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Postpartum Sexual Function; Conflict in Marriage Stability: A Systematic Review

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ABSTRACT

Background: One of the most important issues affecting the stability of marriage is sexual function, so its problem can lead to divorce or separation of the couple. Pregnancy and delivery as one the most important periods of women's life can have significant effects on sexual function. This study reviews the postpartum sexual function and its related factors in Iran.

Methods: This study is a systematic review of the sexual function after childbirth in Iran. By using of valid keywords and searching in databases such as Google scholar, SID, Magiran, Medlib, Irandoc, Iranmedex, the total number of 15 articles between 2005 and 2012 years have been evaluated. Results were reported quantitatively and qualitatively.

Results: Total Sample was 4109 women, with an average of 274 samples per study. Plenty of studies in Tehran was 46% and other cities was 54%. The majority of studies showed no relation between mode of delivery and sexual function (P=0.14), but there were significant relation between lactation and postpartum sexual function (P<0.05) as, breastfeeding decreased sexual function. Also sexual function score has decreased with increasing parity.

Conclusion: According to the effects of lactation and parity on women sexual function, therefore high risk for divorce, sex education after childbirth, especially in the first six months after delivery, maybe helpful in prevention of sexual dysfunction after delivery.

►*Implication for health policy/practice/research/medical education: Postpartum Sexual Function*

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1. Introduction:

Sexual function is a fundamental component of life and an essential role in the marriage stability is recognized as a multidimensional phenomenon, which can be influenced by multi biopsychosocial factors (1-3). Problem in sexual function in one of the partners or both, can lead to separation or divorce. Female sexual dysfunction (FSD) is a continuum of psychosexual disorders centered on sexual desire with interrelated problems of arousal, orgasm, and sexual pain (4, 5). Multiple factors are influenced by

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sexual function such as hormonal changes, menstrual, pregnancy and delivery, breastfeeding, menopausal and multiparas (3, 6). Pregnancy and Delivery are important periods of women's life that cause hormonal and bodily changes which these change could have significant effects on sexual function (7-9).

Those women that receive little attention and care in postpartum period compared to pregnancy and labor in spite of the fact that the majority of maternal deaths and disabilities occur during this period (10). The first sexual intercourse after childbirth can be the important step for couples to reclaim their intimate relationship (11, 12). During the postpartum the most changes such as dyspareunia, lack of libido, vaginal dryness and lack of orgasm can have significant effects on female sexual response cycle.

After child birth, sexual interest and activity tends to be reduced for several months as compared with the pre-pregnancy level, and sexual problems occur often (13). Most women resume sexual activity within 3 months after delivery, but 83% experience sexual problems and 30–52.5% report dyspareunia or painful intercourse (14-16). Couples generally experience a significant decline in sexual activity after child birth due to hormonal changes and as adaptation to motherhood takes (11, 17, 18).

Several factors could influence on sexual dysfunction in the postpartum period such as parity (1, 18, 19), breastfeeding, mode of delivery (1, 10, 16, 20-22), stress, fatigue and physical and psychological problems such as postpartum depression(1,16), perineal trauma, assisted vaginal delivery, episiotomy (1, 10, 16, 19, 22), Timing resumption of intercourse and sexual activity levels (18, 19, 22), painful intercourse before pregnancy (10, 16), and frequency of intercourse in postpartum period (18). In the other hand, there is a significant relation between satisfaction of marriage and sexual function (23). In addition, the sociocultural issues and unsuitable performance of health service providers about sexual health education can be very important causes of sexual dysfunction in this critical period (24).

Sometimes these changes can lead to significant disorders in couple relationship and confusion and lack of coordination of the couple in sexual relationship (10, 16, 25). Sexual dysfunction leads to reduced quality of life and dissatisfaction in relation to others (26). Neglecting to sexual problem lead to feeling less feminine, feeling of sexual failure, low self-confidence, lack of security, and feeling inferior in front of a sexual partner and these problems lead to social problems such as divorce, crime, drug addiction and mental and physical illness (20, 27, 28).

