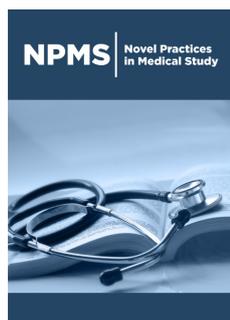


Frequency and Factors Associated with Sexual Response During Pregnancy

Vanegas Coveña DP*, Matute Núñez DA, Brito Mogrovejo PF, Rodas Vanegas MJ, Lituma Campoverde GM, Rodas Vanegas AF

Universidad de Cuenca, Ecuador



***Corresponding author:** Diana Patricia Vanegas Coveña, Universidad de Cuenca, Avenida El Paraíso y Avenida 12 de Abril, Ecuador

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Summary

Background: During pregnancy, the woman's body undergoes deep biopsychosocial and hormonal changes, which can lead to the appearance of complications and alterations in sexual response.

Objective: To determine the frequency and factors associated with alterations in sexual response during pregnancy in the Gynecology service of the Carlos Elizalde Health Center, in Cuenca, year 2021.

Methods: Observational, descriptive and cross-sectional study. The sample was 285 pregnant women. The Pregnancy Sexual Response Inventory (PSRI) was used. Data analysis was performed in SPSS v.25 software; descriptive statistics were presented in frequencies and percentages; the association was analyzed by significant chi-square for 0.05.

Results: 76.5% are between 20 and 34 years old; they are married or in a stable union; 61.4% are high school graduates; 90.2%, Catholic. Very good sexual response was 30.9% before pregnancy, decreasing to 24.9% during pregnancy, in which poor sexual response was more frequent, with 25.6%. There was a significant change in all sexual response variables during pregnancy ($p < 0.05$) and there is an association with gestational age, tobacco and illicit drug use, and pregnancy planning.

Conclusion: The sexual response of pregnant women is altered by pregnancy, decreasing as it progresses until the third trimester.

Keywords: Pregnancy; Sexual activity; Sexual response; Sexual function

Introduction

The World Health Organization (WHO) defines sexuality as the result of the interaction of multiple biological, psychological, sociocultural and ethical factors, that mediate the experience of sex, pleasure, intimacy, reproduction, gender identity and sexual orientation, as well as on the multidimensional well-being of people, and the different ways in which they experience and express sexuality as sexual beings by nature [1]. The sexual response is defined as the set of psychological, physiological and neurohormonal processes and changes that involve the entire organism and mediate sexual activity, causing generally pleasurable physical and sensory perceptions [2]. Pregnancy involves physical and emotional changes, and especially in social interactions; including the couple relationship, which significantly affects their sexual life. During this transition phase, balance and malleability of the couple is required: it is also exciting to develop a new perspective on sexuality. The sexual life of a couple during pregnancy can improve or experience changes that negatively impact physical and psychological health [3]. According to Kiemtoré et al. [4], intercourse during pregnancy is influenced by beliefs, cultures and religions, however, its advantages are many: harmony in the couple, good outcome of pregnancy and childbirth. The process of building motherhood involves anxiety, fears, and doubts about childbirth, the ability to procreate a healthy baby, and new relationships with the arrival of another member; In addition, there are adaptations to the pregnant body, physical discomfort and fatigue that, combined with cultural factors, can influence the sexual life of the couple [5]. The objective of this study was to estimate the frequency of alterations in sexual response during pregnancy and its associated factors in women who attend the Gynecology and Obstetrics service of the Carlos Elizalde Health Center, in Cuenca, 2021. Sexual Dysfunction (SD) is an important public health problem, more common in women than in men; despite this, it has not been fully investigated, so

there are gaps in its knowledge [6]. Sexual dysfunction refers to a chain of individual and couple experiences that manifests itself as an alteration in sexual desire, sexual arousal, orgasm and pain during intercourse [7]. The human sexual response is a harmonic process, for its systematization, it is separated into stages; without a strictly determined pattern, duration or chronology; there may be variations according to individual situations. Pregnancy is one of those variations that can happen with some changes. In fact, during pregnancy there is a temporary period in which the woman's body goes through profound biopsychosocial and hormonal changes, which can lead to the appearance of alterations in sexual response [8]. Pregnancy is one of the most critical periods in a woman's life, the physical and psychological changes affect her behavior and her sexual life [9].

