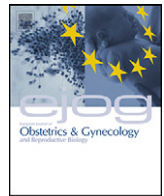




Contents lists available at ScienceDirect

# European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: [www.elsevier.com/locate/ejogrb](http://www.elsevier.com/locate/ejogrb)



## Review

### Postpartum female sexual function: A review

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#### ARTICLE INFO

##### Article history:

Received 1 August 2008  
Received in revised form 4 February 2009  
Accepted 13 April 2009

##### Keywords:

Sexual dysfunction  
Sexual function  
Childbirth  
Postpartum

#### ABSTRACT

Although many women experience sexual problems in the postpartum period, research in this subject is under-explored. Embarrassment and preoccupation with the newborn are some of the reasons why many women do not seek help. Furthermore, there is a lack of professional awareness and expertise and recognition that a prerequisite in the definition of sexual dysfunction is that it must cause distress to the individual (not her partner). Sexual dysfunction is classified as disorders of sexual desire, arousal, orgasm and pain. However, in the postpartum period the most common disorder appears to be that of sexual pain as a consequence of perineal trauma. Health care workers need to be made aware of this silent affliction as sexual morbidity can have a detrimental effect on a women's quality of life impacting on her social, physical and emotional well-being.

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#### 1. Introduction

Throughout history the subject of female sexuality has been expressed in several writings such as the *Kama Sutra* (an ancient treatise on sex and sexuality) and depicted in numerous Venus figurines and fertility goddesses. In recent years many have been engaged with the task of exploring female sexuality. Human sexuality is a complex subject since it encompasses a broad range of issues, behavior and processes, including sexual identity and sexual behavior, the physiological, psychological, social, cultural,

political and spiritual or religious aspects of sex [1]. According to the World Health Organization "Sexual health is a state of physical, emotional, mental and social well-being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity" [2]. Research on sexuality began in the 1950s when Masters and Johnson described the anatomy and physiology of the human sexual response [3]. Sexual health after childbirth is a relatively new research interest. Pregnancy itself and the transition to parenthood, among other factors, greatly impact on postpartum sexuality. Recent work has shown that sexual health problems are common in the postpartum period and despite this, it is a subject that lacks professional recognition [4–6].

The gift of parenthood is both a unique and challenging experience for both mother and father. During the postpartum

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period, women are challenged by intense psychological, physical and socio-cultural factors which impact on quality of life and sexual health for both parents [4,7–9]. In the executive summary of the World Health Organization guide on postpartum care of the mother and newborn, information and/or counseling on 'sexual life' is identified as one of the 'needs of women', as this time represents an ideal opportunity to address existing problems related to sexual health and functioning [10].

This article is a review of the English literature on sexual health in the postpartum period. We performed a Medline search (1950 to July 2008) using the key words 'sexual dysfunction', 'sexual function', 'childbirth', and 'postpartum'. Each article was hand searched for further citations and reference was made to relevant textbooks. In keeping with definitions laid down by the International Consensus Development Conference on Female Sexual Dysfunction [11], we divided aspects of sexual function into four categories: pain, desire, arousal and orgasmic disorders (Table 1). We also discuss risk factors associated with sexual dysfunction in the postpartum period.

## 2. Female sexual dysfunction

### 2.1. Sexual pain disorder

Sexual pain disorder is the most common category affecting women in the postpartum period. According to the International Consensus Development Conference [11], sexual pain disorder is subdivided into dyspareunia, vaginismus and other pain disorders. It is important to note that the disorders may occur in a different sequence and may be interdependent.

Perineal pain and dyspareunia are common postpartum issues that often impair normal sexual functioning. Knowledge of this subject is limited by the lack of research in this area as well as the lack of properly designed studies that compare prepartum with postpartum sexual health functioning. Perineal pain and dyspareunia are commonly a result of perineal trauma, episiotomy and instrumental delivery. Perineal pain occurs in up to 42% of women immediately after delivery and significantly reduces to 22% and 10% at 8 and 12 weeks, respectively [5,12,13]. Perineal pain occurs more frequently and persists for a longer period after an assisted delivery (forceps, vacuum and vaginal breech delivery) compared to normal delivery. Other risk factors include having any perineal suturing, primiparity, and using entonox (nitrous oxide, a 50% mixture with oxygen) for analgesia [14].

