Sexual Dysfunction and its Related Factors among Pregnant Women Referred to Health Centers in Qazvin, Iran

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Abstract

Introduction: Sexual function is a part of human life and behavior. It is considered a multidimensional phenomenon that it is influenced by various biological, psychological, and social factors. Pregnancy plays an important role in female sexual function and behavior. This study was conducted to investigate the sexual function and to determine the prevalence of sexual dysfunction among pregnant women during the trimesters of pregnancy. Methods: This study is a cross-sectional study conducted in 2016 on 150 pregnant women who referred to the health centers affiliated to Qazvin University of Medical Sciences, in Qazvin. Samples were recruited through convenience sampling. For data collection, a personal and midwifery characteristics checklist, the Female Sexual Function Index, and Depression Anxiety, Stress scales were used. Collected data were then analyzed using SPSS using descriptive statistics, one-way ANOVA, and univariate and multivariate regression models. P < 0.05 was considered statistically significant for all tests. Results: Thirty-three percent of pregnant women suffered from sexual dysfunction. The mean and standard deviation of the female sexual function score were 44.7 ± 26.11. Sexual dysfunction among pregnant women during the first, second, and third trimesters were 2%, 20%, and 78%, respectively. Sexual function was correlated with gestational age (P < 0.05); however, the mean sexual function score was lower during the third trimester. There was also a significant relationship between sexual function with the mother’s age and education. Conclusion: The prevalence of sexual dysfunction during pregnancy was high. Therefore, pregnant women and their spouses need counseling on the physical and mental changes during pregnancy.

Keywords: Pregnancy, sexual dysfunction, sexual function

Introduction

Sexual function is a part of human life and behavior, and it is considered a multidimensional phenomenon that it is influenced by various biological, psychological, and social factors.[1] According to the World Health Organization experts, sexual health refers to a state of physical, emotional, mental, and social well-being in relation to sexuality. In fact, sexual health does not simply mean a lack of disease, dysfunction, or deficiency; rather, mental and psychological factors are included in the definition, as well. In other words, sexual health refers to a positive and respectful approach to sexual intercourses in which the individuals enjoy safe and secure intercourse.[2]

Human sexuality is considered as one of the most important aspects of reproductive health and quality of life.[3] Sexual health is addressed as a part of reproductive health that it is expressed as a need and a strategy to achieve the millennium development goals.[4]

Healthy sexual function and proper marital intercourses are one of the pillars of a lasting and intimate relationship, and they are considered as important factors in spouses’ physical and mental well-being, and family continuity depends on these intercourses. About 60%–80% of women suffered from various forms of sexual dysfunction that it directly/indirectly has an impact on many aspects of their lives.[5]

Female sexual dysfunction is an important public health issue characterized by sexual desire disorder (inactivity or sexual inhibition and aversion), sexual arousal disorder, orgasmic disorders, as well as sexual pain, causing personal, and even interpersonal issues.[6] In the past, sexual dysfunction was considered to be caused

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by psychological disorders, but it is now known to have a multifactorial etiology, including physiological and psychological factors. Factors affecting sexual function include age, fertility status, hormone levels, socioeconomic factors, sexual behaviors and knowledge, the contraceptive methods used, and mental and physical well-being.

Sexual issues affect the men, women, and society’s well-being, and it can cause economic and social consequences. This matter has then led to a greater appreciation of female sexual function over the past two decades.

Pregnancy is one of the important factors affecting the quality and quantity of marital intercourses. During pregnancy, women experience physiological, psychological, and social changes as well as significant changes in hormone levels. However, some of these changes stem from misconceptions that they are common among pregnant women, and it can have a significant effect on the person’s sexual response and endanger the sexual health of pregnant women. Some of these misconceptions include blaming having sexual intercourse during pregnancy, altering one’s body image of her body, reduced feeling of attraction for the spouse, and fear of harm to the fetus and abortion. Desirable sexual function is a factor for family consolidation and a basis for obtaining and sustaining a solid culture. Pregnancy can both deepen and break up marital relationships. All of these factors can affect the phases of a woman’s sexual response cycle and cause changes in her sexual intercourses. Occasionally, these changes can cause significant disruption in couples’ intercourses, as well as the distress of couples and their lack of coordination during sexual intercourses.

