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Fears, Beliefs and Practices of Pregnant Women in Saudi Arabia regarding their Sexual Health during Pregnancy and after Birth

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ABSTRACT

Background: A woman's sexual life during pregnancy is subject to many physiological and psychological changes. In this regard, there are inconsistencies in some aspects, while some are yet to be explored. This study aimed to obtain a detailed account of the fears, beliefs and practices of pregnant women and their associated factors in Saudi Arabia regarding their sexual life during pregnancy and after birth.

Methods: A convenience sample of pregnant women (n=439) attending antenatal clinics at purposefully selected hospitals completed a self-report questionnaire of her fears, beliefs and practices regarding her sexual life during pregnancy. This was a cross-sectional study performed by a team of researchers at King Khalid University Hospital from August 2021 to August 2022.

Results

The majority of the pregnant women recorded

- A decrease in libido
- That Kegel exercises improved sexual function
- That vaginoplasty is important after vaginal delivery
- Fear of dyspareunia, vaginal laxity, and changes in the sexual relationship
- Dependence on unverified sources for information regarding female sexual issues.

A large proportion of the participants

- Thought that delivery-related vaginal laxity needed medical consultation
- Thought that vaginal laxity was associated with episiotomy
- Relied on traditional herbs for managing sexual health issues.

Among pregnant women in Saudi Arabia, sexual health-related fears, attitudes and practices were associated with age, marital status and educational level, and participants relied on past experience and social media for information.

Conclusion: Decreased libido and painful intercourse are common among pregnant women regardless of parity. Sexual health concerns and education should be part of antenatal care visits.

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Background

The World Association of Sexual Health (WAS) is striving to develop an evidence-based consensus declaration by experts to advance sexual pleasure as a tool of pushing the goal of holistic sexual health. Naturally, pregnant women and their primary account about their sexual health should be the driver of a patient-centered approach to explore, develop and manage their health and wellbeing in a comprehensive manner [1]. In this regard, most of the stakeholders involved in maternity health policy focus on understanding the various dimensions of the psychophysiological health and wellbeing of pregnant women [1,2]. The available evidence shows that maternal health during the pregnancy and postpartum periods is multidimensional, including psychosexual and psychosocial facets [2]. Furthermore, most of

these experiences may be unique and dependent on pregnancy status (being pregnant or in the postpartum period). In the modern world, in which the fertility rate is decreasing, an increasing number of women are expected to navigate these pregnancy/postpartum periods less frequently during their life span. Taken together, all these considerations and more extensive and diligent research efforts are continuously needed to collect, document, and address pregnant women's sexual health perspectives from all possible dimensions [3]. Such efforts may be more required in the developing world, especially those societies from which scientifically documented literature is in its growth phase [4].

An Italian study investigating the impact of the different modes of delivery on women's sexuality found that poor postpartum sexuality was associated with operative vaginal delivery [5]. A study of women in the UK found that sexual dysfunction incidences increased after delivery and that painful intercourse was associated with vaginal delivery. Furthermore, the study highlighted the need to address areas of unexplored and unrealized health and well-being of pregnancy and postpartum-related sexuality [6]. A longitudinal study found that there were time-related differences and distinctness in sexual health perspectives among US women after delivery. At 4 months post-delivery, postpartum women were worried about the resumption of sexual intercourse, conception prevention, and the impact of postpartum healing on the sexual relationship. However, at 12 months postpartum, women were worried about body image and decreased libido with respect to their partners [7]. An Australian study reported that the prevalence of sexual dysfunction and women reporting sexual dissatisfaction was very high in the year following delivery [8]. A South American study from Brazil reported that contrary to the findings of Barbara et al. in Italian women, the mode of delivery does not affect sexual life. Furthermore, the study highlighted the need to explore other aspects of sexual problems after childbirth [9]. Another Brazilian study concluded that sexual dysfunction during pregnancy was reported by a higher proportion of women, a finding similar to the Australian study finding for postpartum women. Apart from these, decreased libido, painful intercourse, and sexual dissatisfaction were major concerns during pregnancy [10].