**Table 1**  
Consensus classification system [11].

<b>Sexual pain disorder</b> <i>Dyspareunia</i> : recurrent or persistent genital pain associated with sexual intercourse <i>Vaginismus</i> : recurrent or persistent involuntary spasms of the musculature of the lower third of the vagina that interferes with penetration, causing personal distress <i>Other sexual pain disorders</i> : recurrent or persistent genital pain induced by noncoital sexual stimulation, including anatomic and inflammatory conditions
<b>Hypoactive sexual desire disorder</b> A persistent or recurrent deficiency or absence of sexual fantasies and desire for sexual activity that causes personal distress
<b>Arousal disorder</b> Persistent or recurrent inability to attain, or to maintain until completion of sexual activity, adequate lubrication and swelling response of sexual excitement, and causes personal distress
<b>Orgasmic disorder</b> Persistent or recurrent delay or absence of attaining orgasm after sufficient orgasm after sufficient sexual stimulation and arousal, which causes personal distress

In a cross-sectional study of 796 primiparous women over a 6-month period after delivery, Barrett et al. [4] found that 62% experienced dyspareunia in the first 3 months postpartum decreasing to 31% at 6 months. Twelve percent experienced dyspareunia in the year before pregnancy. In the first 3 months after delivery dyspareunia was significantly associated with vaginal delivery and previous experience of dyspareunia. However, dyspareunia at 6 months was significantly associated with breastfeeding and pre-pregnancy dyspareunia but not type of delivery. In a longitudinal survey of 122 married Nigerian primiparous women, perineal trauma or pre-pregnancy dyspareunia significantly predicted dyspareunia at 3 months postpartum [6]. In this study 68% of women expressed the need for help on postpartum sexual issues.

Perineal pain and dyspareunia appear to be related to the extent of perineal trauma. In a retrospective cohort study of 626 primiparous women over a 6-month period after delivery, Signorello et al. [15] found that compared to women with an intact perineum, women with second degree perineal trauma were 80% more likely (CI 1.2–2.8) and those with third or fourth degree perineal trauma were 270% more likely (CI 1.7–7.7) to report dyspareunia at 3 months postpartum. Women who delivered with an intact perineum were significantly more likely to report enhanced sexual functioning (sexual sensation, sexual satisfaction, and likelihood of orgasm). In a secondary cohort analysis of 697 women (356 primiparous and 341 multiparous) by Klein et al. [16], significantly more women in the intact perineum group resumed sexual relations by 6 weeks postpartum (76%) as compared to women with perineal trauma. In a recent prospective study of 241 primiparous women by Andrews et al. [17], 40% of women were sexually active at 7 weeks postpartum and this was independent of the degree of perineal trauma sustained. This study is in keeping with the findings reported by Rogers et al. [18] in a cohort of low risk primiparous and multiparous women. Women who delivered with an intact perineum were no more likely than women with perineal trauma (minor or major) to report sexual inactivity at 12 weeks postpartum. While perineal pain and dyspareunia may decline with time, the current data on sexual function in the postpartum period is unclear due to various outcome measures (resumption of sexual activity, sexual sensation, satisfaction or orgasm, sexual inactivity) assessed at different postpartum intervals.

### 2.2. Hypoactive sexual desire disorder

There are limited studies that specifically evaluate hypoactive sexual desire disorder in the postpartum period. Judgment of deficiency is made by the clinician, taking into account factors that affect sexual functioning (such as age and context of the person's life). Several studies have noted a decrease in the frequency of sexual intercourse [19,20] and sexual desire [16,19,21,22] in the postpartum period.