The results of one study by Lee showed that continuing sexual activity during pregnancy increased self-awareness, increased power in sexual intercourses, strengthened marital relationships, and reinforced the truth about sexual activities.

In general, the pregnant women’s sexual desire and function are unpredictable during pregnancy, as it may decrease during the first trimester of pregnancy due to hormonal imbalances, fatigue, or nausea, and it may increase during the second trimester of pregnancy due to increased blood flow to the genitals and breasts, and it may decrease again during the third trimester due to weight gain, low back pain, and other symptoms.

The prevalence of sexual dysfunction during pregnancy has been reported to be different and vary from 57% to 75%. Although many previous studies have confirmed that sexual intercourses among low-risk pregnant women are not associated with any complication (such as the risk of abortion, premature rupture of membranes, or preterm labor), many women still have doubts about it, and this issue is considered as one of the main causes of their concern. These false beliefs can have a significant effect on the person’s sexual response and jeopardize the sexual health of pregnant women.

Corbacioglu et al. reported a decline in the female sexual function after pregnancy diagnosis. Studies mentioned the unpredictability of desire and sexual function during pregnancy between the spouses, and changes could be in the form of decreased, increased, or unchanged intercourses. Therefore, further research is needed in this regard due to the different views and ambiguities about the female sexual function during pregnancy, and the importance it has on the level of women’s health and quality of life. This study was conducted to investigate sexual function during the trimesters of pregnancy and its related factors among pregnant women who referred to health centers in Qazvin.

Methods

Study design and participants

This cross-sectional study was conducted on healthy pregnant women who referred to health centers affiliated to Qazvin University of Medical Sciences from May to August 2016. The sample size was calculated 132 pregnant women considering 95% confidence level and 80% test power based on the Jamali and Mosalanejad study entitled “the prevalence of sexual dysfunction;”

\[ N = \frac{2 \times 1.96 + 0.84}{d^2} \times \left( p(1-p) \right) = \frac{(0.79(1-0.79))}{(0.13\times0.79)^2} = 132 \]

Given the probability of incomplete responses to the questionnaires, 20% more samples were added to the study; and finally, 150 pregnant women were enrolled in the present study.

The inclusion criteria for the study were living in Qazvin and having low-risk pregnancy. The exclusion criteria included the risk of abortion, preterm labor and placenta previa, history of depression, anxiety and stress, hospitalization in psychiatric wards, use of antidepressants and anxiolytics, the occurrence of an accident (such as relatives’ death, divorce, accident, etc.) during the past 3 months, and no willingness to participate in the study.

Measures

For data collection, three questionnaires, including a personal and midwifery characteristics checklist, the Female Sexual Function Index (FSFI), and Depression Anxiety, Stress Scales (DASS-21) were used. The personal and midwifery characteristics checklist was a researcher-made checklist which it consisted of 20 items in two parts. The first part of the checklist included personal characteristics including marriage age, marriage duration, age, education and employment status of the pregnant woman and her spouse. The second part of the checklist was about the

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Results

This study was done on 150 pregnant women aged 16 to 42 years, and their mean age was 27.87 ± 5.49 years. Most of the samples were housewives (89.3%) and had high-school education (48.7%). 37.3% of the women in the study stated that they were pregnant for the first time, and 82.7% had planned for pregnancy. In addition, 10%, 30%, and 60% of the samples were in their first, second, and third trimesters of pregnancy, respectively. Samples' mean gestational age was 28.9 ± 99.59 weeks. The relationship between sexual dysfunction with demographic and clinical variables is reported in Table 1. Based on the results, the mean and standard deviation scores of sexual function, depression, stress, and anxiety were 44.7 ± 26.11, 9.86 ± 3.02, 11.79 ± 3.52, and 10.34 ± 2.99, respectively. In addition, 33.3% of the pregnant women suffered from sexual dysfunction; while, the other 66.7% had normal sexual function.

