

# Behavioral Dichotomy In Sexuality During Pregnancy And Effect Of Birth-Week Intercourse On Pregnancy Outcomes In An Iranian Population.

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## Abstract

Background: Sexuality in pregnancy is extensively investigated in European, American and some eastern Asian countries but not well studied in some Middle East countries like Iran. The aim of this study was to determine the pattern of sexuality in a given Iranian population and to investigate possible association between sexual activity pattern during pregnancy and some maternity and fetal health outcomes. Methods: In this pregnancy cohort study, 74 pregnant women receiving prenatal care from Asadabadi and Alzahra university hospital prenatal care units were enrolled. They were studied for their sexuality in pregnancy, their attitudes toward it and effect of birth-week intercourse on maternity and child health. Results: Having an intercourse during the last week of pregnancy was observed in 24.3 percent of women with a mean of 1.4 times among these subjects. Cumulative number of previous intercourses, intercourse at a prior week and husband educational level were the three independent predictors of having intercourse birth week in multivariate regression analysis. Although women with lower educational level and women who had higher satisfaction score during the previous intercourse showed higher percentage of birth-week intercourse, but the results were not statistically significant in multivariate analysis. Desire for and satisfaction of sexual intercourse had less trend variation throughout the pregnancy. Having more than two intercourses during the birth week significantly increased the chance of developing prom( $P<0.01$ ). Having Apgar score equal to seven versus higher Apgar scores was significantly more likely among women with more than one intercourse during the birth-week. Conclusion: The results of this study confirmed the existence of a behavioral dichotomy in sexuality during pregnancy in an Iranian population: One substantially conservative behavior and one relatively non-cautious sexual behavior.

## INTRODUCTION

Pregnancy is a period through which women experience changes in many aspects of life including bodily changes, psychological changes as well as social interactions. Sexual relationship is not an exception to this and both sexual behavior and effects of it may be subject to change[1-6]. These change are variedly reported by studies from different parts of the world, however many things regarding them are in common. Compared to time period before pregnancy, a declining pattern of sexuality either in frequency or desire and satisfaction especially through the third trimester is reported by some studies. Predictors of change in sexuality have also been focus of interest and surprisingly hormonal factors have not been found to play a significant role in this matter, while cognitive and psychosocial factors are discussed in literature[1,7]. So these factors may vary in different regions and it seems necessary for worldwide

research to be conducted in order to define the overall pattern of sexuality in pregnancy. Sexuality in pregnancy is extensively investigated in European, American and some eastern Asian countries but not well studied in some middle east countries like Iran. A systematic review conducted on 59 studies mostly from USA but also from Europe, Africa and Asia concludes that on average female sexual interest and coital activity declines slightly in the first trimester of pregnancy, shows variable patterns in the second trimester, and decreases sharply in third trimester. The study has also discussed the contextual variations affecting sexual behavior. No study from Iran was included, maybe not available at their eligibility criteria [6]. It seems that like some other countries, a mixed tabu has affected both the sexual behavior and research to be done in this regard in Iran leading to a shortage of information in this country and its sub-populations. The aim of this study was to determine the pattern of sexuality in a given Iranian population and

investigate possible association between sexual activity pattern during pregnancy and some maternity and fetal health outcomes.

## **METHODS**

Study was conducted in Iran in 2008 as an open cohort study starting from week 30 of pregnancy continuing after delivery time after which some measurements were done on the newborn. Seventy-four pregnant women receiving prenatal care from Asadabadi and Alzahra university hospital prenatal care units in Tabriz, were enrolled. They were studied for their sexuality in pregnancy, their attitudes toward it and effect of birth-week intercourse on maternity and child health. The inclusion criteria were as; Singleton pregnancy; being a resident in east Azerbaijan and consent to participate with a pre-intention to follow the study. Women with known moderate to severe psychiatric disorders subjects with known organic diseases severely affecting the sexual activity were considered to be excluded. A questionnaire was designed using modifications from female sexual function index, questions for concern about sexuality and its effect on pregnancy; and frequency of sexual intercourse throughout the pregnancy. Other variables measured were : Age of the woman and her husband, parity, receiving any kind of education regarding sexuality in pregnancy, couple's educational level, delivery type, Apgar scores(3 measurements), neonate acidosis, birth weight, meconium and premature rupture of membranes. Due to the fact that we were more interested in frequency pattern of sexual relationship in pregnancy and considering the obligations in sticking to minimal data collection strategy, we were obliged to modify the female sexual function inventory mainly through a condensing strategy. This leded for example to omission of some questions regarding lubrication, which we believe they co-vary with other questions, and also to consider cultural limitations and increasing the response rate we didn't include any question regarding oral sex or masturbation. Data were entered into the computer and analyzed using SPSS 16 statistical software package. Descriptive statistics were calculated and graphs were plotted to compare statistics for different groups. Multivariate logistic regression analysis was used to assess predictors of binary response variables like birth-week intercourse. P-value less than 0.05 was considered as statistical significance level.