Sexual problems have been demonstrated during pregnancy and after childbirth, particularly pronounced in depressed women; for example, decreased sexual functioning, desire, arousal, lubrication, orgasm and satisfaction, and more pain during intercourse [10]. According to a Brazilian systematic review by Wolpe et al. [11], the prevalence of sexual dysfunction during pregnancy was 56.1%. This allows building an idea about the intensity of the problem; Changes in a woman's sexual response throughout pregnancy can affect her emotional state and her relationship with her partner, generating a vicious circle that can turn into emotional irritability, depression and interpersonal friction. Several studies have shown that the consumption of tobacco, alcohol or other illicit drugs during pregnancy increases the risk of neonatal morbidity, as well as alterations in sexual behavior with your partner [12-14]. On the other hand, the type of diet during pregnancy can also have effects on sexual function, as shown in the double-blind study by Khanjari, in which a group of pregnant women were supplemented with omega 3, reducing anxiety and consequently improving their sexual function [15]. Other studies on nutrition in pregnancy could indirectly determine an improvement in female sexual function, by acting on the mental well-being of women, such as fiber, magnesium and vitamins of the B complex [16] Sexuality during pregnancy is a subject little addressed at the global, national and local levels, there are few studies. The results that will be obtained will serve as a basis to propose other research on this area.

Methodology

Observational, descriptive and transversal study; in the Carlos Elizalde Health Center, District 01D01, Cuenca, 2021. Universe of 1150 pregnant women in any trimester; simple of 285 pregnant women, based on a prevalence of SD during pregnancy of 56.1%; in the period from June to September 2021. The Pregnant Sexual Response Inventory (PSRI) was used, in its first section sociodemographic data is obtained; the second section consists of questions related to sexual activity and behavior, divided into domains. The interpretation is: 0 to 24.99: very bad; 25 to 49.99: poor; 50 to 74.99: good; and 75 to 100: very good [2].

Inclusion criteria: women with a confirmed diagnosis of pregnancy in any trimester, with prenatal care at the Carlos Elizalde Health Center. Exclusion criteria: pregnant women with previous systemic diseases, women without a sexual partner, pathology of the reproductive system. Women who do not wish to participate. Variables. Independent: maternal age; trimester of pregnancy; marital status; level of education; religion; use of tobacco, alcohol or illicit drugs; pregnancy planning; frequency of sexual intercourse; sexual desire; arousal; orgasm; sexual pleasure; dyspareunia; initiation of sexual intercourse; sexual difficulties; sexual satisfaction. Dependent: sexual response in pregnancy (PSRI scores).

Procedure: the participants were located by the medical records; the data from the questionnaires were processed in SPSS, 25. Averages were used for quantitative variables; for the qualitative ones, frequencies and percentages. The change in sexual response and associated factors was studied, through scores, before and during pregnancy, according to each factor; statistical differences were analyzed using the chi-square, at a confidence level of 95% and a margin of error of 5%, considering a value of $p < 0.005$ as a statistically significant difference, and a value of $p < 0.001$ as highly significant. Confidentiality: codes were used to protect the participants, the signature of the informed consent was obtained, the data was protected by the authors. Bioethical aspects: compliance with the principles of non-maleficence, justice, autonomy and beneficence was considered. The research was submitted to the clinical research ethics committee of the University of Cuenca for approval, taking into account: confidentiality, informed consent, proper use of results. Conflicts of interest: the study did not represent or face conflicts of interest.

Results

The PSRI questionnaire was applied to 285 pregnant women, most of whom (76.5%) were young adults, between 20 and 34 years old, their prevailing marital status was married or in a stable union; 61.4% were high school graduates; and almost all (90.2%) Catholic. The percentages in the weekly frequency of sexual intercourse, sexual desire, level of arousal, orgasm, pleasure and sexual satisfaction, decreased between before and during pregnancy; the percentage of dyspareunia increased, as did the start of coitus from the couple, and sexual difficulties, with statistically significant differences in all of them ($p < 0.001$) (Table 1). (Table 2): before pregnancy, 30.9% of women had a very good sexual response, while during pregnancy this domain decreased to 24.9%, and the most frequent was a poor sexual response, with 25.6%; there is a statistically significant association between these domains before and during pregnancy. Table 3 refers to the statistically significant difference between the consumption or not of substances, and the different domains of the PSRI, before pregnancy; is compared with the situation during pregnancy, observing that, in many domains, during pregnancy, there is no longer a statistically significant

difference, as is the case of the frequency of sexual intercourse and sexual pleasure. Sexual response domains decreased significantly with advancing gestational age. The composite measure of sexual response significantly decreased by 21.5% between the first and third trimesters (Table 4).

