ORIGINAL RESEARCH—WOMEN'S SEXUAL HEALTH

Sexuality During Pregnancy

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ABSTRACT

Introduction. Sexuality is an important part of health and well-being. Sexual behavior modifies as pregnancy progresses, influenced by biological, psychological, and social factors.

Aim. To evaluate changes in sexual perceptions and activities during pregnancy and to determine sexual dysfunctions in that period.

Main Outcome Measures. Sexual perceptions (desire from the partner, feelings of attractiveness, and fear of sexual intercourse), sexual activities during pregnancy (sexual intercourse frequency, the most frequent sexual intercourse trimester, sexual activity during the birth week, type(s) of sexual intercourse, changes in sexual satisfaction and desire compared with the pre-pregnancy period, and changes in sexual intercourse frequency during each trimester compared with the pre-pregnancy period), and sexual dysfunctions.

Methods. Puerperal women were asked to anonymously complete a self-administered and structured questionnaire at the day of discharge from hospital.

Results. One hundred and eighty-eight women, aged between 17 years and 40 years with a mean age of 28.9 years, were analyzed. The first trimester was considered the most frequent period of sexual intercourse (44.7%), followed by the second trimester (35.6%). Fifty-five percent reported a decrease of sexual activity during the third trimester. Fear of sexual intercourse was referred by 23.4% of the women questioned. Sexual satisfaction was unchanged in 48.4% of the subjects and decreased in 27.7% ($P < 0.0001$); sexual desire is reported to be unchanged in 38.8% and decreased in 32.5% ($P = 0.196$) of the population. Vaginal, oral, anal sex, and masturbation were performed by 98.3%, 38.1%, 6.6%, and 20.4% of the women, respectively.

Conclusions. We determined in our study that sexual satisfaction do not change in pregnancy compared with the pre-pregnancy patterns despite a decline of sexual activity during the third trimester. A discussion of expected changes in sexuality should be routinely done by the doctor in order to improve couples' perception of possible sexual modifications induced by pregnancy. **Pauleta JR, Pereira NM, and Graça LM. Sexuality during pregnancy. J Sex Med 2010;7:136–142.**

Key Words. Female Sexual Function; Sexual Perceptions; Sexual Activities; Sexual Dysfunctions; Pregnancy; Sexual Intercourse Frequency

Introduction

Pregnancy is a special period in the life of women that is characterized by physical, hormonal, and psychological changes that, in conjugation with social and cultural influences, affect women's sexuality and couples' sexual relationship. This reinforces the role of pregnancy as a stimulus for partners to search for new ways to enhance mutual emotional connection, intimacy, and close physical affinity, in order to share physical sexual pleasure and satisfy each other's sexual needs. A healthy sexuality during pregnancy is necessary for the parental transition that occurs in that period [1].

Specific changes that occur in each pregnancy trimester have significant influences on sexual behavior. A reduction in sexual intercourse frequency, desire, and satisfaction occurs in many

women as pregnancy progresses, particularly during the third trimester, compared with pre-pregnancy [2–11]. There are numerous physical and psychological factors that may justify this [12,13]. Hormonal changes (increased estrogen, progesterone, and prolactine) cause nausea and breast tenderness, which, in addition to fatigue, exhaustion, and anxiety, may contribute to general feebleness and difficulty to become aroused. As sexual desire and arousal influence sexual satisfaction [14] and intercourse frequency, it is understandable that sexual practices decreased. Moreover, self-consciousness about a growing girth leads to a gradual change in a pregnant woman's self-image that influence her self-confidence, while posing physical limitations to perform some sexual positions. Length of intercourse and ability to experience orgasm decrease during the later phases of pregnancy compared with pre-pregnancy, and dyspareunia increases significantly throughout pregnancy [4]. Both the women and their partners have concerns regarding complications in the pregnancy as a result of sexual intercourse [2–4].

Aim

The objective of this study is to evaluate the sexual patterns (perceptions, activities, and dysfunctions) during pregnancy and to assess changes in sexual desire, satisfaction, and frequency compared with the pre-pregnancy period.