## **RESULTS**

Except for two women who had temporal referral to our

centers, others participated with more than 90 percent continuation rate. Participant had a mean age of 26/7 years and mean age of their husbands was 30.9 years. Mean parity was 0.78 among the participants. Fifty one percent of pregnant women had less than six years of successful education and the figure was 55 percent for their husbands. Seventy percent said they had not received any kind of education regarding sexual relationship during pregnancy.

The ideas of participants regarding the effect of sexual relationships on baby(fetus) health during different pregnancy ages are summarized in table 1.

The ideas of women regarding effect of sexual relationships on fetal health were not found to be significantly associated with nulliparity, previous education on sexual relationship in pregnancy and level of education. Among those who said they have received some education about sexuality in pregnancy, proportion of women thinking that sexual relationship harms fetal health at lower gestational ages was lower and at last month of pregnancy it was higher than those who had not received any kind of education but it was not statistically significant.

Intercourse frequency decreased over time from week 30 to week 40 of the gestational age. Above 50 percent of women had intercourse before week 32, above 40 percent had intercourse before week 35 and above 30 percent had intercourse before week 38. The likelihood of having intercourse seemed to vary in different groups of women. Figure 1 compares it for women during week 35 to week 40, based on receiving some education about sexual activity in pregnancy and being pregnant for the first time or not. Having an intercourse during the last week of pregnancy was observed in 24.3 percent of women with a mean of 1.4 times among these subjects. Multivariate logistic regression, revealed only three variables as independent predictors of having intercourse at last week of gestational age as following:

Cumulative number of previous intercourses from week 35 of pregnancy. One more intercourse increased the likelihood of having birth week intercourse by 70 percent.

Having a previous intercourse at week 39 increased the likelihood of repeating it at birth week by 2.3 times.

Husband educational level: Having one more year of education decreased chance of last week intercourse by 30 percent.

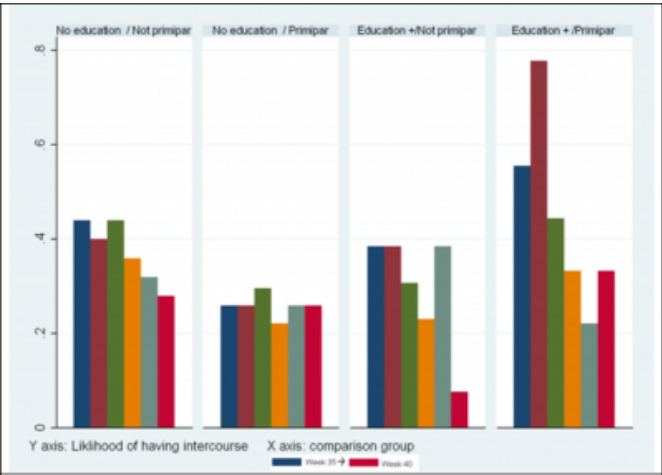
Although women with lower educational level and women who had higher satisfaction score during the previous intercourse showed higher percentage of birth-week intercourse, but the results were not statistically significant in multivariate analysis.

Desire for and satisfaction of sexual intercourse during weeks 30-40 of pregnancy reported by the participants who had an intercourse during this period is given in table 2 and mean scores of desire and satisfaction are compared in figure 1 suggestive of less variation over time in gestational age.