Several studies have been done about sexual function after birth with attention to importance of sexual function status after child birth. Awareness about sexual function after child birth, will help health planners to improve postpartum sexual function based on various conditions such as type of delivery, breastfeeding and so on, that result in designing appropriate health programs. This study is carried out by aims to determine status of postpartum sexual function and related factors using systematic review in Iran.

2. Materials and Methods:

This study is a systematic review of sexual function status after child birth in Iran. The

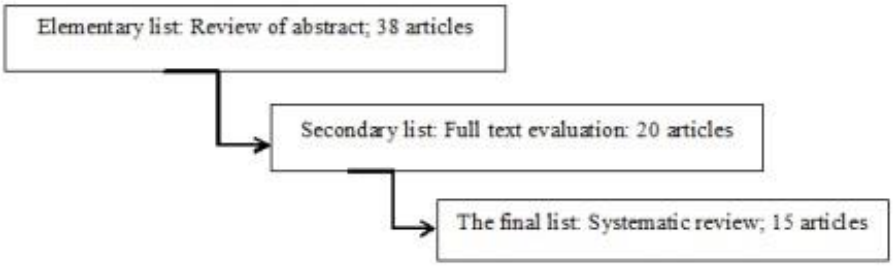

Fig. 1. Systematic review and meta-analysis studies have charted stages.

Table 1: Specifications of articles

No	Title	Tools	Sample	Type of Study	Authors, year of publication
1	sexual behavior in Lactating women	researcher's questionnaire	100	Cross-sectional	Heidari *et al* (2005) (29)
2	Assessment of sexual function during breastfeeding and factors associated with it in nulliparous women	FSFI	203	Cross-sectional	Nasiri amiri *et al* (2005-6) (30)
3	The relationship between sexual activity and breastfeeding	researcher's questionnaire	456	Analytic / historical cohort	Heidari *et al* (2007) (20)
4	Postpartum sexual function in women and infant feeding methods	FSFI	366	Cross-Sectional comparison	Khosravi Anbaran et al (2011) (31)
5	Sexual Function in Breastfeeding Women in Family Health Centers of Tabriz, Iran, 2012	FSFI	200	Cross-sectional	Malakooti *et al* (2012) (32)
6	survey of Sexual Problems due to delivery in nulliparous women	researcher's questionnaire	160	Cross-sectional	Nikpour *et al* (2005) (16)
7	Changes sexual function in nulliparous women and factors associated with it, three to six months after delivery	researcher's questionnaire	460	Cross-Sectional comparison	Anisie et al (2005)(19)
8	Sexual dysfunction during primiparous and multiparous women following vaginal delivery	researcher's questionnaire	564	Cross-sectional	Makki and abdoli yazdi (2012) (33)
9	A comparative study on quality of life and sexual function after vaginal delivery and Cesarean section	FSFI	330	Analytical / cohort (prospective cohort)	Valadan *et al* (2007) (34)
10	Evaluation of sexual function and satisfaction in women with vaginal delivery and caesarean section	researcher's questionnaire	180	Cross-sectional	Ozgoli *et al* (2009) (35)
11	Examine the relationship between mode of delivery and postpartum sexual function	researcher's questionnaire	280	Analytic / historical cohort	Heidari *et al* (2009) (21)
12	Compared sexual function in women , after cesarean and vaginal delivery	FSFI	366	Descriptive analysis	Baghdari *et al* (2011) (6)
13	A comparative sexual function after childbirth in nulliparous women who delivered by cesarean and vaginal	FSFI	200	Cohort analysis	Moghimizade and mahdizade torzani (2011)(36)
14	The Effect of Mode of Delivery on Postpartum Sexual Functioning in Primiparous Women	FSFI	150	Cross-sectional	Dabiri *et al* (2012) (37)
15	Comparison Of Female Sexual Function According To Mode Of Delivery In Women Admitted To University Health Clinics In Khorramabad	FSFI	94	Analytical / cohort (prospective cohort)	Masuodi *et al* (2012) (38)

findings that used, based on the studies were carried down in Iran and published in databases such as Google scholar, SID, MagIran, Medlib, Irandoc, Iranmedex. Searching is done by using valid keywords such as sexual function, sexual dysfunction, sexual problems, breastfeeding and postpartum sexual function. Selection criteria of articles including:

Table 2: Status of sexual function after delivery

Results	Number of sample	Number of study	groups	variable
There was no significant difference between mode of delivery and postpartum sexual function (P>0.05) expect Moghimizade and Mahdizade Torzani (2011) that showed Sexual function was better in women with vaginal delivery (37).	1103 960	10 10	cesarean section vaginal delivery	Mode of delivery
There was significant difference between breastfeeding and postpartum sexual function (P<0.05) and breastfeeding reduced sexual function. Expect Heidari *et al* (2007) that showed there was no significant difference (20).	1168 321	6 3	lactating Non lactating	Status of breastfeeding
There was significant difference between parity and postpartum sexual function (P<0.05) expect Heidary *et al* (2005) that showed there was no significant difference (30).	1778 233	8 1	nulipara multipara	parity

1. Cross-sectional and analytical studies related to the last 10 years (from 2005 to the present).
2. Articles had written by Iranian authors and articles had published in distinct databases.
3. Studying had done on women during 6 months after delivery.

Exclusion criteria including: articles were not full text, studies were done on available samples, articles which the procedure and number of samples were not well defined, and articles that were done on women except postpartum periods.

At the first step, by using the keywords, an initial list of abstracts had been prepared and inclusion – exclusion criteria were evaluated. At this stage, all articles on the subject of "sexual function after childbirth" or "sexual function in breast-feeding women" was listed in the secondary sheet. The check list of necessary information (contain of the name of researcher, title, year, place, method of sample selection, sample size, type of study, assessment of sexual function after childbirth and overall outcome) were prepared for the final evaluation, so by using, the final list of the papers related to the study was carried done. Full text articles in this list were reviewed to analyze. Figure 1 shows the flowchart of the various steps of the studies entry for meta-analysis and systematic review.

3. Results:

In this systematic review by using of suitable key words and the preparation of 38 articles (first step), check the abstracts and omit

Table 3: Status of desire (libido) after delivery

Results	Number of sample	Number of study	groups	variable
There was no significant difference between mode of delivery and postpartum sexual function (P>0.05). Expect two study (Moghimizade and Mahdizade Torzani (2011) and heidari *et al* (2009) that showed libido was better in vaginal delivery (37, 21).	1103 960	10 10	cesarean section vaginal delivery	Mode of delivery
There was significant difference between breastfeeding and postpartum desire (P<0.05) except two study	1168 321	6 3	lactating Non lactating	Status of breastfeeding
There was significant difference between parity and postpartum desire function (P<0.05)	1778 233	8 1	nulipara multipara	parity

Table 4: Status of arousal and lubrication after delivery

Results	Number of sample	Number of study	groups	variable
There was significant difference between mode of delivery and arousal and lubrication (P<0.05) expect Moghimizade and Mahdizade Torzani (2011) that showed status of arousal was better in vaginal delivery (37).	1103 960	10 10	cesarean section vaginal delivery	Mode of delivery
There was significant difference between breastfeeding and arousal and lubrication (P<0.05) except two study.	1168 321	6 3	Lactating Non lactating	Status of breastfeeding
There was significant difference between parity and postpartum desire function (P<0.05) and lubrication in multiparous was lower.	1778 233	8 1	Nulipara multipara	parity

some articles (20 article in the second), providing full text articles and a final assessment base on the researcher-made check list (final step), the full text of 15 articles were available to researchers.

The final studies were done between the years 2005 to 2012 and total number of sample was 4109 women, with an average of 274 samples per study. Plenty of studies in Tehran was 46% and other cities was 54%. Type of sampling was preparing the list of eligible persons who provide 13% of those eligible were selected using random selection. In method of study; 7 articles were cross-sectional, 3 articles were descriptive and analytical (comparative) and 5 articles were analytic that 3 articles were designed prospective cohort. Determining sexual function after child birth in 8 articles were used Female Sexual Function Index (FSFI) questionnaire and 7 articles were used researcher's questionnaire. According to the survey, 7 articles were about breastfeeding and postpartum sexual activity and related factors, 7 articles were about mode of delivery on postpartum sexual function, and one article was about relation between sexual function and parity (Table 1).