Methods

Design and Data Collection

A descriptive and quantitative study was conducted in our department between July and September 2008. The study was approved by the committee of ethics. Women whose birth occurred in our department were informed about the purpose of the study and were invited to participate voluntarily. We gathered the data using an anonymous written questionnaire that was given at the day of discharge from the hospital. We performed a pilot study on 15 puerperal women prior to the beginning of the research to ensure understanding of the questions and participation. The majority of women refused to answer the question about the duration of sexual intercourse and to specify oral sex as cunnilingus or fellatio. Then, we developed the final version of the questionnaire without these questions and we decided to not discriminate if oral sex was performed by man or woman. The questionnaire was filled by each of the puerperal women and we have assured confidentiality. Women whose sexual partners lived away from them, human immunodeficiency virus (HIV) seropositive women, and women that had obstetric conditions that imposed a long period of sexual abstinence (placenta previa, multiple pregnancy, cervical incompetence, and risk of premature labor) were excluded from the study.

Details of the Questionnaire

The questionnaire included two sections. The first section is composed by questions about sociodemographic aspects: age, ethnic group and education of the couple; marital status; parity; nationality, and religion of women. The second section included questions concerning sexual perceptions and activities during pregnancy: feeling less sexual desire from the sexual partner (yes or no); feeling less attractive or sensual (yes or no); feeling fear of sexual intercourse (yes or no); mean of sexual intercourse frequency during the whole pregnancy period (≤1 time a month; 2–3 times a month; 1 time a week; 2–3 times a week; 4–7 times a week); the most (more) frequent sexual intercourse trimester(s); sexual intercourse frequency in each trimester (first, second, and third) compared with the pre-pregnancy period (increased, decreased, or unchanged); sexual satisfaction and sexual desire compared with the pre-pregnancy period (increased, decreased, or unchanged); type(s) of sexual intercourse performed (anal, vaginal, oral, and masturbation—one or more choices are possible); sexual activity during the third trimester (yes or no) and during the birth week (yes or no); sexual dysfunctions (lower desire, dyspareunia, anorgasmy, difficulty in lubrication—one or more options are possible); need to talk about sexuality with doctors (yes or no); and next 6 months perspective about sexual activity (increased, decreased or unchanged). All questions were closed ended, except the question about feeling of fear during sexual activity that is open ended and in which we asked respondents to specify.

Statistical analysis was performed using the chi-square test. Statistical significance was considered as $P < 0.05$.

Main Outcome Measures

The main outcome measures are sexual perceptions (desire from the partner, feeling less attractive or sensual, and fear of sexual intercourse) and sexual activities during pregnancy (mean of sexual

Table 1 Demographic characteristics

	N = 188
Women age (years); mean (SD)	28.9 (5.68)
Partner age (years); mean (SD)	31.4 (6.65)
Women ethnic group, N (%)	
White	155 (82.5)
Black	24 (12.8)
Asian	2 (1.1)
No answer	7 (3.7)
Partner ethnic group, N (%)	
White	157 (83.5)
Black	21 (11.2)
Asian	1 (0.59)
No answer	9 (4.8)
Women education, N (%)	
Primary school	20 (10.6)
High school	93 (49.5)
University	60 (31.9)
Master/graduate	9 (4.8)
No answer	6 (3.2)
Partner education, N (%)	
Primary school	37 (19.7)
High school	91 (48.4)
University	43 (22.9)
Master/graduate	8 (4.3)
No answer	9 (4.8)
Marital status, N (%)	
Marital relation	138 (73.4)
Single	44 (23.4)
Divorced	4 (2.1)
No answer	2 (1.1)
Para, N (%)	
1	108 (57.4)
2	63 (33.5)
≥3	15 (8.0)
No answer	2 (1.1)
Women religion, N (%)	
Christian	158 (84.0)
Muslim	3 (1.6)
Hindu	1 (0.5)
Agnostic	3 (1.6)
Other	14 (7.5)
No answer	9 (4.8)
Women nationality, N (%)	
Portugal	161 (85.6)
Cape Verde	6 (3.2)
Angola	5 (2.7)
Brazil	7 (3.7)
Guine-Bissau	2 (1.0)
Albania	1 (0.5)
No answer	6 (3.2)

SD = standard deviation.

intercourse frequency, the most frequent sexual intercourse trimester, type(s) of sexual intercourse performed, sexual activity during the third trimester and during the birth week, changes of sexual satisfaction and sexual desire compared with the pre-pregnancy period, and changes of sexual intercourse frequency during each trimester compared with the pre-pregnancy period). We also analyzed sexual dysfunctions, need to talk with doctors about sexuality, and 6 months perspective about changes in sexual activity.