Fourteen (19.2%) women developed premature rupture of membranes(prom). Having more than two intercourses during the birth week significantly increased the chance of developing prom( $P<0.01$ ). Odds ratio of prom for having more than two intercourses compared to not having birth-week intercourse was 15. Although confidence interval of the estimated odds ratio was wide but the lower limit 95% confidence of it was 2.5. Although no case of neonate first minute Apgar less than seven was observed in this study but having Apgar equal to seven versus higher Apgar scores was significantly more likely among women with more than one intercourse during birth-week. Both prom and lower Apgar score were more frequent among those having intercourse at birth-week without considering the number of intercourses during the week. However with this sample size it was statistical significant for prom and borderline for first minute apgar score lower than eight. Neonatal acidosis and meconium were not associated with intercourse at birth-week.

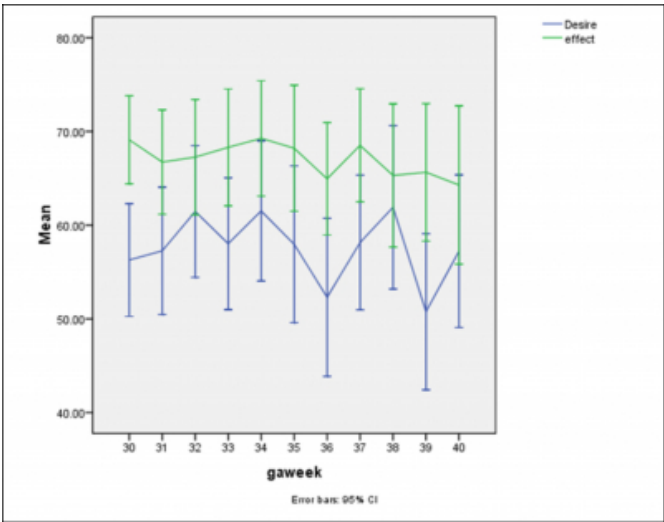
**Figure 1**

Figure 1: Likelihood of having intercourse during week 35 to week 40 for having received some education about sexual activity in pregnancy and parity



**Figure 2**

Figure 2: Mean desire and satisfaction scores in sexual intercourse during weeks 30-40 of pregnancy



**Figure 3**

Table 1: The ideas of participants regarding the effect of sexual relationships on baby(fetus) health during different pregnancy ages

	It is quite unhealthy	It is somehow unhealthy	It has no effect	It has somehow positive effect	It has quite positive effect
First semester	8.2	32.9	54	4.8	0
Second semester	6.5	26.8	58.2	8.4	0
Month seven	18.2	36.4	42.1	3.3	0
Month eight	27.4	47.5	22.8	1.15	1.15
Last Month	65.9	20.9	9.4	1.15	0

**Figure 4**

Table 2: Desire for and satisfaction of sexual intercourse during weeks 30-40 of pregnancy

Table 2: Desire for and satisfaction of sexual intercourse during weeks 30-40 of pregnancy							
A: Women's desire to have intercourse							
	Complete desire to have intercourse	Substantial desire to have intercourse	Indifferent	Against having intercourse	Totally against having intercourse		
Week 30	27.9%	39.7%	13.2%	17.6%	1.5%		
Week 31	27.9%	39.3%	9.8%	19.7%	3.3%		
Week 32	42.9%	38.1%	11.9%	4.8%	2.4%		
Week 33	31.8%	34.1%	27.3%	6.8%	.0%		
Week 34	43.9%	31.7%	7.3%	12.2%	4.9%		
Week 35	38.5%	35.9%	15.4%	5.1%	5.1%		
Week 36	25.0%	34.1%	20.5%	13.6%	6.8%		
Week 37	28.6%	45.2%	11.9%	9.5%	4.8%		
Week 38	36.0%	48.0%	12.0%	.0%	4.0%		
Week 39	15.2%	42.4%	30.3%	6.1%	6.1%		
Week 40	20.0%	52.0%	16.0%	8.0%	4.0%		
Total	31.0%	40.2%	15.3%	9.9%	3.6%		
B: Satisfaction after intercourse							
	Orgasm reached	Near orgasm	Very enjoyable	Enjoyable	Indifferent	Annoying	Very annoying
Week 30	36.8%	25.0%	20.6%	17.6%	0	0	0
Week 31	32.8%	13.1%	32.8%	18.0%	3.3%	0	0
Week 32	40.5%	14.3%	23.8%	21.4%	0	0	0
Week 33	37.2%	27.9%	23.3%	7.0%	4.7%	0	0
Week 34	42.9%	11.9%	23.8%	19.0%	2.4%	0	0
Week 35	45.0%	17.5%	22.5%	12.5%	2.5%	0	0
Week 36	29.5%	22.7%	25.0%	22.7%	0	0	0
Week 37	35.7%	26.2%	19.0%	19.0%	0	0	0
Week 38	28.0%	28.0%	16.0%	28.0%	0	0	0
Week 39	27.3%	24.2%	36.4%	6.1%	6.1%	0	0
Week 40	24.0%	28.0%	20.0%	24.0%	4.0%	0	0
Total	36.3%	20.6%	23.8%	17.3%	2.0%	0	0