Heidari *et al*, were concluded that previous pattern of sexual active continues in the most women after child that in the some cases decreased libido and sexual activity, due to painful intercourse and vaginal dryness during breast-feeding (29). Nasiri amiri *et al*, concluded that sexual function score in lactation women was significantly lower than before pregnancy (P<0.0001) and there was no statistically significant difference between mode of delivery, neonate birth weight, contraception method and sexual function score (30). The study of Heidari *et al*, had been done between the two groups lactating and no lactating women, There was statistically significant difference between frequency of intercourse per week after delivery and lactating (P=0.02) that

Table 5: Status of orgasm after delivery

Results	Number of sample	Number of study	groups	variable
There was no significant difference between mode of delivery and orgasm (P>0.05) expect Moghimizade and Mahdizade Torzani (2011) that showed status of orgasm in vaginal delivery was better (37).	1103 960	10 10	cesarean section vaginal delivery	Mode of delivery
There was no significant difference between status of breastfeeding and orgasm (P>0.05) expect Nasiri Amiri *et al* (2006) that showed score of orgasm in lactating women was lower (31).	1168 321	6 3	Lactating Non lactating	Status of breastfeeding
There was no significant difference between parity and orgasm (P>0.05).	1778 233	8 1	Nulipara multipara	parity

Table 6: Status of sexual satisfaction after delivery

Results	Number of sample	Number of study	groups	variable
There was no significant difference between mode of delivery and sexual satisfaction (P>0.05) expect Moghimizade and Mahdizade Torzani (2011) that showed status of sexual satisfaction in vaginal delivery is better (37).	1103 960	10 10	cesarean section vaginal delivery	Mode of delivery
There was no significant difference between status of breastfeeding and sexual satisfaction (P>0.05) expect nasiri amiri *et al* (2006) and khosravi anbaran (2011) that showed score of sexual satisfaction in lactating women is lower (31, 32).	1168 321	6 3	Lactating Non lactating	Status of breastfeeding
There was significant difference between parity and sexual satisfaction (P<0.05)	1778 233	8 1	Nulipara Multipara	parity

frequency of intercourse in no lactating women was significantly lower than lactating women but there was no significant relation between vaginal dryness and lactation (20).

Khosravi anbaran *et al*, were assessed Sexual function between four infant-feeding method (exclusive breastfeeding, breastfeeding plus complementary feeding, formula milk, and breastfeeding plus formula) and were concluded that there was a significant difference between sexual function score and infant-feeding method and the highest score was belonged to women who had exclusive breastfeeding (P<0.001) (31). Malakooti *et al*, were showed that the lowest score was belonged to libido and sexual arousal (32). Nikpour *et al*, compared the sexual problems between child birth period (in groups 3, 4, 5 and 6 months after birth) and before pregnancy period which the sexual problems resulting from child birth were significantly increased than before pregnancy and there were significant relation with number of problems after child birth, duration of marriage, frequency of intercourse per week, the timing resumption of intercourse after childbirth and mode of delivery (P<0.005) (16). Anisie *et al*, by comparing sexual problems before pregnancy and postpartum period, concluded that there was significant relation between changes of sexual desire, sexual satisfaction, sexual pleasure, orgasm in the course of 3 to 6 months after child birth and sex factors and the incidence of these problems in after child birth were higher than before pregnancy (P<0.001) (19).