An Iranian study reported, contrary to the findings of Barbara et al. in Italian women but similar to those of Faisal-Cury et al, 2015, in Brazil, that the mode of delivery (vaginal vs. cesarean) does not affect the sexual outcome [5,9,11]. Similarly, a study from Africa of Egyptian women showed no association between mode of delivery and postpartum sexual dysfunction [12]. Another study from northern Africa of Tunisian women found that major postpartum sexual problems constituted desire disorders in 31% of women, vaginal lubrication in 31% of women, painful intercourse in 14% women, and decreased sexual satisfaction in 33% of women. Moreover, suggestive factors behind these sexual problems may include a host of problems such as vaginal delivery, breastfeeding, body image disturbances, fatigue, and lack of availability [13]. A study of Nigerian women reported a high proportion of pregnant women reporting decreased sexual activity, which they attributed to factors such as nausea and vomiting, fatigue, fear of miscarriage, fear of hurting the fetus, physical awkwardness, lack of interest and discomfort during pregnancy [14]. A study of Saudi women found that there was no significant sexual dysfunction among pregnant and nonpregnant women [15]. This is contradictory to the reports of higher sexual dysfunction among Brazilian women during pregnancy, as well as to the higher sexual dysfunction among Australian women postpartum [8,10,15]. However, a study of Saudi women showed that there was a notable decrease in sexual function as pregnancy progressed.

According to the available evidence accumulated based on previous works from across the world, there are major areas of disagreement about the impact of mode of delivery on sexual life, differences in the prevalence of sexual dysfunction among pregnant and nonpregnant women, unexplored aspects of predictors/associated factors of sexual health concerns, and practices related to the management of pregnancy-related sexual health changes. All this highlights the importance of concerted and continuous efforts to further explore the sexual health of pregnant and postpartum women. Therefore, in this study, we aimed to investigate the fear, beliefs and practices of pregnant women in Saudi Arabia toward their sexual life during pregnancy and after birth.

Methods

Participants and Procedures

We performed a cross-sectional descriptive and analytic observational study with a conveniently selected sample of residents in Riyadh, Saudi Arabia. The study was conducted by a team of researchers at King Khalid University Hospital from August 2021 to August 2022. The target population comprised pregnant and/or postpartum residents in Riyadh, and the accessible population was the portion of the target population that visited the antenatal clinics of the selected hospitals in the Riyadh region during the study period to access healthcare. The hospitals were selected based on convenience and accessibility. The inclusion criteria were currently/previously pregnant or postpartum women visiting the antenatal clinics of the selected hospital. The exclusion criteria were women with no prior/current pregnancy. Eligible women were informed about the study's objectives and procedures and requested to provide their informed consent. The informed consent was obtained verbally from the participants. Then patients received the written consent on the first page of the questionnaire. Finally, a total of four hundred thirty-nine respondents completed this online survey study involving a questionnaire to assess the fears, attitudes, and beliefs of pregnant women toward their sexual lives during pregnancy and after childbirth and a sociodemographic tool. All the questionnaires were presented in one of two languages: Arabic or an English translation. The study was approved by the institutional human ethics committee, King Saud University, IRB Approval of Research Project No. E-21-6189. All the procedures conformed with principles of good practice and compliance with the Declaration of Helsinki, 2013.

Measures and Ethical Considerations

Fears, Attitudes, and Beliefs of Pregnant Women Regarding Their Sexual Health During Pregnancy and After Child Birth

The study used a newly developed questionnaire to assess the fears, attitudes, and beliefs of pregnant women regarding their sexual life during pregnancy and after childbirth. The questionnaire also had items to explore pregnant and postpartum women's knowledge and attitudes toward vaginoplasty and episiotomy.