In the cross-sectional study by Barrett et al. [14] postpartum loss of sexual desire was reported to occur in 53% at 3 months and 37% at 6 months after birth, compared to 9% in the year prior to pregnancy. In this study, 32% resumed intercourse within 6 weeks after delivery and the majority of respondents (89%) had resumed intercourse within 6 months. In the Nigerian study, postpartum loss of sexual desire occurred in 61% and 26% at 6 weeks and 6 months postpartum, respectively [6]. In a study of 119 British primiparous women by Robson and Kumar [23], at 3 months postpartum, 57% described their sexual desire as below pre-pregnancy levels, 33% reported no change and only 10% reported an increase in sexual desire. While it seems that sexual desire or interest may improve with time, it is important to note that desire is governed by other important life issues such as changes in body image, mother's mental health and marital relationship.

### 2.3. Arousal and orgasmic disorder

Apart from the lack of physiologic genital vasodilatation, risk factors associated with reduced subjective arousal include expectations of a negative experience (e.g. as a result of dyspareunia), distractions, sexual anxiety, fatigue, and depression. Other risk factors include medications such as selective serotonin-reuptake inhibitors [24] and oral contraceptives [25]. Baksu et al. [26] evaluated the effect of mode of delivery (mediolateral episiotomy versus elective cesarean section) on postpartum sexual function outcomes (desire, arousal, lubrication, orgasm, satisfaction and pain) using the female sexual function index (FSFI) questionnaire, described by Rosen et al. [27] in a group of 248 primiparous Turkish women. Sexual arousal as well as the other outcome measures was negatively affected in the group who had mediolateral episiotomies when compared to the cesarean section group at 6 months postpartum.

Barrett et al. [4], found that more women reported pain on orgasm at 3 and 6 months postpartum when compared to the year prior to pregnancy although this was not statistically significant. Difficulty in reaching orgasm was reported by 33% and 23% of women at 3 and 6 months postpartum, with only 14% experiencing this problem in the year prior to pregnancy. This was a cross-sectional study of 796 primiparous women and the main outcome measure was based on self-reported sexual behavior and sexual problems.

Orgasmic disorders are also influenced by the presence of perineal trauma as suggested. At 6 months postpartum when compared to women who sustained a second, third or fourth degree perineal laceration, women with an intact perineum reported enhanced sexual functioning (sexual sensation, sexual satisfaction, and likelihood of orgasm) [15]. In this retrospective cohort study self-administered questionnaires were used and primiparous women were divided into 3 groups, i.e. an episiotomy group, a tear group and an intact group. In this study patients in the episiotomy group had a midline and not a mediolateral episiotomy. Once again it is difficult to understand both arousal and orgasmic function due to the scant literature available and the use of different outcome measures, i.e. likelihood of orgasm and difficulty in reaching orgasm. Most of the studies on postpartum sexual function evaluate resumption of intercourse, perineal pain, dyspareunia and self-reported sexual problems [15,16,28,29,33,34] which may not always include orgasmic and arousal as outcomes.

## 3. Factors impacting on postpartum sexuality

### 3.1. Instrumental delivery

An assisted delivery, either by forceps or vacuum is associated with an increased risk of perineal and anal sphincter trauma resulting in pelvic floor and sexual health morbidity [5,28–32]. In a study of 438 women, including both primiparous and multiparous Scottish women a significant increase in perineal pain occurred at 8 weeks postpartum in women who had an assisted delivery (30%) compared with those who had a spontaneous vaginal delivery (7%) [12]. This finding concurred with a prospective cohort study by Thomson et al. [28] who reported that women who had an assisted delivery were more likely to report sexual problems and perineal pain at 8, 16 and 24 weeks postpartum as compared to a spontaneous vaginal delivery. In this population-based cohort study of 1295 Australian women, compared to unassisted vaginal births, more sexual problems and perineal pain were reported by women following instrumental delivery (forceps and vacuum) after adjusting for parity, perineal trauma, and length of labor. Perineal trauma is closely associated with dyspareunia and as a result influences the decision to engage in sexual intercourse.