Table 1: Sexual response before and during pregnancy, according to domains of the PSRI. Cuenca. 2021 **Highly significant for a level of $p=0.001$.

Variable	Categories	Before Pregnancy		During Pregnancy		p-value
		Freq.	%	Freq.	%	
Frequency of intercourse	None	7	2.50%	135	47.40%	<0.001**
	1-2 times a week	163	57.20%	130	45.60%	
	3 or more times a week	115	40.40%	20	7%	
Sexual desire	Never/rarely	41	14.40%	146	51.20%	<0.001**
	A few times a week	207	72.60%	124	43.50%	
	Once a day	37	13%	15	5.30%	
Arousal	Low/very low	21	7.40%	82	28.80%	<0.001**
	Regular	127	44.60%	154	54%	
	Excellent	137	48.10%	49	17.20%	
Orgasm	Never/rarely	47	16.50%	129	45.30%	<0.001**
	Sometimes	154	54%	126	44.20%	
	Often/very often	84	29.50%	30	10.50%	
Sexual pleasure	No	13	4.60%	93	32.60%	<0.001**
	I guess everything is fine	59	20.70%	83	29.10%	
	Yes	213	74.70%	109	38.20%	
Dyspareunia	Yes	46	16.10%	127	44.60%	<0.001**
	No	239	83.90%	158	55.40%	
Initiation of intercourse	Forced, without any desire	9	3.20%	23	8.10%	<0.001**
	Usually partner-initiated	139	48.80%	157	55.10%	
	Spontaneously or spontaneously with stimulation	137	48.10%	105	36.80%	
female sexual difficulties	Yes	20	7.00%	89	31.20%	0.001**
	No	265	93.00%	196	68.80%	
Sexual satisfaction	Bad (0-3)	17	6%	99	34.70%	<0.001**
	Regular (4-7)	91	31.90%	115	40.40%	
	Good (8-10)	177	62.10%	71	24.90%	
Total		285	100%	285	100%	

Table 2: Composite measurement levels of sexual response according to the moments before and during pregnancy, and their statistical association. Cuenca. 2021.*Significant for a level of $p=0.05$. **Highly significant for a level of $p=0.001$

PSRI - Antes	PSRI - Durante				Total	p-valor
	Muy malo	Malo	Bueno	Muy bueno		
Very bad	27	20	18	0	65	<0.001
Bad	15	17	19	14	65	
Good	15	19	15	18	67	
Very good	14	16	18	40	88	
Total	71	73	70	71	280	

Table 3: Sexual response before and during pregnancy, according to consumption of substances. Cuenca. 2021. *Significant for a level of $p=0.05$. **Highly significant for a level of $p=0.001$.

Factors	Sexual Response	Before	During
Tobacco use	Frequency of intercourse	<0.001**	0.89
	Sexual desire	0.14	0.306
	Arousal	0.004*	0.333
	Orgasm	0.137	0.568
	Sexual pleasure	<0.001**	0.662
	Dyspareunia	0.057	0.418
	Initiation of intercourse	<0.001**	0.002*
	Difficulty	<0.001**	0.063
	Satisfaction	0.422	0.455
Alcohol consumption	Frequency of intercourse	0.002*	0.936
	Sexual desire	0.054	0.883
	Arousal	0.365	0.76
	Orgasm	0.086	0.798
	Sexual pleasure	0.008*	0.276
	Dyspareunia	0.437	0.907
	Initiation of intercourse	0.022*	0.591
	Difficulty	0.199	0.94
	Satisfaction	0.578	0.509

Table 4: Characteristics of sexual response in 285 women, during the different trimesters of pregnancy. Cuenca. 2021. *Significant for a level of $p=0.05$. **Highly significant for a level of $p=0.001$.

