

# The Role of Pregnancy Awareness on Female Sexual Function in Early Gestation

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## ABSTRACT

**Introduction.** Female sexual function is negatively influenced by pregnancy due to the physical and emotional changes. Although the most significant effect is seen in the third trimester of pregnancy, a considerable decrease in the frequency of intercourse and sexual desire in the first trimester has also been shown.

**Aim.** To investigate the factors that affect sexuality in early pregnancy and the impact of awareness of pregnancy on female sexual function in the first trimester of pregnancy using two self-reported questionnaires.

**Methods.** In this cross-sectional study, 130 healthy, married pregnant women who were admitted to the Gynecology Clinic between the 4th and 10th week of gestation were asked to complete a self-administered questionnaire and the Female Sexual Function Index (FSFI).

**Main Outcome Measures.** The factors associated with FSFI score and monthly sexual activity frequency in the first trimester, as well as the differences in sexual activity frequency and FSFI scores between the women who were previously aware of their pregnancy and those who were yet unaware of their pregnancy.

**Results.** Women who were unaware of their pregnancy had significantly higher coitus frequency in comparison with the aware group ( $P = 0.002$ ). Total FSFI score was  $21.99 \pm 8.13$  in the aware group and  $24.66 \pm 3.76$  in the unaware group ( $P = 0.02$ ). None of the obstetric and sociodemographic variables had an influence on desire and pain scores. Arousal, lubrication, and satisfaction scores were adversely affected by awareness of pregnancy. Orgasm scores were influenced negatively by awareness and positively by love marriage; however, in multivariate linear regression analysis none of these were defined as independent factor for orgasm scores. Overall FSFI scores and monthly frequency of sexual activity were only affected by awareness.

**Conclusion.** The results of this study suggest that in early gestation, awareness of pregnancy is associated with lower female sexual function. Furthermore, obstetric and sociodemographic factors seem to be ineffective on sexual function in early pregnancy. **Corbacioglu A, Bakir VL, Akbayir O, Cilesiz Goksedef BP, and Akca A. The role of pregnancy awareness on female sexual function in early gestation. J Sex Med 2012;9:1897–1903.**

**Key Words.** Sexuality; Female Sexual Dysfunction; Pregnancy; Early Gestation; First Trimester

## Introduction

Female sexual dysfunction refers to any problem that may be encountered in the interruption of normal sexual functioning at one or more points in the sexual response cycle [1]. Some form of sexual dysfunction is experienced by as many as 40% to 45% women in their lifetime [2]. Female sexual dysfunction consists of four major categories: desire disorders (lack of desire

before or during sexual activity), arousal disorder (lack of subjective arousal sensation or physical signs such as vasocongestion and lubrication), orgasmic disorder (inability to experience orgasm), and dyspareunia (pain experienced during vaginal penetration or intercourse) [1].

With the aim of investigating female sexual function, several sexual inventories have been used in two main formats as structured interview [3] or self-assessment questionnaire [4–6]. One of the

most frequently applied questionnaires for this purpose is the Female Sexual Function Index (FSFI) which enables the evaluation of the key dimensions of female sexual function by its six-domain structure including desire, subjective arousal, lubrication, orgasm, satisfaction, and pain [7]. Furthermore, it has been shown to be a reliable and validated measure of female sexual function when it is used among the Turkish population [8].

It is known that female sexual function is negatively influenced by pregnancy due to the physical and emotional changes [3,9–11]. Although the most significant effect is seen in the third trimester of pregnancy, a considerable decrease in the frequency of intercourse and sexual desire in the first trimester has also been shown by several studies [3,6,9,12]. Some of the known reasons of this decline are fatigue, emotional lability, nausea and vomiting, and sore breasts [1]. Aside from the physical changes, emotional alterations and the fear of miscarriage are significant factors that influence the sexual behavior of couples in this period [1]. Furthermore, the loss of interest, the change in body image, the perceived lack of attractiveness, and the decrease in self-esteem contribute to sexual dysfunction during pregnancy [9,10,13]. Although the impact of pregnancy on sexual function has been widely investigated, the data regarding the factors that affect sexuality in the first trimester are limited to only one study [14].