The results of one-way ANOVA on the frequency of sexual dysfunction at each phase of the cycle indicated that 2% of women had sexual dysfunction during the first trimester, 20% of women during the second trimester, and 78% of women during the third trimester. Gestational age was
Table 1: The relationship between sexual dysfunction with demographic and clinical variables based on univariate regression model

| Variable                        | Mean±SD | P    | 95% CI           |
|---------------------------------|---------|------|------------------|
| Age (year)                      | 27.87±5.49 | 0.108 | 0.922-1.432     |
| Spouse’s age (year)             | 31.55±5.42 | 0.446 | 0.839-1.491     |
| Marriage duration (year)        | 6.52±4.66  | 0.748 | 0.668-1.335     |
| Depression                      | 9.86±3.02  | 0.174 | 0.821-2.230     |
| Anxiety                         | 10.34±2.99 | 0.869 | 0.590-1.338     |
| Stress                          | 11.79±3.52 | 0.306 | 0.671-1.459     |

N (%) | P    | 95% CI

| Education                       |         |      |                  |
|---------------------------------|---------|------|------------------|
| Illiterate                      | 3 (2)   | 0.090 |                  |
| Elementary                      | 35 (23.3)| 0.475 | 0.030-8.124     |
| High-school                     | 73 (48.7)| 0.045 | 0.028-2.933     |
| University                      | 39 (26) | 0.363 |                  |
| Spouse’s education              |         |      |                  |
| Illiterate                      | 3 (2)   | 0.235 |                  |
| Elementary                      | 40 (26.7)| 0.161 | 0.351-123.413   |
| High-school                     | 72 (48) | 0.291 | 0.126-10.608    |
| University                      | 35 (23.3)| 0.485 |                  |
| Gestational age                 |         |      |                  |
| First trimester                 | 15 (10) | 0.014 | 0.984-1.235     |
| Second trimester                | 45 (30) |       |                  |
| Third trimester                 | 90 (60) |       |                  |
| Number of pregnancies           |         |      |                  |
| One                             | 56 (37.4)| 0.569 |                  |
| Two                             | 47 (31.3)|       |                  |
| Three and more                  | 47 (31.3)|       |                  |
| Tendency to pregnancy           |         |      |                  |
| Wanted                          | 124 (82.7)| 0.076 |                  |
| Unwanted                        | 26 (17.3)|       |                  |
| History of abortion             |         |      |                  |
| Yes                             | 99 (66) | 0.099 |                  |
| No                              | 51 (34) |       |                  |
| Pregnancy                       | 150 (100)| 0.209 |                  |

P<0.2, CI: Confidence interval, SD: Standard deviation

significantly correlated with sexual desire (P = 0.005), sexual arousal (P = 0.009), lubrication (P = 0.009), orgasm (P = 0.008), and pain (P = 0.009); however, there was no significant relationship between gestational age and satisfaction (P = 0.1). The trend of changes in sexual dysfunction related to the phases of the sexual response cycle during the first, second, and third trimesters of pregnancy is shown in Table 2.

The results of the univariate regression model to select the predictor variables for analysis in the multivariate regression model showed that the variables of mother’s age, education, depression, pregnancy, gestational age, and tendency to pregnancy have P < 0.2. The results of multivariate regression model showed that among demographic variables, sexual function was decreased up to 0.555 in mothers with increased age, decreased down to 0.221 with increased gestational age, and increased up to 4.861 if mothers had university education, and these changes were statistically significant as predictor variables. The multiple regression model was also used to further investigate the relationship between the variables of depression, anxiety, and stress with sexual function; the results showed that none of these variables had a significant relationship with sexual function (P > 0.05). Overall, the results of the regression model showed that the variables included in the model were able to explain 13% of the variance in the concept of sexual dysfunction. The results of the multivariate regression model are presented in Table 3.