Results

A total of 194 women were enrolled in the study. Six women were excluded: one was HIV seropositive, one had placenta previa, one lived away from her husband, one had a twin pregnancy with risk of premature labor, and two women had a risk of premature labor. One hundred and eighty-eight women, aged between 17 years and 40 years with a mean age of 28.9 years, were analyzed. Table 1 shows the demographic data of women and their sexual partners. One hundred and eight women (57.4) had their first child. Nearly all (93.6%) said that their pregnancy was desired, but 27.1% stated that the pregnancy was not planned. Forty-nine patients (26.1%) had a previous abortion.

Forty-four (23.4%) women reported fear of sexual intercourse: 18 revealed fear of "harming the baby," 11 of miscarriage, 4 of dyspareunia, 2 of preterm labor, and 2 were concerned about their partner's worry. Seven women did not explain their concerns regarding sexual intercourse. Feeling less sexual desire from partners during pregnancy compared with pre-pregnancy was reported by 46 women (24.5%). Feeling less attractive or sensual during the pregnancy period was stated by 78 women (41.5%). Results are summarized in Table 2.

As showed in Table 3, sexual activity decreased significantly throughout pregnancy. The first trimester was considered the most frequent period of sexual intercourse (44.7%), followed by the second trimester (35.6%). Table 4 lists changes in sexual activities during pregnancy compared with the period prior to pregnancy. Many women reported a constancy in sexual activities during the first and second trimesters (46.8% and 50.5%, respectively), and a decrease during the third trimester (55.3%). There were no statistical differences between the first and second trimesters; however, statistical differences were evident between the second and third trimesters, and between first and third trimesters in all analyzed parameters (Table 5).

Table 2 Psychological changes and beliefs of women during pregnancy

	Yes	No	No answer
Fear of sexual intercourse, N (%)	44 (23.4)	143 (76.1)	1 (0.5)
Feeling less sexual desire from partner, N (%)	46 (24.5)	141 (75.0)	1 (0.5)
Feeling less sensual/ attractive, N (%)	78 (41.5)	107 (56.9)	3 (1.6)

Sexual satisfaction was unchanged in 48.4% and decreased in 27.7% ($P < 0.0001$), and sexual desire is reported to be unchanged in 38.8% and decreased in 32.5% ($P = 0.196$) compared with the pre-pregnancy period.

Eighty percent of respondents reported sexual activities during the third trimester, but 61.0% did not engage in any type of sexual intercourse during the birth week.

Data regarding the types of sexual activity performed during pregnancy are shown in Table 6. Seven women did not answer the question. Among the respondents, three did not engage in vaginal intercourse during pregnancy. However, two of these women had oral sex and one had oral sex and masturbation. Oral and anal intercourse were performed by 38.1% and 6.6% of the women, respectively.

Only 182 women answered the question about mean sexual intercourse frequency during pregnancy. The results are listed in Table 7. Among the respondents, 32.4% reported having sex once a week, and 25.8% reported having sex two to three times a week.

In respect to sexual dysfunctions, lower desire was reported by 20 (10.9%) women, dyspareunia by 18 (9.8%) women, anorgasmy by 12 (6.6%) women, and difficulty in lubrication by 8 (4.4%) women. One hundred and thirty-eight (75.4%) respondents did not complain about sexual dysfunctions. Five women did not answer the question.

Of 180 respondents, 160 (88.9%) said that they do not need to talk about sexuality with their doctors. In relation to the next 6 months after delivery, 109 (60.6%) women stated that their sexual activity will not change, 40 (22.2%) stated that it will decrease, and 31 (17.2%) referred a possible increase in their performance compared with pre-pregnancy. Eight women did not answer this question.