First trimester is the transitional period during which pregnancy becomes a reality and many conflicting emotions, such as feelings of both gratification and anxiety arise. Once the pregnancy is confirmed, woman becomes the center of attention and focuses her energies on the changes she is experiencing and new responsibilities she will face [15]. Thus, emotional, cultural, and social influences start to play an important role when the pregnancy is realized, whereas only physical and hormonal factors can influence women's life who are yet not aware of their pregnancy. For this reason, it is not unlikely that awareness of pregnancy has adverse effects on sexuality in early gestation. In addition, we hypothesized that the other factors such as obstetric history or social and cultural features might play a significant role on female sexual function in this period.

In this study we aimed to investigate the factors that affect sexuality in early pregnancy and the impact of awareness of pregnancy on female sexual function in the first trimester of pregnancy using two self-reported questionnaires.

## Material and Method

This cross-sectional study was conducted between December 2010 and April 2011 in Istanbul Kanuni Sultan Suleyman Research and Teaching Hospital after approval by the local ethics committee. Healthy married pregnant women who admitted to the Gynecology Clinic between the 4th and 10th week of gestation were included in this study. The exclusion criteria were: (i) women with any obstetric complications such as vaginal bleeding or threatened abortion; (ii) those who were advised to avoid coitus by a physician; and (iii) the women who conceived by any ovulation induction method or assisted reproduction technique. After the study protocol was explained and a written informed consent was obtained, all eligible volunteers were asked to complete a self-administered questionnaire in a private room. One of the authors was available when participants needed further explanation about the questions. Collected data were evaluated by categorizing the participants into two groups: the women who were previously aware of their pregnancy (aware group) and those who were yet unaware of their pregnancy (unaware group).

The first questionnaire was designed to gather information on demographic characteristics such as age, education level, employment status, the duration of marriage, financial situation, the type of marriage (love or arranged marriage), and smoking status. Also, the subjects were asked to report the person that took the sexual initiative (male, female, or both partners) and the frequency of intercourse within the last 4 weeks. In addition, the women in the aware group were asked to report their opinion regarding the influences of sexual activity on pregnancy. The second part included the FSFI made up of 19 items [7]. Score ranges from 0 to 5 for each question except for the items 1, 2, 15, and 16 in which score ranges from 1 to 5. The total score is the sum of responses to each item multiplied by a factor specific to the domain [7].

Statistical analyses were carried out using the Statistical Package for the Social Sciences, version 15.0 (SPSS, Chicago, IL, USA). Student's *t*-tests were used for comparisons for normally distributed variables, and the Mann-Whitney *U*-test was used for categorical variables. The factors associated with the six domains of sexual function including desire, arousal, lubrication, orgasm, satisfaction, and pain, overall FSFI score, and monthly sexual activity frequency in the first trimester were investigated by multiple linear regression analysis.