Discussion

In the present study, which it was conducted on 150 pregnant women in Qazvin, the results showed that almost one-third (33.3%) of pregnant women had sexual dysfunction during pregnancy. Inconsistent with the results of the present study, the prevalence of sexual dysfunction reported by Goshtasbi et al. was about 31.5%. In Jamali and Mosalanejad study, this prevalence was reported 79.1%. The reason for this difference could be that Jamali and Mosalanejad considered a score <26.5 as sexual dysfunction, whereas the cutoff point in the present study was 28. In Ebrahimian et al. study, 80% of women experienced at least one sexual disorder during pregnancy. In Corbacioglu et al. that conducted on 260 pregnant women in Thailand, showed that 90.8% of women had sexual dysfunction. The difference in the prevalence of sexual dysfunction in different studies could be related to various factors such as cultural differences, studies’ methods, and the cutoff points used to determine sexual dysfunction.

Physiological and psychological changes during pregnancy cause changes in sexual intercourses. In addition, sexual behaviors and individuals’ attitudes during pregnancy are affected by tradition, cultural values, religious beliefs, physical changes, and medical restrictions. Among the various factors, Kaplan believed that a high percentage of sexual dysfunction was due to poor mental health. Some of the critical factors affecting samples’ responses to items and outcomes on sexual issues include negative social beliefs and paying great attention to these beliefs as taboo, individual differences, psychological characteristics, shame, embarrassment, and so on.

These findings indicate a high prevalence of sexual dissatisfaction among pregnant women. Physiological and psychological changes during pregnancy cause changes in sexual intercourses. These changes sometimes cause significant disturbances in the spouses' relationships, in order that the abnormal functioning of sexual behavior during pregnancy causes both husband and wife distress and lack of coordination in their sexual intercourses.

Considering the above findings, these findings highlighted the importance of providing information for women before and even after marriage, and a framework for religious, social, and family values in relation to sexual intercourses.
and activities. Therefore, providing the necessary training on sexual intercourses is strongly important for women.

In the present study, no significant relationship was found between anxiety, depression, and stress with sexual function. Based on Masters, Johnson, and Kaplan’s theoretical framework, it is hypothesized that anxiety has an adverse effect on sexual arousal. Different types of anxiety disorders can have different effects on sexual function. Van Minnen et al. believed that anxiety is not always incompatible with sexual function. However, higher levels of anxiety can impair sexual function, which is consistent with the present study. Depression in women is linked to sexual issues. Depression may have a clear impact on sexual satisfaction. The results of Tahmasebi and Abasi study indicated that there was a significant relationship between sexual function and depression. In sexual dysfunction, a person’s self-esteem usually decreases as a result of shame that results in mental obsession and eventually leads to depression in the person. In Brotto et al.’s study, the greatest impact of depression was on sexual desire and arousal. According to the findings of the present study, the number of weeks past pregnancy had a significant relationship with sexual dysfunction. In other words, the decrease in the mean score of female sexual function during the third trimester of pregnancy was higher than the other trimesters, and the sexual desire problems were increased with the progress of the pregnancy, and there was a statistically significant difference during the three trimesters. These findings were in line with the findings of the studies by Jamali and Mosalanejad and Aslan et al. In Bostani Khalesi et al.’s study, 48.25%, 26.57%, and 72.02% of the samples had sexual dysfunction during the first, second, and third trimester of pregnancy, respectively, which it is not consistent with the findings of the present study.

### Table 2: The mean score of sexual function related to sexual response cycle during the first, second, and third trimester of pregnancy