Table 3 Trimester(s) in which sexual intercourse was more frequent

	N (%)
First trimester	84 (44.7)
First and second trimesters	7 (3.7)
Second trimester	67 (35.6)
Second and third trimesters	2 (1.1)
Third trimester	19 (10.1)
No answer	9 (4.8)

Table 5 Changes in sexual activities during pregnancy

	Increased *P*	Decreased *P*	Unchanged *P*
First vs. second trimesters	0.60	0.095	0.47
Second vs. third trimesters	0.009	0.0000	0.0000
First vs. third trimesters	0.0365	0.0000	0.0000

Table 6 Type(s) of sexual activity during pregnancy (one or more choices)

	N (%)
Anal intercourse	12 (6.6)
Vaginal intercourse	178 (98.3)
Oral intercourse	69 (38.1)
Masturbation	37 (20.4)

Table 7 Sexual intercourse frequency during pregnancy

	N (%)
≤1 time a month	29 (15.9)
2–3 times a month	35 (19.2)
1 time a week	59 (32.4)
2–3 times a week	47 (25.8)
4–7 times a week	12 (6.6)

Discussion

Our findings indicate a substantial decrease in the frequency of sexual intercourse throughout pregnancy. These results are consonant with other authors [2–11,15].

The majority of women referred no change in sexual activities in the first or second trimesters (46.8% and 50.5%, respectively). In a meta-analysis of 59 studies, von Sydow demonstrated that coital frequency did not change or changed only slightly in the first trimester and it was quite variable in the second [16].

Although 80.1% reported engaging in sexual intercourse during the third trimester, it was considered the most frequent trimester of sexual

Table 4 Changes of sexual functions during pregnancy compared with pre-pregnancy, N (%)

	Increased	Decreased	Unchanged	No answer
Sexual activity during first trimester	33 (17.5)	54 (28.7)	88 (46.8)	13 (6.9)
Sexual activity during second trimester	37 (19.7)	40 (21.3)	95 (50.5)	16 (8.5)
Sexual activity during third trimester	19 (10.1)	104 (55.3)	49 (26.1)	16 (8.5)
Sexual satisfaction	28 (14.9)	52 (27.7)	91 (48.4)	17 (9.0)
Sexual desire	42 (22.3)	61 (32.5)	73 (38.8)	12 (6.4)

intercourse only by 10.1%. Moreover, we found decreased sexual activities in 55.3% of the women during this trimester compared with pre-pregnancy. It is interesting to note that 38.9% continued engaging in sexual intercourse during the birth week. Coitus late in pregnancy is not related to bacterial vaginosis [17], and does not increase preterm labor, premature rupture of membranes, low birthweight, or perinatal death [18–20]. Sexual positions, such as woman on top, side by side, or rear entry, were used more frequently as pregnancy progresses [2,4,15,21].

Eryilmaz et al. pointed some reasons that may explain the decrease of sexual frequency during pregnancy as exhaustion, fatigue, fear of harming the fetus, causing abortion, inducing preterm labor, and waning of sexual desire. They also reported a positive correlation between changes in sexual life during pregnancy and the duration of marriage, educational level, and parity [12].

Three women did not engage in vaginal intercourse, however, performed other types of sexual activities. These women did not complain about fear of sex or sexual dysfunctions. In a Spanish population [21], 14% of the women practiced masturbation during pregnancy. Our results are similar (20.4%), but very different from an Iranian population [15] where only 6% reported this type of sexual activity. We cannot discard the social, cultural, and religious influences on the analysis of this fact.

Fear of sexual intercourse was referred by 23.4% of the women. As pointed by other studies [2,15,22], our results indicated that women often fear that sexual intercourse might harm the fetus, induce miscarriage, or premature birth, although our results were less expressive. Interestingly, some women were said to fear sexual intercourse because of partners' worry and because they were afraid to have dyspareunia. Gökyildiz et al. found that fear of intercourse was experienced throughout pregnancy, particularly in the third trimester [4]. Cultural factors and inadequate knowledge influence attitudes toward and fears of intercourse. In a study performed in Pakistan [22] and Nigeria [23] women were convinced that sexual intercourse during pregnancy widens the vagina and facilitates labor, and in a study realized in Iran [15] women pointed fear of causing rupture of the female fetus hymen or fetal blindness. Fok et al., in a study of 298 Chinese pregnant women, reported that over 80% of women and their partners worried about the adverse effects of sexual activity on the fetus [6].