**Table 1** Demographic characteristics of participants by the awareness of pregnancy

	Total	Aware (N = 57)	Unaware (N = 63)	P*
Maternal age, year (mean ± SD)	26.7 ± 5.2	26.7 ± 5.6	26.7 ± 4.6	0.98
Age of partner, year (mean ± SD)	30.80 ± 5.1	30.33 ± 5.1	31.22 ± 5.3	0.34
Gestational age, day (mean ± SD)	47.03 ± 8.93	54.40 ± 9.44	39.66 ± 8.33	0.08
Parity (median, range)	0 (0–3)	0 (0–3)	0 (0–3)	0.96
Abortion (median, range)	0 (0–4)	0 (0–3)	0 (0–4)	0.17
Duration of marriage, N (%)				0.30
<5 years	76 (63.3)	40 (70.2)	36 (57.1)	
5–10 years	32 (26.7)	13 (22.8)	19 (22.8)	
>10 years	12 (10.0)	4 (7.0)	8 (12.7)	
Educational level, N (%)				0.56
0–8 years	75 (62.5)	38 (66.7)	37 (58.7)	
9–11 years	36 (30.0)	16 (28.1)	20 (31.7)	
>11 years	9 (7.5)	3 (5.3)	6 (9.5)	
Employment status, N (%)				0.04
Employed	29 (24.2)	9 (15.8)	20 (31.7)	
Unemployed	91 (75.8)	48 (84.2)	43 (68.3)	
Family income, N (%)				0.30
Low	60 (50.0)	31 (54.4)	29 (46.0)	
Moderate	58 (48.3)	26 (45.6)	32 (50.8)	
High	2 (1.7)	0 (0.0)	2 (3.2)	
Marriage type, N (%)				0.07
Love marriage	50 (41.6)	28 (49.1)	22 (34.9)	
Arranged marriage	70 (58.4)	29 (50.9)	41 (65.1)	
Smoking status, N (%)				0.09
Current smokers	27 (22.5)	9 (15.8)	18 (28.6)	
Nonsmokers	93 (77.5)	48 (84.2)	45 (71.4)	

\* $P < 0.05$  was considered significant.  
SD = standard deviation

A  $P$  value of  $<0.05$  was considered statistically significant.

## Results

A total of 130 eligible women were invited to participate and 122 completed the questionnaire at a response rate of 93.8%. Two questionnaires were excluded due to incomplete data. We evaluated a total of 120 women and the number of women who were previously aware of their pregnancy was 57 (47.5%). The mean gestational age of women was  $26.7 \pm 5.2$ . The comparison of the demographic characteristics of participants by the awareness of pregnancy is summarized in Table 1. Fifty-seven women were previously aware of pregnancy (aware group), while 63 women were yet unaware of pregnancy. The groups were significantly different based on employment status ( $P = 0.04$ ), with a larger proportion of employee in the unaware group. The other demographic variables were not significantly different between the two groups.

Table 2 compares the sexual activity frequency and behavior between the two groups. Women who were unaware of their pregnancy had significantly higher coitus frequency in comparison with the aware group ( $P = 0.002$ ). While mostly both of

the couples initiated sexual activity in the aware group, male partners were more likely to take the initiative in the unaware group. However, there were no significant differences between these groups. Twenty-six (45.6%) women in the aware group declared that they were concerned about the adverse effects of sexual activity on pregnancy. Seven (12.3%) of them avoided intercourse due to the fear of miscarriage and hurting the fetus.

Total FSFI score was  $21.99 \pm 8.13$  in the aware group and  $24.66 \pm 3.76$  in the unaware group ( $P = 0.02$ ). Desire and pain scores were not significantly different between the two groups ( $P = 0.87$ ).

**Table 2** Sexual activity and behavior by awareness of pregnancy

	Aware (N = 57)	Unaware (N = 63)	P*
Frequency, N (%)			0.002
None	7 (12.3)	0 (0)	
Once a month	4 (7.0)	2 (3.2)	
Twice a month	6 (10.5)	5 (7.9)	
Once a week	19 (33.3)	11 (17.5)	
Twice a week	13 (22.8)	23 (36.5)	
$\geq 3$ times a week	8 (14.0)	22 (34.9)	
Sexual initiative, N (%)			0.42
Male	24 (42.1)	33 (52.4)	
Female	1 (0.9)	2 (3.2)	
Both	32 (56.1)	28 (44.4)	

\* $P < 0.05$  was considered significant.

**Table 3** Total and domain Female Sexual Function Index scores by the awareness of pregnancy (mean ± SD)

	Aware (N = 57)	Unaware (N = 63)	P*
Desire	3.43 ± 1.08	3.46 ± 1.05	0.87
Arousal	3.31 ± 1.57	3.90 ± 0.82	0.01
Lubrication†	3.90 ± 1.66	4.41 ± 0.77	0.03
Orgasm	3.70 ± 1.68	4.26 ± 1.06	0.02
Satisfaction	4.07 ± 1.58	4.73 ± 0.92	0.006
Pain	3.63 ± 1.83	4.01 ± 1.51	0.21
Total†	21.99 ± 8.13	24.66 ± 3.76	0.02

\*P < 0.05 was considered significant.  
 †Mann-Whitney U-test was used because scores were not normally distributed in the population.  
 SD = standard deviation

and 0.21, respectively). Arousal, lubrication, orgasm, and satisfaction scores were significantly lower when women were previously aware of their pregnancy (P = 0.01, 0.03, 0.02, and 0.006, respectively) (Table 3).