The questionnaire had 25 items: four dichotomous questions, 17 Likert scale questions, three open-ended questions, and one question with five distinct options. The responses to the four dichotomous questions were recorded as either 'yes/no' or 'actual drop/just an inner feeling'. The responses to the Likert scale questions were recorded as 'agree', 'I do not know', 'neutral', or 'disagree'. Recording of a response to one of the three open-ended questions was optional. The question with five distinct options explored the source of information regarding female sexual and vaginal changes throughout pregnancy and after birth. The questionnaire is available in the supplemental file. The face validity and content validity of the questionnaire were agreed upon by two independent consultants at the Department of Gynecology

and Obstetrics, College of Medicine, King Saud University.

Ethical Considerations

Appropriate and strict provisions were made to maintain the confidentially of the data. The data were explored only for the purposes described in the study objectives. Each patient's personal information was kept on the author's computer with a password, and the patients' names were anonymized.

Statistical Analysis

All the survey data were downloaded from the online platform in the .csv format and transferred to SPSS (version 23.0) for further cleaning and analysis. Descriptive presentations have been made using frequency and percentage. Inferential statistics were presented using the chi-square test of group differences across age groups, marital status, and educational level. A cut-off value of 0.05 was taken to indicate the significance level.

Results

Participant's Characteristics

The majority of the participating pregnant women (52.4%) were 26-35 years old (Table 1), and almost all participants were Saudi (95%). A small proportion of the pregnant women were not sexually active currently (5.5%). A total of 75.6% of the participants had children. The majority of the participating pregnant women (72.4%) had a high level of education (67.4%). Almost half of the pregnant women in the study reported a decrease in sexual activity during pregnancy (51.5%) (Table 1). The majority of our participants had their information from their past experience (39.4%) or social media (42.8%), and only 29% received information from their doctors. (Table 1).

Table 1: Participant Characteristics

Characteristics	N (%)
Hospital	
Private	120 (27.3%)
Government	196 (44.6%)
Others/not-specified	123 (28.0%)
Age Groups	
18-25	112 (25.5%)
26-35	230 (52.4%)
36-45	85 (19.4%)
>45	12 (2.7%)
Nationality	
Saudi	417 (95.0%)
Non-Saudi	22 (5.0%)
Marital Status	
Married	415 (94.5%)
Divorced	18 (4.1%)
Widowed	6 (1.4%)
Have Children	
Yes	332 (75.6%)
No	107 (24.4%)
Educational Level	
No education	20 (4.6%)
High school or under	101 (23.0%)
University or higher	318 (72.4%)
Employed	143 (32.6%)
Been Pregnant, Yes	336 (76.5%)
Noticed Decrease in Sexual Activity During Pregnancy	226 (51.5%)

The three major fears among participating pregnant women regarding their sexual health during pregnancy and after birth were painful intercourse after delivery (62.4%), vaginal laxity after delivery (65.1%), and concern about changes in the sexual relationship with the partner throughout pregnancy and after delivery (55.8%).

A total of 47.4% of the pregnant women believed that vaginal delivery would adversely affect their sexual life, and 34.2% preferred cesarean section for better sexual function after delivery (Table 2). The majority of our participants had an episiotomy with vaginal laxity after childbirth; 42.6% thought it would worsen it, and 34.9% thought it would prevent it. The majority of our participants (62%) agreed that Kegel exercises may help improve sexual function (Table 2).

Table 2: Participant Knowledge and Beliefs

	Agree N (%)	Disagree N (%)	Don't Know (%)
Vaginal Delivery Adversely Affects Sexual Performance	208 (47.4)	130 (29.6)	101 (23.0)
Prefer caesarean section over NSVD because NSVD will affect sexual relationship	150 (34.2)	233 (53.1)	56 (12.8)
Partner expressed worries that sexual relationship might be affected after delivery	145 (33.0)	194 (44.2)	100 (22.8)
Less desirable sexually after giving birth	170 (38.7)	209 (47.6)	60 (13.7)
Decreased libido after birth	183 (41.7)	206 (46.9)	50 (11.4)
Painful intercourse after delivery	274 (62.4)	115 (26.2)	50 (11.4)
Vaginal laxity after delivery	286 (65.1)	94 (21.4)	59 (13.4)
Sexual relationship with partner will change throughout pregnancy and after delivery	245 (55.8)	152 (34.6)	42 (9.6)
Overall relationship with partner will be affected in a negative way after delivery	211 (48.1)	193 (44.0)	35 (8.0)
Episiotomy at birth helps decrease vaginal laxity	153 (34.9)	122 (27.8)	164 (37.4)
Episiotomy at birth worsens vaginal laxity	187 (42.6)	79 (18.0)	173 (39.4)
Kegel exercises help improve sexual function	272 (62.0)	43 (9.8)	124 (28.2)