Variable	Trimester I	Trimester II	Trimester III	p-value
Frequency	39.4	36.9	27.6	0.001*
Desire	34.2	27.4	19.9	0.004*
Arousal	43.3	54.2	39.5	0.004*
Orgasm	35	41.7	27.8	0.006*
Dyspareunia	66.7	57.1	52.6	0.34
Initiation of intercourse	61.7	71.4	61.4	0.040*
Difficulties	80	72.6	65.5	0.214
Satisfaction	145	151.8	108.2	<0.001**
Composite measurement	82.5	85.4	64.8	<0.001**

Discussion

In the present investigation, 285 pregnant women who received prenatal control at the Carlos Elizalde Health Center were interviewed, to whom the PSRI sexual response questionnaire was applied during pregnancy. It was found that 76.5% had a low risk age and were married or in a stable union; 61.4% had studied up to high school; 90.2% belonged to the Catholic religion; these data differ from the study by Azevedo Guendler et al. [5] in Brazil, in 262 pregnant women between 10 and 35 weeks, with 82.8% of participants married or in a stable union, 61.1% high school graduates, 40.8% Catholics; this may be due to population, socioeconomic, and cultural differences between Brazil and Ecuador. In the study that concerns us, a decrease in the frequency of sexual intercourse, sexual desire, level of arousal,

orgasm and sexual pleasure was observed; while dyspareunia, the frequency of initiation of intercourse by the partner and female sexual difficulties during pregnancy increased, compared to the period before it. Likewise, there are significant differences in all the variables of sexual response to the change experienced between the situation of women before and during pregnancy. In the study by Azevedo Guendler et al. [5], 64.9% of women indicated a decrease in the frequency of sexual activity during pregnancy; 50.8% were satisfied and 30.5% reported that arousal was excellent or good before pregnancy.

The frequency of sexual difficulties or dysfunctions increased with pregnancy, from 5.7% to 58.8%; and 45.8% reported pain during sexual intercourse. When associating the factors and variables of sexual response in pregnant women, it was found

that gestational age was associated with the frequency of sexual intercourse ($p < 0.001$), arousal ($p = 0.027$), sexual pleasure ($p = 0.039$) and the level of satisfaction ($p = 0.003$). Tobacco use was associated with initiation of intercourse ($p = 0.002$); illicit drug use is related to initiation of intercourse ($p < 0.001$), although the frequency was very low in the sample of pregnant women. Pregnancy planning was associated with arousal ($p = 0.004$), sexual pleasure ($p = 0.003$), and satisfaction ($p = 0.016$). This indicates that, in general, the physiological changes in women during pregnancy affect their sexual response. In the study by Alizadeh et al. [17,18] a significant association was found between the reduction of the sexual response of the pregnant woman compared to the moment before pregnancy. Cezimbra et al. [19], observed that gestational age is significantly associated with decreased sexual response in pregnant women. In the research carried out, before pregnancy, 30.9% of women had a very good sexual response, but this decreased to 24.9% during pregnancy, with poor sexual response being the most frequent (25.6%) of pregnant women. In addition, there was a significant change between PSRI domains between the time before and during pregnancy. Similarly, Azevedo Guendler et al. [5] observed that, during pregnancy in all domains of the PSRI, the specific scores were lower than before pregnancy ($p < 0.001$). Abd-Ella et al. [20], found 50% of pregnant women with sexual dysfunction, data significantly higher than the magnitude of the same before pregnancy ($p < 0.05$). The PSRI total score from the study by Azevedo Guendler et al. [5] showed a significant decrease from the pre-pregnancy period, when sexual response was excellent, to the pregnancy period, when it decreased too good. According to McCool-Myers et al. [21], female sexual dysfunction affects 41% of women of reproductive age worldwide and increases during pregnancy. Cunha et al. [2], placed the PSRI global score in a good sexual response before pregnancy, changing to poor during pregnancy, representing a significant variation ($p < 0.05$). In addition, we found a significant decrease during pregnancy in sexual desire, arousal, orgasm, sexual satisfaction, as well as the composite measurement of the sexual response of the pregnant woman as the gestational age advances. The work of Cezimbra et al. [19], showed that sexual dysfunction was significantly more prevalent in the third trimester (62%) compared to the first (33.3%) and the second (50.9%), so the decrease in sexual response was significant ($p = 0.015$). The study by Fernández-Carrasco et al. [22], indicates that pregnancy causes a multitude of physical and psychological changes in women; In general, it is observed that during pregnancy there is a slight to moderate decrease in sexual interest in the first trimester, followed by a variable behavior pattern in the second trimester and a marked decrease in the final period of pregnancy.

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