Table 4 shows univariate analysis for obstetric and sociodemographic variables. No factor had an influence on desire and pain scores. Arousal, lubrication, and satisfaction scores were adversely affected by awareness of pregnancy (−0.23, P = 0.01 and −0.19, P = 0.03 and −0.25, P = 0.006, respectively). Orgasm scores were affected negatively by awareness (−0.19, P = 0.02) and positively by love marriage (0.19, P = 0.03); however, in multivariate linear regression analysis none of these were defined as independent factor for orgasm scores (−0.17, P = 0.06 and 0.16, P = 0.09, respectively). Overall FSFI scores and monthly frequency of sexual activity were adversely affected by only awareness (−0.21, P = 0.02 and −0.36, P = 0.0001, respectively).

**Discussion**

Sexuality during pregnancy is influenced by physical, hormonal, psychological changes as well as social and cultural factors [11]. Changes in couple relationship, marital adjustment, developing a parental relation, history of previous pregnancies and abortions, low self-image, and mood instability are all important factors for the sexual function during pregnancy [11]. Even though physical and hormonal changes start to be effective on sexual function from the beginning of gestation, social and emotional factors may have a role on sexual dysfunction only after a woman get aware of her pregnancy. Therefore, the authors hypothesized that the women who were yet unaware of their pregnancy would have better sexual function than the other women who were previously aware of

**Table 4** Obstetric and sociodemographic variables related with each Female Sexual Function Index (FSFI) domain score, overall FSFI score, and sexual activity frequency during the first trimester according to linear regression analysis

	Factors	Beta†	SE	P*
Desire	Awareness	−0.01	0.19	0.87
	Love marriage	0.07	0.19	0.43
	<5 years marriage	−0.14	0.20	0.11
	<8 years education	−0.07	0.20	0.39
	Low income	0.08	0.19	0.34
	Employed	−0.02	0.22	0.80
	Parous	0.05	0.26	0.68
Arousal	Having abortion	−0.17	0.30	0.16
	Awareness	−0.23	0.22	0.01
	Love marriage	0.17	0.23	0.06
	<5 years marriage	−0.06	0.24	0.46
	<8 years education	0.07	0.24	0.44
	Low income	0.03	0.23	0.67
	Employed	0.03	0.27	0.71
Lubrication	Parous	0.00	0.33	0.99
	Having abortion	−0.11	0.38	0.37
	Awareness	−0.19	0.23	0.03
	Love marriage	0.11	0.24	0.21
	<5 years marriage	−0.13	0.24	0.15
	<8 years education	0.01	0.24	0.88
	Low income	−0.01	0.23	0.86
Orgasm	Employed	0.08	0.27	0.35
	Parous	0.05	0.35	0.68
	Having abortion	−0.18	0.40	0.13
	Awareness	−0.19	0.25	0.02
	Love marriage	0.19	0.25	0.03
	<5 years marriage	−0.00	0.26	0.95
	<8 years education	−0.00	0.26	0.98
Satisfaction	Low income	0.12	0.25	0.18
	Employed	−0.05	0.30	0.57
	Parous	−0.10	0.37	0.38
	Having abortion	−0.13	0.42	0.28
	Awareness	−0.25	0.23	0.006
	Love marriage	0.11	0.24	0.23
	<5 years marriage	−0.07	0.25	0.39
Pain	<8 years education	0.03	0.24	0.71
	Low income	0.02	0.24	0.79
	Employed	0.08	0.28	0.34
	Parous	−0.00	0.34	0.95
	Having abortion	−0.14	0.39	0.24
	Awareness	−0.11	0.30	0.21
	Love marriage	0.72	0.31	0.43
Total	<5 years marriage	−0.04	0.32	0.62
	<8 years education	−0.00	0.32	0.94
	Low income	−0.01	0.31	0.88
	Employed	−0.01	0.36	0.91
	Parous	0.16	0.42	0.17
	Having abortion	−0.09	0.49	0.44
	Awareness	−0.21	1.14	0.02
Frequency	Love marriage	0.13	1.17	0.12
	<5 years marriage	−0.90	1.20	0.30
	<8 years education	−0.01	1.20	0.89
	Low income	0.03	1.16	0.73
	Employed	0.02	1.36	0.76
	Parous	0.02	1.72	0.82
	Having abortion	−0.16	1.97	0.18
Overall FSFI	Awareness	−0.36	0.67	0.0001
	Love marriage	0.08	0.73	0.35
	<5 years marriage	−0.16	0.74	0.08
	<8 years education	0.10	0.74	0.24
	Low income	0.06	0.72	0.49
	Employed	0.09	0.84	0.31
	Parous	−0.02	0.97	0.81
Having abortion	−0.08	1.13	0.52	