The majority of the participating pregnant women agreed that vaginoplasty was necessary after vaginal delivery and intended to have one done after delivery. A total of 68.1% intended to consult a doctor after delivery regarding vaginal laxity. The majority intended to use natural remedies to improve sexual function (Table 3). Among those who recorded using remedies to improve sexual function, three major remedies were Garden cress (4.3%), Myrrha (4.1%), and Fenugreek (3.9%). The main sources of information for the participating pregnant women regarding their sexual life were past personal experience (39.4%) and social media (42.8%), and only 29% relied on their doctor for such information. (Table 3).

Table 3: Participant Attitudes and Practices

	Agree N (%)	Disagree N (%)	Don't Know (%)
Plan or intend to undergo vaginoplasty after birth or in the future	200 (45.6)	159 (36.2)	80 (18.2)
Vaginoplasty is necessary after vaginal delivery	230 (52.4)	150 (34.2)	59 (13.4)
Partner expressed wish for you to undergo vaginoplasty after delivery	133 (30.3)	250 (56.9)	56 (12.8)
Consultation with a doctor after delivery regarding vaginal laxity is necessary	299 (68.1)	74 (16.9)	66 (15.0)
Use of herbs and/or natural herbs after birth improves sexual function	242 (55.1)	106 (24.1)	91 (20.7)

As shown Tables 4, 5 and 6, the responses to our survey were compared according to different participant characteristics. Pregnant women in the younger age group, 18-25 years of age, had more fear of painful intercourse after delivery than women who were 26-35 years of age ($p = 0.038$). Pregnant women in the older age group, namely, 45+ years, were more likely to see a doctor for vaginoplasty after delivery than those aged 36-45 years ($p = 0.006$) (Table 4).

Table 4: Knowledge and Attitude according to Participant Age

Questions Agree (%)	Age groups N (%)				P Values
	18-25 N=112	26-35 N=230	36-45 N=85	>45 N=12	
Vaginal delivery adversely affects sexual performance	54 (48.2)	106 (46.1)	43 (50.6)	5 (41.7)	0.877
Prefer cesarean section over vaginal delivery because VD will affect sexual relationship	38 (33.9)	77 (33.5)	30 (35.3)	4 (33.3)	0.198
Partner expressed some worries related to sexual relationship after delivery	39 (34.8)	78 (33.9)	25 (29.4)	3 (25.0)	0.978
Afraid of being found less desirable sexually after delivery	47 (41.9)	94 (40.9)	26 (30.6)	3 (25.0)	0.264
Afraid of decreased libido after delivery	47 (41.9)	100 (43.5)	34 (40.0)	2 (16.7)	0.077
Afraid of painful intercourse after delivery	77 (68.8)	148 (64.3)	46 (54.1)	3 (25.0)	0.038
Afraid of vaginal laxity after delivery	82 (73.2)	143 (62.2)	56 (65.9)	5 (41.7)	0.271
Worried that sexual relationship will change throughout pregnancy and after delivery	67 (59.8)	134 (58.3)	40 (47.1)	4 (33.3)	0.138
Afraid that overall relationship will be affected in a negative way after delivery	51 (45.5)	119 (51.7)	39 (45.9)	4 (33.3)	0.222
Plan to get vaginoplasty after delivery	51 (45.5)	105 (45.6)	41 (48.2)	3 (25.0)	0.779
Believe that vaginoplasty is necessary after vaginal delivery	58 (51.8)	120 (52.2)	48 (56.5)	4 (33.3)	0.504
Partner expressed wish that you undergo vaginoplasty after delivery	37 (33.0)	66 (28.7)	27 (31.8)	3 (25.0)	0.958
Have seen a doctor for vaginoplasty after delivery	23 (20.5)	48 (20.9)	32 (37.6)	5 (41.7)	0.006
Seeking a consultation from a doctor regarding vaginal laxity is necessary	80 (71.4)	157 (68.3)	57 (67.1)	5 (41.7)	0.142
Believe in the use of herbs after delivery to improve sexual function	62 (55.4)	120 (52.2)	50 (58.8)	10 (83.3)	0.090
Episiotomy at birth helps decrease vaginal laxity	33 (29.5)	84 (36.5)	31 (36.5)	4 (33.3)	0.333
Episiotomy at delivery worsens vaginal laxity	40 (35.7)	111 (48.3)	33 (38.8)	3 (25.0)	0.154
Kegel exercises help improve sexual function	71 (63.4)	142 (61.7)	52 (61.2)	7 (58.3)	0.606