Makki and Abdoli Yazdi to compared

Table 7: Status of dyspareunia after delivery

Results	Number of sample	Number of study	Groups	variable
There was no significant difference between mode of delivery and dyspareunia (P>0.05) expect Moghimizade and Mahdizade Torzani (2011) that showed dyspareunia in vaginal delivery is better (37).	1103 960	10 10	cesarean section vaginal delivery	Mode of delivery
There was no significant difference between Status of breastfeeding and dyspareunia (P>0.05) expect Heidari *et al* (2005) that showed score of pain in lactating women was higher (30).	1168 321	6 3	Lactating Non lactating	Status of breastfeeding
There was no significant difference between parity and dyspareunia (P<0.05).	1778 233	8 1	Nulipara multipara	parity

postpartum sexual dysfunction among primiparous and multiparous women that showed, libido was decreased significantly in multiparous women and vaginal loosening was significantly increased in multiparous women. In conclusion, based on the results of this study, delivery has limited effects on sexual function of primiparous and multiparous women (33). Valdan *et al*, showed that there was no significant difference between vaginal delivery group and Cesarean section group (34). Heidari *et al*, Baghdari *et al*, Dabiri *et al*, and Ozgoli *et al*, achieved the same result by Valden (6, 21, 35, 36).

Moghimizade and Mahdizade Torzani showed that sexual function score in vaginal delivery is better than cesarean section (37). Masuodi *et al*, showed that there was no significant difference between the domains of sexual function and total score of the FSFI in two groups (vaginal delivery and cesarean section). However, desire, arousal, orgasm, satisfaction, pain, and total score of FSFI was significantly higher than 24 weeks after child birth compared to 12 weeks after delivery and before pregnancy (38). Tables 2 to 7 show the results of this systematic review.

4. Discussion:

Pregnancy and delivery are distinct periods of women's life that cause hormonal and bodily changes which these change could have significant effects on sexual function. Sexual function is a basic component of life, so this study is done by aim to determine status of sexual function after child birth and its related factors. Total of samples were 4109 women. Finally the average of the number of samples was 274 among the 15 articles that were used. Sexual function after childbirth was evaluated according to breastfeeding status, type of delivery, parity, method of infant feeding and postpartum sexual problems related to sexual function.

Different results in studies which were done on sexual function after childbirth can be influenced by religious, cultural and addition attitudes factors, as well as the method of sample selection, the type of instrument used and ethnicity beliefs about sexuality has a significant influence on the results.

In previous studies, women's sexual problems resulting from delivery based on self-reported including painful intercourse, dyspareunia, itching after intercourse, vaginal dryness, loss of libido, lack of orgasm, secrete milk during intercourse, effect of fatigue due to breastfeeding on sexual activity, impact of breastfeeding on dissatisfaction of body image, experience orgasms during breastfeeding and anal sex, that are the most common than before the pregnancy.

In several studies, many women are demanding sex education in the postpartum period. Some problems after child birth were related with marriage duration, frequency of sexual intercourse per week, time of first intercourse after delivery and type of delivery. As well as there is a significant relationship between incidence of these problems with painful intercourse before pregnancy, the onset of intercourse in the period after childbirth, dyspareunia at the first intercourse after childbirth, fear of first intercourse after childbirth and dyspareunia in the postpartum period, was confirmed in multiple studies.

Almost all lactating women suffer from sexual problem. The lowest score of sexual function is related to sexual desire and sexual arousal. Previous studies have shown conflicting results according to breastfeeding status. So that the majority of studies, decreased libido and sexual satisfaction, vaginal dryness and pain during intercourse in postpartum period have shown. Khosravi anbaran *et al*, were used four infant-feeding method (exclusive breastfeeding, breastfeeding plus complementary feeding, formula milk, and breastfeeding plus formula) that there was a significant difference between women's sexual function score and infant-feeding method, so that satisfaction was significantly associated with infant-feeding and the highest score of sexual function was belonged to women who had exclusive breastfeeding (31).

In the majority of studies that were evaluated sexual function in terms of mode of delivery, they were rejected the relation between

mode of delivery and postpartum sexual function, except some which concluded that sexual function score in vaginal delivery is better than cesarean section (36). So it seems that sexual function is influenced by various physical and psychological factors. Also in studies about mode of delivery, sexual satisfaction was higher in vaginal delivery. While in the majority of studies, there was no relation between sexual satisfaction and mode of delivery (6, 36, 39).