\*P < 0.05 was considered significant.  
 †Standardized beta  
 SE = standard error



their situation. With this aim, FSFI scores and sexual activity frequency between the two groups of women were compared in this study. The findings showed a significantly lower sexual activity frequency and FSFI score in the aware group supporting the hypothesis. Furthermore, it was not unlikely that some of obstetric and social variables might have influence on sexual function during the first trimester of gestation. However, in contrast to our hypothesis, the factors other than awareness of pregnancy did not play a role in sexuality in this period.

Gokyildiz and Beji reported that aside from the decline in the frequency of intercourse, there was a significant decrease in sexual satisfaction and desire in the first trimester compared with the prepregnancy period [3]. Uwapusitanon and Choobun also reported a dramatic decline in arousal and orgasm in this period of pregnancy [16]. However, Polomeno stated that some women might discover that sexual desire improves in the early pregnancy, particularly if it was absent or at a lower level before pregnancy [17]. This improvement was explained by the necessity to be loved in this transitional period during which many emotional changes are experienced [17]. Different from these studies, we did not compare sexual function during the prepregnancy period with the early gestation, but we examined whether the sexual function domains would differ between the women who were previously aware of pregnancy and those who were yet unaware of their situation. We found that orgasm, arousal, satisfaction, and lubrication scores were significantly lower in the aware group, whereas desire and pain score differences were not statistically significant.

As there are a few studies regarding the variables that affect sexuality in pregnancy, we focused on the factors that influence sexual activities and function in the early pregnancy. Awareness was the only factor that significantly affected sexual activity frequency and sexual function scores. Love marriage also positively affected the orgasm score, but it was not an independent variable. By contrast, Eryilmaz et al. reported a positive correlation between changes in sexual life during pregnancy and the duration of marriage, parity, and education [18]. Moreover, Chang et al. in their survey of 663 women also reported that discomfort, infertility, and college education had a negative effect on both overall sexual function and sexual activity [14]. The different findings of our study might be due to the fact that our sample only included women in early gestation with no infer-

tility problems. Moreover, our data showed that the percentage of employed women was higher in the unaware group. This might be a consequence of the differences in priorities of employed and unemployed women, since tough working conditions may prevent the employed women to notice the missed menstrual period or early pregnancy symptoms. However, employment status did not have any effect on sexual function in the early pregnancy period.

Social and emotional influences might be more prominent in the first pregnancy since a transition takes place from being a couple to becoming a family, and from being a person in a relationship to motherhood and fatherhood [19]. For this reason, we researched whether parity would affect female sexual function in the first trimester. Parity had no influence on domain and total scores of FSFI or sexual activity frequency in our study. This was in agreement with some of the previous reports [4]. However, Fok et al. reported a significant association between reduction in vaginal intercourse and nulliparity [20]. Multiparous women were found to have less orgasm and pain problems [21], while Botros et al. reported increased satisfaction scores among nulliparous women [22]. Furthermore, we considered the history of miscarriage as a possible cause of sexual dysfunction in early pregnancy due to the fear of recurrence of the scenario. Chang et al. in their survey of 663 women reported that having spontaneous abortion adversely affected desire score [14]. However, we could not find a significant association between the history of miscarriage and sexual function scores.