A higher proportion of women with low education preferred cesarean section over vaginal delivery because they feared it would affect the sexual relationship ($p < 0.001$) and recorded that their partner expressed a wish that they would get vaginoplasty after delivery ($p = 0.027$), had consulted a doctor for vaginoplasty after delivery ($p < 0.001$), and recorded that episiotomy at birth decreased vaginal laxity ($p = 0.001$). Women with a high level of education were worried that the sexual relationship would change throughout pregnancy and after delivery ($p = 0.004$) and recorded that Kegel exercises would help improve sexual function ($p < 0.001$). (Table 5).

Table 5: Knowledge and Attitude according to Educational Level

Questions Agree (%)	Educational Levels (N%)		P Values
	Low Education	High Education	
	High school or under N=121	University or higher N=318	
Vaginal delivery adversely affects sexual performance	57 (47.1)	151 (47.5)	0.497
Prefer cesarean section over vaginal delivery because VD will affect sexual relationship	55 (45)	111 (34.9)	<0.001
Partner expressed some worries related to sexual relationship after delivery	36 (29.8)	109 (34.3)	0.431
Afraid of being found less desirable sexually after delivery	47 (38.8)	123 (38.7)	0.135
Afraid of decreased libido after delivery	51 (42.1)	132 (41.5)	0.183
Afraid of painful intercourse after delivery	75 (62.0)	199 (62.6)	0.507
Afraid of vaginal laxity after delivery	77 (63.6)	209 (65.7)	0.138
Worried that sexual relationship will change throughout pregnancy and after delivery	53 (43.8)	192 (60.4)	0.004
Afraid that overall relationship will be adversely affected after delivery	49 (40.5)	162 (50.9)	0.076
Plan to undergo vaginoplasty after delivery	56 (46.3)	144 (45.3)	0.706
Believe that vaginoplasty is necessary after vaginal delivery	66 (54.5)	165 (51.9)	0.163
Partner expressed wish for you to undergo vaginoplasty after delivery	67 (55)	87 (27.4)	0.027
Have seen a doctor for vaginoplasty after delivery	79 (65)	72 (22.6)	<0.001
Seeking a consultation from a doctor regarding vaginal laxity is necessary	77 (63.6)	222 (69.8)	0.274
Believe in the use of herbs after delivery to improve sexual function	63 (52.1)	179 (56.3)	0.263
Episiotomy at birth helps decrease vaginal laxity	79(65.3)	110 (34.6)	0.001
Episiotomy at delivery worsens vaginal laxity	42 (34.7)	142 (44.7)	0.001
Kegel exercises help improve sexual function	46 (38.0)	226 (71.1)	<0.001

A higher proportion of pregnant women who were currently not married (divorced=18, widowed=6) had fear that vaginal delivery would adversely affect sexual performance ($p = 0.042$), and a higher proportion of these women recorded that their partner expressed worries related to the sexual relationship after delivery ($p = 0.018$) and wished for vaginoplasty ($p = 0.004$) compared to married women. Fear of being sexually less desirable after delivery showed a significant trend that was highest among divorced women, followed by married women, and lowest among widowed women ($p = 0.018$). Fear of reduced libido after delivery showed a significant trend, being highest among widowed women, followed by married women, and lowest among divorced women ($p = 0.002$). A higher proportion of married pregnant women worried that the sexual relationship would change throughout pregnancy and after delivery ($p < 0.001$) (Table 6).