| Phases of the sexual response cycle | The first trimester of pregnancy (gestational age <14 weeks) | The second trimester of pregnancy (gestational age between 14 and 28 weeks) | The third trimester of pregnancy (gestational age >28 weeks) | The trimesters of pregnancy mean | ANOVA (P<0.05) |
|-----------------------------------|----------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------|-----------------|
| Sexual desire                     | 5.47±1.55                                                | 4.95±1.8                                                              | 4.12±1.77                                                   | 4.49±1.81                       | 0.005*          |
| Sexual arousal                    | 10.47±4.45                                               | 8.83±5.49                                                             | 6.50±5.28                                                   | 7.61±5.38                       | 0.009*          |
| Lubrication                       | 12.2±4.87                                                | 10.24±5.92                                                            | 7.74±6.8                                                    | 8.95±6.48                       | 0.009*          |
| Orgasm                            | 9.73±4.28                                                | 8±5.18                                                                | 5.62±5.43                                                   | 6.76±5.39                       | 0.008*          |
| Satisfaction                      | 10.47±4.03                                               | 10.10±3.96                                                            | 8.74±4.12                                                   | 9.33±4.07                       | 0.10            |
| Sexual pain                       | 10.73±4.23                                               | 8.93±5.63                                                             | 6.32±6.01                                                   | 7.56±5.88                       | 0.009*          |
| Overall score of sexual function  | 59.07±18.55                                              | 51.20±24.81                                                           | 39.06±26.35                                                 | 44.7±26.11                      | 0.009*          |

*P<0.05 was considered significant in One-way ANOVA test. SD: Standard deviation

### Table 3: The relationship between sexual dysfunction with demographic and clinical variables based on multivariate regression model

| Predictive variable               | Unstandardized coefficient β | Standardized coefficient β | Unstandardized coefficient β SE | t          | P       |
|----------------------------------|------------------------------|----------------------------|---------------------------------|------------|---------|
| Mother’s age                     | −0.827                       | −0.553                     | −0.174                          | 0.812      | 0.000   |
| Father’s age                     | 0.025                        | 0.637                      | 0.005                           | 0.039      | 0.969   |
| Marriage duration                | 0.110                        | 0.681                      | 0.020                           | 0.162      | 0.872   |
| Education                        |                              |                            |                                 |            |         |
| Illiterate                       | −8.734                       | 14.485                     | −0.047                          | −0.603     | 0.548   |
| Elementary                       | −3.026                       | 5.168                      | −0.049                          | −0.585     | 0.559   |
| University                       | −13.565                      | 4.861                      | −0.228                          | −2.791     | 0.006   |
| Tendency to pregnancy            | 0.099                        | 0.668                      | 0.018                           | 0.149      | 0.882   |
| Pregnancy occurrence             | 4.410                        | 2.464                      | 0.200                           | 1.789      | 0.076   |
| Gestational age                  | −1.002                       | 0.219                      | −0.365                          | 4.579      | 0.000   |
| Depression                       | −0.482                       | 1.050                      | −0.056                          | −0.453     | 0.647   |
| Anxiety                          | 0.712                        | 0.948                      | 0.082                           | 0.752      | 0.453   |
| Stress                           | 0.822                        | 0.929                      | 0.112                           | 0.885      | 0.375   |
| Model’s features                 |                              |                            |                                 | R²=0.167   | Adjusted R²=0.136 |

SE: Standard error
misconceptions, negative attitudes, and misunderstandings of couples’ physical and emotional changes during pregnancy.

In the present study, the most prevalent sexual dysfunctions were in the following domains: sexual desire, orgasm, sexual pain, sexual arousal, lubrication, and sexual satisfaction. The most common sexual dysfunction was decreased sexual desire. The trend of decreasing sexual desire was consistent with the findings of studies by Aslan et al. and Jamali and Mosalanejad. The results of the study by Anzaku et al. in Tehran also showed that sexual desire, sexual satisfaction, and women’s ability to reach orgasm decreased during pregnancy and the most common sexual dysfunction in women during the first, second, and third trimesters was decreased sexual desire. Furthermore, Von believed that sexual desire decreased in pregnant women, which was more pronounced during the first and third trimesters. One of the reasons for the decline in women’s sexual desire during pregnancy is hormonal imbalance. However, non-hormonal factors such as nausea, low back pain, chest pain, depression, irritability, and other mood and physical disorders can also decrease the desire for sex. In addition, the decline in sexual desire in the present study might be because most pregnant women during the third trimester are very concerned about their child, and therefore, do not pay much attention to sexual intercourses during this period. Furthermore, the mother’s perception of herself and her state of well-being is strongly influenced by maternal stress, especially after the fetus begins to move, which can also reduce her sexual arousal during pregnancy.