Sexual intercourse is safe during pregnancy in the absence of vaginal bleeding, placenta previa, preterm premature dilatation of cervix and preterm premature rupture of membranes [10]. However, the fears and myths that intercourse results in miscarriage, fetal injury, bleeding, infection, preterm labor play an important role in the female sexual dysfunction during pregnancy [19]. Serati et al. reviewed 48 articles and concluded that concerns about the possible outcomes were the most relevant factor for the avoidance of sexual activity during pregnancy [23]. Fear of sexual intercourse was referred by 23.4% of women in the study of Pauleta et al. [11]. This rate varies between different culture, since in a study of 298 Chinese women Fok et al. reported that 80% of women and their partners worried about the adverse effects of sexual activity [20]. In our cohort 26 (45.6%) women who were previously aware of their pregnancy reported that they were afraid of

harming the pregnancy due to sexual activity and 7 (12.3%) of them avoided sexual intercourse. This seems to be another reason for the negative influence of the awareness of pregnancy on the female sexual function.

The women were asked by whom sexual intercourse was initiated, because it is an indicator of desire and it can be influenced during pregnancy [5]. Sacamori and Cardoso investigated sexual initiative in 156 pregnant Brazilian women and reported that both partners usually initiated sexual intercourse before pregnancy, whereas the male partner was more likely to initiate sexual activity during pregnancy [5]. In our study, there was no significant correlation between the initiator and awareness of pregnancy, and this result was in parallel with our findings regarding the desire score which was not different between the two groups.

There are several limitations in this study. Firstly, we did not examine whether the pregnancies of women in the aware group were expected/nonexpected or planned/unplanned. These data might be related with the anxiety of the couple which would also affect female sexual function. The other was the lack of data regarding physical discomfort of the patients such as nausea, vomiting, sore breast, or fatigue. This might have caused bias since these factors are shown to be effective in the sexuality during the first trimester of pregnancy [14]. However, gestational age is strongly related with these symptoms and there was no significant difference in gestational age between the two groups of participants. Furthermore, as this was not a longitudinal study, the results might be affected by the prepregnancy status of the women. Finally, even though sexuality is affected by man's emotions and behaviors as well as the woman's, we were not able to evaluate the male partners, because most of them did not accompany their partners to the follow-up visits. We believe that further studies may be enriched by the inclusion of male partners in the survey.

## Conclusions

In this study we evaluated the relationship between awareness of pregnancy and female sexual function, and we investigated the factors that affect sexuality in early pregnancy. The results showed a significantly lower sexual activity frequency and FSFI score in women who were previously aware of their pregnancy compared with those who were yet unaware. Moreover, awareness was the only variable that had a significant influence on sexual

intercourse frequency and FSFI scores in the first trimester of pregnancy. This is the first study that investigated the impact of awareness of pregnancy on sexual function in the first trimester, and we believe that it will provide gynecologists, sex therapists, and psychologists with an increased knowledge regarding sexual dysfunction in early pregnancy leading them to understand their patients better. From our point of view, sexual counseling might help to overcome female sexual dysfunction more effectively, as the factors leading to dysfunction are clarified. However, further studies that involve male partners are needed for more accurate results. Also, the contribution of pregnancy-induced physical alterations (nausea, fatigue, and sore breasts) to the sexual dysfunction during the first trimester might be investigated.

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*Conflict of Interest:* We declare that there is no conflict of interests.

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## References

- 1 Mutagh J. Female sexual function, dysfunction, and pregnancy: Implications for practice. *J Midwifery Womens Health* 2010; 55:438–46.
- 2 Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States: Prevalence and predictors. *JAMA* 1999;281: 537–44. Erratum in *JAMA* 1999;281:1174.
- 3 Gokyildiz S, Beji NK. The effects of pregnancy on sexual life. *J Sex Marital Ther* 2005;31:201–15.