Table 6: Knowledge and Attitude according to Current Marital Status

Questions Agree (%)	Currently Married		P Values
	Yes	No	
	Married N=417	Divorced/Widowed N=24	
Vaginal delivery adversely affects sexual performance	210 (50.4)	18 (75.0)	0.042
Prefer cesarean section over vaginal delivery because VD will affect sexual relationship	142 (34.1)	8 (33.3)	0.642
Partner expressed some worries related to sexual relationship after delivery	130 (31.2)	15 (62.5)	0.017
Afraid of being found less desirable sexually after delivery	160 (38.4)	10 (41.7)	0.018
Afraid of decreased libido after delivery	173 (41.5)	11(45)	0.002
Afraid of painful intercourse after delivery	262 (62.8)	12 (50.0)	0.203
Afraid of vaginal laxity after delivery	275 (65.9)	11 (45.8)	0.092
Worried that sexual relationship will change throughout pregnancy and after delivery	236 (56.6)	9 (37.5)	<0.001
Afraid that overall relationship will be affected in a negative way after delivery	194 (46.5)	17 (70.8)	0.071
Plan to undergo vaginoplasty after delivery	193 (46.3)	7 (29.2)	0.423
Believe that vaginoplasty is necessary after vaginal delivery	205 (49.2)	14 (58.3)	0.439
Partner expressed wish that you undergo vaginoplasty after delivery	118 (28.3)	19 (83.3)	0.004
Have seen a doctor for vaginoplasty after delivery	101 (24.2)	7 (29.2)	0.340
Seeking a consultation from a doctor regarding vaginal laxity is necessary	283 (67.9)	16 (66.7)	0.749
Believe in the use of herbs after delivery to improve sexual function	227 (54.4)	15 (62.5)	0.620
Episiotomy at birth helps decrease vaginal laxity	140 (33.6)	13 (54.2)	0.055
Episiotomy at delivery worsens vaginal laxity	176 (42.2)	11 (45.8)	0.942
Kegel exercises help improve sexual function	259 (62.1)	13 (54.2)	0.713

Discussion

In this study, it was found that the majority of pregnant women in Saudi Arabia reported

- A decrease in sexual activity during pregnancy,
- Awareness about the positive role of Kegel exercises in improving sexual function,
- The necessity of vaginoplasty after vaginal delivery,
- Fear of dyspareunia/painful intercourse, vaginal laxity/looseness, and changes in the sexual relationship with the partner during pregnancy and after delivery,
- Dependence on past personal experience and social media for information regarding female sexual issues.

A larger proportion of the pregnant women thought that consultation with physicians was necessary to discuss vaginal laxity after delivery and that episiotomy was associated with vaginal laxity, and they relied on traditional knowledge about the use of herbs to manage sexual health issues. In this study, approximately 1/4 of pregnant women had consulted physicians for sexual health issues such as vaginal laxity (looseness), dyspareunia (painful intercourse), decreased libido (desire), and vaginal dryness (lack of lubrication). All these major concerns are similar to those reported in a recent study examining sexual health issues in the year following delivery among Australian women [16]. Notably, a substantial proportion of the participants consulted physicians regarding their sexual health issues. These sexual health-related fears, attitudes and practices were associated with age group, marital status and educational level among pregnant women in Saudi Arabia.

In this study, the majority of the pregnant women reported a decrease in sexual activity during pregnancy. This is similar to the findings of a Brazilian study. Interestingly, the percentage of pregnant women reporting a decrease in sexual activity in the Brazilian study was numerically almost the same as that in this study, i.e., 51%. However, there was a notable difference in the participants' characteristics. Specifically, while the women in the Brazilian study were primigravidae, most of the participants in this study had recorded having had a previous pregnancy [10]. Therefore, a decrease in libido during pregnancy among pregnant women seems to be a major factor regardless of parity. Therefore, painful intercourse seems to be a major factor regardless of parity during pregnancy.

