaction	5.14 ± 0.88	3.52 ± 1.29	p<0.0001
Pain	4.67 ± 1.04	1.50 ± 2.16	p<0.0001
Total score	26.02 ± 4.29	11.47 ± 9.36	p<0.0001

Table 5. Sexual dysfunction prevalence in individual domain.

Sexual dysfunction domains	Prepregnancy (n=203)	During pregnancy (n=340)	S1 to S0
Desire	196 (96.6)	334 (98.2)	p>0.05
Arousal	203 (100.0)	340 (100.0)	-
Lubrication	185 (91.1)	335 (98.5)	p<0.05
Orgasm	198 (97.5)	340 (100.0)	p<0.05
Satisfaction	136 (67.0)	319 (93.8)	p<0.0001
Pain	181 (89.2)	333 (97.9)	p<0.0001

Table 6. Factors associated with sexual dysfunction.

	Factor		p
	Length of relationship		
	<5 years (n=299)	≥5 years (n=84)	
Prepregnancy	52.5%	54.8%	p<0.05
During pregnancy	88.6%	89.3%	p<0.0001
	Age of first sexual intercourse		
	<25 years old (n=226)	≥25 years old (n=157)	
Prepregnancy	58.4%	45.2%	p<0.05
During pregnancy	87.2%	91.1%	p<0.05
	Current number of children		
	0 (n=189)	≥ 1 (n=194)	
Prepregnancy	42.9%	51.5%	p<0.05
During pregnancy	67.7%	73.7%	p<0.05
	Parity		
	Nulliparous (n=168)	Multiparous (n=215)	
Prepregnancy	47.6%	57.2%	p<0.0001
During pregnancy	91.1%	87.0%	p<0.05
	Sex initiator		
	Husband (n=124)	Both (n=259)	
Prepregnancy	64.5%	47.5%	p<0.05
During pregnancy	73.3%	61.5%	p<0.05
	Number of abortion		
	0 (n=334)	≥1 (n=49)	
Prepregnancy	51.2%	65.3%	p<0.05
During pregnancy	86.5%	98.0%	p<0.05
	Maternal educational level		
	High education (n=154)	Low education (n=229)	
Prepregnancy	31.2%	67.7%	p<0.05
During pregnancy	81.8%	93.4%	p<0.0001