## DISCUSSION

We found an overall decrease in the frequency of sexual intercourse throughout the pregnancy mainly during the last month of pregnancy. This is fairly consistent in global literature[1,8-13]. Although like other studies, frequency of intercourse in our study declined substantially in the last month of pregnancy, but interestingly a quarter of pregnant women continued to have sexual intercourse during the last week of pregnancy. A similar situation is reported from Portugal but the authors didn't share their ideas to explain it[8]. This finding indicates existence of a behavioral dichotomy among the study subjects. Our complementary analysis finding total number of previous intercourses, mainly the previous week intercourse, to predict the birth-week intercourse is in line with this theory. However, interesting in our study was that educational level of the husband was inversely correlated with last week being stronger predictor than woman's educational level itself. This may be indicator of possible gender inequality in initiating the sexual relationship in this Iranian population. This seems to be internally consistent with our findings that about one-third of women were against or indifferent to having an intercourse.

Although we observed and overall decrease in the frequency of sexual intercourse throughout the pregnancy, the desire and satisfaction in intercourse didn't seem to change in a substantial declining trend except for the birth week. This suggests that there may be some reasons for decreased intercourse frequency, other than less pleasure, physical inconvenience and decreased need for sexual relationship during pregnancy. Also we found that nearly 85 percent of women thought intercourse during the last month of pregnancy can be harmful. Concern about effect of late pregnancy intercourse on maternity or fetal health which is consistently reported in literature, may be considered as an important reason for decreased sexual intercourse frequency during pregnancy. Other than the hormonal and psychological factors discussed in literature, intra-pelvic organ changes must also be taken into account. Non reproductive intra-pelvic organic diseases have been shown to affect sexuality and sexuality improvement is observed in clinical trial studies[14].

We found that more than one time birth-week intercourse was associated with first minute APGAR score and premature rupture of membranes. It is stated in some literature that intercourse late through pregnancy is not associated with premature rupture of membranes[15-17]. The observed association and possible inconsistency with some studies may be explained in different ways like:

Direct causal relationship between multiple intercourse during the last week of pregnancy indicating a cumulative effect of intercourse during pregnancy, Although smaller studies have been controversial in making logical conclusions, but even a large study like the one conducted in Israel[15], was also prone to some biases like recall bias and selection bias. Also due to the large scale of the study seeming to be conducted all midwifery staff as interviewer may lead to higher variability. They didn't seem to consider the cumulative effect of sexual intercourse on pregnancy outcome.

Contrary to majority of subjects who were extra cautious in sexual relationship, those who have had more than one intercourse at birth-week, were shown to be generally higher frequency of intercourse during pregnancy which may indicate possibility of confounding effect of factors not measured or unknown confounders as well as known confounders not identified in multivariate analysis due to lower power of study.

Different behavior in frequency of intercourses may coincide with different and possibly risky behavior in having the intercourse.

Population varieties either in exposure or sexual behavior or in outcome susceptibility.

Although this study is considered as a small scale cohort study but indicates the necessity of revising the issue of sexuality in pregnancy and its possible association with some outcomes of the pregnancy in developing countries.

The results of this study confirmed the existence of a behavioral dichotomy in sexuality during pregnancy in an Iranian population. One substantially conservative behavior and one relatively non-cautious sexual behavior. Our findings suggests future focused research about some aspects of sexuality in pregnancy like: husbands leading role and interactions of husband and wife characteristics in affecting overall pattern of sexual behavior during pregnancy in countries with variant cultural, religious and political situations; Cumulative effect of intercourse during late pregnancy on maternity and fetal health as an independent variable; studying the behavioral dichotomy in sexuality during pregnancy as a component of other factors to predict maternity outcome.

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