The findings of this study showed that psychological arousal decreased with pregnancy progression and there was a significant difference between the trimesters of pregnancy, which is consistent with the findings of Jamali and Mosalanejad and Aslan et al. studies. Similar to other studies, lubrication decreased with increased gestational age, and this difference was statistically significant and consistent with Jamali and Mosalanejad’s study. In general, vaginal tissues become congested during pregnancy, leading to increased blood vessels as well as blood circulation during this period. Therefore, pregnant women are in a state of physiological arousal that can lead to a decrease in lubrication or dryness and vaginal discomfort.

The findings of the present study showed that there was a statistically significant difference between the trimesters of pregnancy and orgasm; in which orgasm was decreased as gestational age increased. The results of one meta-analysis study showed that orgasm disorders and dissatisfaction with orgasm were greater during the third trimester. This finding is consistent with the findings of Aslan et al., Jamali and Mosalanejad studies in terms of decreased female sexual satisfaction with pregnancy progression. A study by Oniz et al. showed that 52.7% of pregnant women did not experience orgasm during the third trimester with increased gestational age. The lack of orgasms in these studies might be due to physical changes associated with pregnancy, such as increased abdominal volume.

Concerning the pregnant woman’s age, the findings of the present study showed that increased age had a negative effect on sexual function. As the age increased for 1 year, the mean score of sexual function decreases up to 0.82. In one study, Pasha and Hadj Ahmadi also found that there was a significant relationship between the pregnant women’s age (who were over 35 years old) and the decline in sexual desire. In Ahmad Shirvani and Bagheri Nesami’s study, the mean age of women with sexual dysfunction was significantly higher. The results of the study by Anzaku et al. showed that age had no effect on sexual desire, sexual arousal, and sexual satisfaction. In Pauls et al.’s study, there was also no significant relationship between mother’s age and sexual dysfunction. These contradictory findings regarding the influence of mother’s age on sexual function might be due to differences in cultural attitudes that affected women’s sexual behavior and responses.

According to the findings of this study, there was a significant relationship between low education and sexual dysfunction among women. In Pasha and Hadj Ahmadi’s study, women’s sexual desire was significantly related to their education and economic status. In Zahraee’s study, there was a significant relationship between the marital relationship with education, economic status, residence, woman’s age, and the number of children. Given the high prevalence of sexual dysfunction among pregnant women, investigating sexual function during pregnancy because of its importance as one of the important factors affecting health and quality of life should be considered as one of the important midwifery care. In this regard, it is recommended that health centers provide pregnant women with counseling classes so that women can express their sexual issues and receive sexual health education and solutions.

One of the limitations of this study was the inclusion of illiterate samples since the questionnaire was related to sexual dysfunction; it was better to have literate people only. Another limitation of this study was the lack of studying the trend of sexual function changes in one group during pregnancy. Given the effective role of individual characteristics (personal and psychological characteristics) on sexual function, it is suggested to investigate the process of sexual function changes in one group during pregnancy and even before and after childbirth. Furthermore, because sexuality differs in different cultures, it is suggested to examine this issue in different ethnicities. It is also recommended that interventional studies be conducted to investigate the impact of counseling on female sexual function.
Conclusions
The results of this study showed lower sexual function score among pregnant women during the third trimester of pregnancy. Therefore, it is recommended that health-care providers regularly evaluate individuals’ sexual function during pregnancy and even before that. Furthermore, educating young couples on how to properly understand each other’s sexual intercourses and desires, and how to respond to them could be a major focus of pre-marriage counseling sessions. Pregnant women and their spouses also need counseling on physical and mental changes during pregnancy. The diagnosis and treatment of sexual disorders have had a significant impact on improving the quality of marital relationships, which itself is an important step in preventing family conflicts and its consequences, increasing direct and indirect support for educational and counseling programs. In addition, direct and indirect support for training and counseling programs should be increased.

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Conflicts of interest
There are no conflicts of interest.

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