It seems that the majority of women choices cesarean section due to the ability to maintain a successful and satisfying sex after childbirth, but in these studies were not reached such outcome. However, Safarinejad *et al,*examined the effect mode of delivery on quality of life, sexual function and sexual satisfaction in nuliparous women, that showed women with vaginal delivery and emergency cesarean section had statistically significant lower FSFI scores as compared with planed cesarean section (PCS) women, also The research had shown that the quality of life (QOL) parameters for PCS women were generally higher than for the other groups (40).

Although sometimes episiotomy for vaginal delivery is required, resuming sexual activity three weeks after delivery is possible, due to improvement and reparation episiotomy. Of course, this problem can be solved by appropriate time interval for resuming sexual activity after child birth. Although the majority of studies, there was no significant different between timing resumption of intercourse and frequency of sexual activity after child birth, but in some of study, there was significant different between timing resumption of intercourse and frequency of sexual activity so that women who had cesarean section, was earlier timing resumption of intercourse. Of course, in most studies were reported average of timing resumption of intercourse was 6 weeks.

Lurie *et al,* showed that there was no significant different between timing resumption of intercourse and mode of delivery (41). Also Woranitat and Taneepanichskul showed that there was no significant different between sexual function score and mode of delivery, but women who had vaginal delivery without episiotomy, timing resumption of intercourse was earlier than women who had normal delivery with episiotomy(42). Also Connolly *et al,* showed that there was no significant different between mode of delivery, episiotomy and breastfeeding with lack of orgasm in postpartum (43).

In the majority of studies had done; there was no statistically significant different between other variables such as contraceptive method, infant-feeding method, breastfeeding, maternal age, gender of neonate, type of home ownership, income levels and education status and employment (job) of woman and husband with postpartum sexual function in two groups (vaginal delivery and caesarean section). Heidari *et al,* showed that the most women who had job (employment) and higher education, had more desire after childbirth (29).

In half of the studies were used female sexual function index (FSFI) and other half of the studies were used researcher's questionnaire, which standard questionnaire (FSFI) was checked likely more accurate variables.

According to the reviews can be concluded that delivery limits sexual function of nulipara and multipara's women. In the most studies; there was a significant different between postpartum sexual function score and parity (nullipara and multipara). So that baghdari *et al,* showed that nulipara's sexual satisfaction score were more than multipara's sexual satisfaction score (6) and Makki and abdoli yazdi showed that dyspareunia between two groups (nulipara and multipar) after birth as compared to before pregnancy decreased, libido in multiparous women decreased and vaginal loosening was significantly increased (33).

Owonikoko *et al,* showed that there was statistically significant difference between education status, employment and income of the husband and parity with timing resumption of intercourse and sexual problems after child birth and occurrence of sexual problems after delivery increased in women who had lower education and family's income and higher parity and there

was no relation between religion (Muslim or Christian) with timing resumption of intercourse (44).

In a study using meta-analysis by Kirsten Von Sydow entitled " Sexuality during pregnancy and after giving birth: a meta-analysis of 59 studies " in 1998 in Germany with the aim of achieving systematic review of all studies of sexuality in the pregnancy and the postpartum period (1 to 6 months) was conducted that sexual interest and activity in after child birth tends to be reduced for several months as compared with the pre-pregnancy level, and sexual problems occur relatively often But the most significant changes related to sexual response, orgasms, sexual activity and pleasure (13). Another study in Germany by Yeniel and Petri reported that decreased libido and orgasm and increased pain and sexual dysfunction during the first three months after delivery and improved within six months after delivery and they concluded that there was no relation between mode of delivery and sexual dysfunction (45).

Despite multiple limitations (as it's well known in such studies) such as cultural issues and women's modesty to answer about sexuality issues, small sample size and loss of the postpartum sexual dysfunction prevalence in the most studies as well as the failure to interview in husbands' sexual problems, it can be concluded that sexual function is affected by several factors such as kind of delivery, child feeding, breastfeeding status and parity, which can have different results because of different culture. Sexual function has an essential role in the marriage stability and problem in sexual function in one of the partners or both can lead to separation or divorce. Sex education after childbirth, especially in the first six months after delivery, with an emphasis on exclusive breast feeding can prevent sexual dysfunction and sexual problems after delivery.

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