Buhling et al. [33] showed that persistence of dyspareunia longer than 6 months was present in 14% of women who had undergone operative vaginal delivery, as compared to only 3.5% in women with a spontaneous vaginal delivery with no perineal trauma. In this study more women in the spontaneous vaginal delivery group without injuries resumed intercourse before 8 weeks postpartum (50%) than the group with operative vaginal delivery (38.8%), although this was not statistically significant. This finding is consistent with a study by Lydon-Rochell et al. [29], who found that among 971 primiparous women (after adjusting for outcomes—maternal age, education, prayer, income, living situation, race/ethnicity and newborn length of stay), significantly more women had not resumed sexual activity at 7 weeks postpartum (operative delivery 40% versus 29% unassisted vaginal delivery). This survey also revealed lower postpartum general health status scores among women who had either an assisted delivery or cesarean birth than women with an unassisted vaginal delivery.

It has been shown that women who undergo instrumental delivery were 2.5 times more likely to report dyspareunia at 6 months postpartum, in comparison with spontaneous vaginal delivery, after adjusting for maternal age, breastfeeding status, history of dyspareunia before childbirth, duration of second stage of labor, infant birth weight and degree of perineal trauma [15].

### 3.2. Cesarean section

One of the perceived benefits of cesarean delivery is sparing the pelvic floor from mechanical damage and thereby protecting sexual function. When compared to spontaneous vaginal delivery, it seems logical to assume that women delivered by cesarean section will be significantly less likely to report perineal pain since the risk of an episiotomy or assisted delivery is negated. There are limited studies that specifically evaluate sexual dysfunction in women delivered by cesarean section. Furthermore, studies differ in their design methodology (primiparous/multiparous, type of questionnaire, duration of follow-up, indication for cesarean section, comparison with various grades of perineal tears) and do not distinguish between emergent and elective cesarean section. While only a minority of women will report perineal pain after a cesarean section [5,28,33], investigation of sexual health/function in these women using a validated questionnaire is lacking. Also, since postpartum and prepartum sexual health is not compared in all studies, the proportion of sexual domains that are either positively or negatively affected is unclear. In the study by Baksu et al. [26], the sexual domains that had the most impact on the FSFI scores were pain and satisfaction. In a postal survey conducted on 484 British primiparous women at 6 months after delivery, resumption of sexual intercourse did not differ significantly by type of birth [34]. In this study a range of sexual problems were explored in the first 3 months and at 6 months postpartum, and were then grouped into 3 principal components, i.e. dyspareunia-related symptoms, sexual response-related problems and postcoital problems. At 3 months postpartum women who had undergone cesarean sections were significantly less likely to experience sexual dysfunction, but at 6 months there was no significant difference. The sub-analysis (at 3 months postpartum) revealed that dyspareunia-related symptoms differed by mode of delivery; there was a significant difference between the cesarean section group and women who had assisted vaginal deliveries while there was no difference between the cesarean group and the unassisted vaginal delivery group.

### 3.3. Breastfeeding

The physical as well as psychological aspect of a woman's sexuality is altered by breastfeeding. There is both paucity as well

as conflicting information regarding sexuality and breastfeeding. While some studies report a positive effect on sexuality, the evidence for the negative effects outweighs the former. In a small study by Masters and Johnson, 24 breastfeeding women reported significantly higher sexual activity levels as compared to their non-pregnancy state. An increase in sexual desire over pre-pregnancy levels and increased eroticism have also been reported [22,35,36]. This can be explained by the larger breast size, increased sensitivity and direct stimulation by suckling. When compared to non-breastfeeding women, most studies report that breastfeeding women are significantly more likely to report a lack of sexual desire [5,37–40]. Avery et al. [37] analyzed data from 576 breastfeeding primiparous women who completed the breastfeeding and sexuality tool questionnaire (a non-validated questionnaire) at the time of weaning. Follow-up by telephonic interview at 1, 3, 6, and 12 months postpartum revealed that women did not experience arousal during breastfeeding. In a prospective survey of 316 Canadian women attending their first postpartum visit, Rowland found a significant delay in resumption of sexual activity among breastfeeding women compared with bottle-feeding women [41]. In this study 167 women had not resume vaginal intercourse by their first postpartum visit. Of the 167 women, 66% were breastfeeding. It is hypothesized that the decrease in sexual interest by breastfeeding women may be hormone dependent. Alder prospectively investigated the hormones of 25 primiparous women for 6 months postpartum [39] and found that breastfeeding women have significantly lower testosterone and androstenedione levels than those feeding artificially.