Changes in the body image developed as pregnancy progresses. This change has an important influence on women's perception of pregnancy and sexuality. Pauls et al. reported an impairment in body image in pregnant women, although it did not significantly change during the pregnancy period [11]. In our study, 41.5% of the women felt less attractive. However, 75% did not report diminished sexual interest from their partner.

Bogren [7] found that sexual satisfaction declined during pregnancy, 35%, 30%, and 56% in the first, second, and third trimesters, respectively. We did not analyze this parameter over time, although 27.7% referred a decrease in sexual satisfaction compared with the period before pregnancy. In our study, sexual desire was described to be maintained (38.8%) or declined (32.5%). Other authors have reported a more significant decrease in sexual desire. Shojaa et al. [15] found a reduction in 73% of the 51 women studied, and Bartellas et al. [2] found a reduction in 58% of the 141 analyzed women.

Erol et al., who analyzed 589 healthy women, demonstrated that decrease in sexual function and sexual desire, most commonly found in the third trimester, was not associated with lower androgen hormone (testosterone, dehydroepiandrosterone sulphate, free testosterone) levels [24].

Concerning sexual dysfunctions, almost one-quarter of women reported sexual dysfunctions, such as low desire, dyspareunia, anorgasmy, and difficulty in lubrication; many complained of more than one sexual dysfunction. However, only 11.1% of women felt the necessity to discuss sexuality with their doctors. As Bartellas et al. found, the majority of women was not always comfortable raising this topic with doctors [2].

Our population seems to have good expectations about their sexual lives during the first 6 months postpartum, although published data suggest a decrease in sexual life [8–11,25–29], especially in women who were breastfeeding [30]. In a review, Reamy and White pointed some reasons to explain it: episiotomy discomfort, fatigue, vaginal bleeding, discharge, dyspareunia, decreased lubrication, fear of awakening the baby or not hearing him/her, fear of injury, and decreased sense of attractiveness [31]. An increase in sexual dysfunctions during the postpartum period compared with pre-pregnancy is also described [26,31,32]. Mostly, dyspareunia occurs in women with assisted (vacuum extraction or forceps) vaginal deliveries [33,34], particularly if they had an episiotomy, perineal lacerations

[33,35], or anal sphincter lacerations [29]. There is a positive correlation between dyspareunia and perineal lacerations degree [33]. Despite these results, overall sexual dysfunction of men was not affected by their partners' parity and mode of delivery [36].

There are some limitations in our study. We only assessed sexual activities among women who participate voluntarily in the study, and many women refused to enroll. People are not used to talk about their sexual lives, and many taboos persist in our population, which are evidenced by the number of women who did not answer some questions of the questionnaire. In the question about the types of sexual activities, we decided not to specify whether oral sex was performed by man or woman, as we felt that our population was not prepared to answer this question, based on negative feedback from the pilot study. As most sexuality researchers, another limitation of our study is the fact that the data were self-reported and we did not confirm the information with partners. Moreover, some bias could be found as it is a retrospective study and we did not use a validated questionnaire.

As Basson explained, many interpersonal, personal, psychological, and biological factors cause sexual dysfunctions [37]. A lot of these factors change inevitably during pregnancy, explaining the rise of sexual dysfunction as pregnancy progresses. Changes in couple relationship, marital adjustment, developing a parental relation or consolidating a previous one, planned/unplanned and desired/undesired pregnancy, first pregnancy, history of previous pregnancies or abortions, physical and hormonal changes that can promote low self-image, mood instability, difficulty and discomfort in performing vaginal sex, modifications on neurotransmitters' concentrations, and so on may all influence the sexual life of the couple in pregnancy.

Doctors play an important role and should counsel all couples during prenatal care and pregnancy follow up. They should inform that physiological and hormonal changes may promote fluctuations in sexual desire and satisfaction, and, consequently, in sexual performance, as we know that couples who are experiencing sexual problems are more likely to discontinue sexual activity. Also, it is essential to reassure that sex is safe in healthy pregnancies and could be done until the end of that period, and that it does not necessarily have to be finished with a vaginal intercourse. This information may decrease anxiety, and enhance couple relationship stability and sexual satisfaction. Furthermore, this attitude increases empathic confidence that can contribute to the couple looking for clinical management when and if needed.

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