Vaginal laxity may occur if there is an injury to the levator ani muscle during childbirth that results in increased genital hiatus. This may explain the fear about vaginal laxity among the participating pregnant women [17,18]. However, recent evidence shows that subjective accounts of sexual dysfunction are not related to objectively measured genital hiatus [19]. Therefore, proper counseling of pregnant women in light of recent evidence may help manage their apprehensions about sexual dysfunction after delivery. Nonpreference for cesarean section is a welcome attribute; if explored and exploited optimally, this may help manage

the overuse of cesarean section [20]. In this study, the majority of the participating pregnant women thought that consultation with a physician was necessary to discuss vaginal laxity after delivery and that vaginoplasty was necessary after vaginal delivery. As explained above, this exaggerated response may be because of a lack of awareness about recent evidence showing that sexual dysfunction is not related to measured genital hiatus [19]. The idea of using herbal or natural remedies for managing female sexual function after delivery indicates reliance on traditional knowledge on this subject. It is desirable to increase awareness among women in Saudi Arabia to inculcate an evidence-based use of such herbs [21].

The findings that participating pregnant women relied mostly on past personal experience and social media for information regarding female sexual issues are alarming. Therefore, it is imperative that remedial measures be implemented to address this lack of availability of information on a priority basis by the policy makers and stakeholders involved in the healthcare administration. The majority of pregnant women were aware of the positive role of Kegel exercises in improving sexual function [22]. There are conflicting data on the association between delivery, perineal trauma and female sex [23-26]. These data examined female sexual dysfunction and dyspareunia. However, the apprehension among a substantial proportion of participating women about the association of episiotomy with vaginal laxity is unfounded, and there is no evidence correlating episiotomy with sexual Vulvovaginal Atrophy (VVA).

Divorced women were less worried about the likelihood of reduced libido but had higher apprehension of vaginal delivery decreasing sexual performance, being less desirable, the partner expressing worries about sexual performance after delivery, and the partner expressing a wish that she undergo vaginoplasty after delivery. This heightened fear across various aspects of sexual life is understandable in this group because the participating women were pregnant and divorced. Therefore, this suggests that most likely such women were recently divorced and that sexual problems might have been one of the major issues leading to the divorces [27].

Women with higher education were aware of changes associated with the sexual relationship during pregnancy and after delivery and thought that Kegel exercises may help improve sexual function. The findings of this study corroborate the consensus guidelines of the International Society for the Study of Women's Sexual Health Process of Care. This guideline also indicates that educational level is associated with women's sexual health awareness [28]. Women showed mixed responses to sexual health function, such as preferring cesarean section over vaginal delivery and consulting a doctor for vaginoplasty after delivery, and significantly higher numbers of them replied that episiotomy at birth decreases vaginal laxity and worsens vaginal laxity. Preference for cesarean section among uneducated women is a worrying attribute, which may contravene efforts to prevent the overuse of cesarean section in this group of women [20].

It is noteworthy to mention some of the important limitations of the study that may be considered while deducing inferences from the outcome. This was a cross-sectional observation study with no implications for the cause-effect relationship between variables. Although the study used a standardized tool, a detailed and robust presentation of rigorously validated measures is usually more desirable. Therefore, it is important that future studies, especially those with longitudinal designs, randomized sampling and multicentric data collection, be used to establish the generalizations from this study.

Conclusions

Many women in Saudi Arabia have fears related to their sexual life during pregnancy and after delivery, and many of their beliefs are unfounded scientifically. Sexual health should be part of antenatal counseling and discussion.

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Author's Contribution: LAD conceived and designed the analysis, contributed data and analysis tools, performed the analysis and review, and edited the finalization of the manuscript. LAY collected the data, and performed the analysis. LAS literature review, study design and data collection. ASA development of questionnaire and translation; data collection. KLH writing the proposal, literature review, questionnaire and data collection. SAO collected the data, study design, and literature review. All authors read and approved the final manuscript.

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