### 3.4. Postpartum depression

Although postpartum depression has been researched extensively, it is only recently that research has focused on physical health in the postpartum period. There are limited studies examining the relationship between sexual health and depression [9,19,23,42]. In a cross-sectional study using obstetric records and a postal survey in 1 month batches over a 6-month postpartum period, Morof et al. [43] investigated the sexual health experiences of both depressed and non-depressed women. Of 484 responders, 12% had an Edinburgh Postnatal Depression Scale score of 13 or more. This study revealed that women who were depressed were less likely to have resumed sexual intercourse by 6 months postpartum, engaged in less varied sexual activities and were more likely to report sexual health problems than non-depressed women. In an Australian postal survey study which included 25 hospitals, Brown investigated the relationship between maternal physical and emotional health problems 6–9 months postpartum with a response rate of 62% [9]. Tiredness and relationship problems were associated with greater than a threefold increase in likelihood of women scoring >13 on the Edinburgh Postnatal Depression scale (a score of >13 on this scale was regarded as probable depression). Sexual problems, urinary incontinence, back pain, experiencing more colds and minor illnesses than usual, were each associated with greater than twofold increase in the likelihood of women scoring above the cut off point for probable depression. In a different study by Glazener, problems related to intercourse were more often reported by women who experienced perineal pain, depression or tiredness [5].

## 4. Conclusion

Sexual health is a global issue that is vital to overall well-being. The evolution of female sexuality from the pre-pregnant state, pregnancy and in the postpartum period is a life changing event with complex physical, psychological and physiological sequelae. Currently our interpretation of research into sexual function in the

postpartum period is hindered by multiple factors, i.e. mixed parity, maternal recall bias, the use of different types (self-reported or structured interview) and non-validated questionnaires and also the lack of comparison with prepartum data. Furthermore studies do not address whether women were bothered by the disorder. Our poor understanding of what constitutes normal sexual function compounds this further. Women with sexual problems (e.g. pre-pregnancy dyspareunia) and marital problems represent a subgroup with specific needs that ideally need to be identified and addressed prior to pregnancy. Overall, women who deliver with an intact perineum report better sexual outcomes than those sustaining perineal trauma. Apart from pain, female sexual desire, arousal and orgasmic disorders are a complex subject as they encompass components of a subjective experience of intercourse. In the postpartum period this is compounded by hormonal changes and peripartum traumatic events. However, from a review of the literature, it appears that this is short lived and self-limiting as the majority will resume intercourse by 6 months postpartum. There are very few studies addressing the 'need for help' with sexual issues in the postpartum period and this perhaps reflects global variations in cultural, religious and social attitudes towards sexuality. Currently women are reluctant to volunteer concerns about sexual health in the postpartum period and this could be attributed to embarrassment and the 'taboo' of sexual dysfunction.

It is interesting to note that when practice patterns regarding female sexual dysfunction (FSD) were assessed among members of the American Urogynecologic Society and British Society of Urogynaecology common themes emerged [44,45]. Although both considered screening for FSD important, the majority did not routinely screen for FSD as lack of time was the most important barrier for screening in both groups. Furthermore, the majority felt academically unequipped to adequately address this issue, reflecting suboptimal undergraduate and postgraduate training in this field.

The study of sexuality relevant to obstetrics and gynecology should be a research priority and special attention needs to be directed to the postpartum period. Future studies should focus on a better understanding of the etiology and pathogenesis of postpartum sexual dysfunction, and should consider prepartum sexual function, the partner's experience, and the use of a validated postpartum questionnaire.

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