- 4 Naldoni LMV, Pazmino MAV, Pezzan PAO, Pereira SB, Duarte G, Ferreira CHJ. Evaluation of sexual function in Brazilian women. *J Sex Marital Ther* 2001;37:116–29.
- 5 Sacamori C, Cardoso FL. Sexual initiative and intercourse behavior during pregnancy among Brazilian Women: A retrospective study. *J Sex Marital Ther* 2010;36:124–36.
- 6 Bartellas E, Crane JMG, Daley M, Bennet KA, Hutchens D. Sexuality and sexual activity in pregnancy. *BJOG* 2000;107:964–8.
- 7 Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, Ferguson D, D'agostino R. The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther* 2000;26:191–208.
- 8 Aygin D, Aslan FE. The Turkish adaptation of the Female Sexual Function Index. *J Med Sci* 2005;25:393–9.
- 9 Aslan G, Aslan D, Kizilyar A, Ispahi C, Esen A. A prospective analysis of sexual functions during pregnancy. *Int J Impot Res* 2005;17:154–7.
- 10 von Sydow K. Sexuality during pregnancy and after childbirth: A metacontent analysis of 59 studies. *J Psychosom Res* 1999;47:27–49.
- 11 Pauleta JR, Pereira NM, Graça LM. Sexuality during pregnancy. *J Sex Med* 2010;7:136–42.
- 12 Liete AP, Campos AA, Dias AR, Amed MA, De Souza E, Camano L. Prevalence of sexual function during pregnancy. *Rev Assoc Med Bras* 2009;55:563–8.
- 13 Orji EO, Ogunlola IO, Fasubaa OB. Sexuality among pregnant women in South West Nigeria. *J Obstet Gynaecol* 2002;22:166–8.
- 14 Chang SR, Chen KH, Lin HH, Yu HJ. Comparison of overall sexual function, sexual intercourse/activity, sexual satisfaction, and sexual desire during the three trimesters of pregnancy and assessment of their determinants. *J Sex Med* 2011;8:2859–67.
- 15 Miller WH. The male perspective. In: Stewart DE, Stotland NL, eds. *Psychologic aspects of women's health care: The interface between psychiatry and obstetrics and gynecology*. Washington DC: American Psychiatric Press; 1993:375–89.
- 16 Uwapusitanon W, Choobun T. Sexuality and sexual activity in pregnancy. *J Med Assoc Thai* 2004;87(3 suppl):S45–48.
- 17 Polomeno V. Sex and pregnancy: A perinatal educator's guide. *J Perinat Educ* 2000;9:15–27.
- 18 Eryilmaz G, Ege E, Zincir H. Factors affecting sexual life during pregnancy in eastern Turkey. *Gynecol Obstet Invest* 2004;57:103–8.
- 19 Johnson CE. Sexual health during pregnancy and the postpartum. *J Sex Med* 2011;8:1267–84.
- 20 Fok WY, Chan LY, Yuen PM. Sexual behavior and activity in Chinese women. *Acta Obstet Gynecol Scand* 2005;84:934–8.
- 21 Witting K, Santilla P, Alanko K, Harlaar N, Jern P, Johansson A, Von Der Pahlen B, Varjonen M, Algars M, Sandnabba NK. Female sexual function and its associations with number of children, pregnancy and relationship satisfaction. *J Sex Marital Ther* 2008;34:89–106.
- 22 Botros SM, Abramov Y, Millar JJ, Sand PK, Gandhi S, Nickolov A, Goldberg RP. Effect of parity on sexual function. *Obstet Gynecol* 2006;107:765–70.
- 23 Serati M, Salvatore S, Siesto G, Cattoni E, Zanirato M, Khullar V, Cromi A, Ghezzi F, Bolis P. Female sexual function during pregnancy and after childbirth. *J Sex Med* 2010;7:2782–90.