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Women's sexuality during pregnancy

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Summary

Pregnancy induces significant physiological and anatomical changes in a woman's body, which inevitably impact the sexual life of couples, leading to fluctuations in levels of desire and sexual satisfaction for both women and their partners. Sexual desire in pregnant women significantly decreases during the first trimester, increases during the second trimester, and declines again during the third trimester. Women report the lowest sexual desire during the first trimester, while their partners experience the lowest levels during the third trimester. Many couples completely abstain from sexual activity during the third trimester due to concerns about the baby's health and the potential risk of preterm labor. The main risks associated with sexual activity during pregnancy include the possibility of inducing preterm labor, pelvic inflammatory disease, hemorrhage, and (rarely) air embolism.

Studies on the impact of sexual activity during pregnancy on preterm labor induction are contradictory, and evidence regarding other complications remains limited. Various sexual problems, primarily related to pain during intercourse and difficulties in achieving orgasm, appear to be common in pregnant and postpartum women. During the postpartum period, these issues may affect up to 90% of women, with pain during intercourse being the most frequently reported problem. Numerous studies have shown that approximately 20% of pregnant women experience mental health disorders, which also contribute to sexual problems within this group. These findings highlight the need for further research and educational support for expecting couples, which could improve their sexual well-being during pregnancy and after childbirth.

Key words: sexuality, pregnancy, women

Introduction

Sexuality is an important element of human identity and life, associated with both procreation and pleasure, with the latter aspect appearing significantly more complex [1]. Individual approaches to these dimensions of sexuality vary, shaped by personal beliefs and societal perspectives on sexuality [2]. According to Bullough [3], societies

can be categorized as sex-positive (focusing on pleasure) or sex-negative (focusing on procreation). Among cultural factors influencing perceptions of sexuality, religions often play a significant role, frequently reducing sexuality to its procreative aspect or stigmatizing various sexual activities [4]. Some researchers suggest that sexual attraction, most often directed toward individuals of the opposite sex, constitutes a primary component of sexuality [5].

Pregnancy is defined as a state during which an embryo, and later a fetus, develops in a woman's body [6]. Pregnancy entails numerous anatomical, physiological and emotional changes that inevitably impact a woman's sexuality [7]. Nearly all couples report engaging in sexual activity during pregnancy [7–9]. However, most studies [7–10] indicate that this period is associated with decreased sexual desire and reduced sexual activity (regardless of the type), which can affect the emotional state of both partners. The reduced sexual activity of pregnant women results from both physiological and anatomical changes typical of this period and concerns stemming from myths about the potential impact of sexual activity during pregnancy on fetal development [9, 11]. Considering the significant influence of sexuality on quality of life, the sexual functioning of pregnant women emerges as an important societal issue [10, 11].

1. Aim

The aim of this article is to review the current knowledge on the sexual functioning of pregnant women and to identify areas that require further research.

2. Changes in sexual desire in pregnant women and their potential causes

Due to numerous anatomical, physiological and psychological changes during pregnancy, variations in sexual desire should be examined in the context of the individual trimesters of pregnancy [7, 10, 12, 13]. Additionally, changes in the sexual desire of a woman's partner must also be considered, as this factor significantly influences the fulfillment of sexual needs [7, 10, 12, 13].

2.1. First trimester

The first trimester of pregnancy is characterized by various unpleasant symptoms, such as nausea, vomiting, mood swings, fatigue, abdominal pain, and breast tenderness [14, 15]. These symptoms often arise suddenly, typically during the second month of pregnancy [15], leading to a marked decline in women's well-being and directly reducing interest in sexual activity [12, 14]. Sexual desire in the first trimester is the lowest throughout pregnancy, affecting both dyadic desire (toward a partner) and

'solitary' desire (e.g., masturbation), with the latter experiencing a more pronounced decrease [12]. It is worth noting the findings of Corbacioglu et al. [16], who observed that women unaware of their pregnancy were more likely to engage in sexual activity compared to those who were aware. This suggests that psychological factors, particularly fears related to the pregnancy's course and the baby's health, play a crucial role in shaping sexual desire during this period. However, an alternative explanation is that women unaware of their pregnancy in the first trimester are less likely to experience the unpleasant symptoms typical of this period, thus maintaining their usual sexual activity.

2.2. Second trimester

During the second trimester, sexual desire among women increases – dyadic desire returns to levels comparable to pre-pregnancy, while 'solitary' desire shows a slight increase [7, 17–19]. This change can be attributed to a reduction in the severity of negative symptoms characteristic of the first trimester [14]. Additionally, increased blood flow to the vagina and vulva during this period may enhance pleasure during sexual activity, further encouraging engagement [20].

2.3. Third trimester

The third trimester is again associated with a decline in dyadic sexual desire, while 'solitary' desire significantly increases [7]. Anatomical changes in a woman's body during this time may hinder various forms of sexual activity with a partner, potentially explaining the heightened interest in solitary sexual fulfillment [10]. Many couples completely abstain from sexual intercourse during the final weeks of pregnancy, mainly due to concerns about the baby's health and the potential risk of inducing labor [10, 13, 21–24].

2.4. Other factors influencing sexual desire in pregnant women

2.4.1. Age

Some studies suggest that younger women engage in more sexual intercourse during pregnancy compared to older women [7, 25, 26], which is attributed to the increasing prevalence of sexual dysfunction with age. However, other studies contradict this observation [27].

2.4.2. Number of previous pregnancies

According to some research [28], primiparous women have fewer sexual encounters during pregnancy than multiparous women, a trend linked to the heightened emotional

response of first-time mothers to pregnancy [13]. However, other studies indicate the opposite relationship [25, 29].

2.4.3. Knowledge about pregnancy

A lack of proper education about pregnancy often leads to a reluctance to engage in sexual activity, particularly vaginal penetration, due to fears of harming the fetus, inducing preterm labor, or causing miscarriage [30, 31].

2.4.4. Marital status

Married women tend to exhibit higher sexual desire during pregnancy than unmarried women [32]. However, this relationship does not hold for marriages lasting over 10 years or arranged marriages [33].

2.4.5. Relationship factors

Pregnancy often correlates with a decline in relationship satisfaction. Nevertheless, this satisfaction generally remains stable throughout pregnancy [34, 35]. Relationship satisfaction and sexual activity during pregnancy are mutually influential – pregnant women satisfied with their relationships are more likely to engage in sexual activity, which in turn positively affects relationship satisfaction [34].

3. Changes in sexual satisfaction among pregnant women

While most researchers agree that sexual desire significantly fluctuates during the trimesters of pregnancy, opinions diverge regarding whether similar changes occur in sexual satisfaction [7]. Some studies suggest that sexual satisfaction among pregnant women fluctuates throughout pregnancy. It is reported to be lowest during the first trimester, highest during the second trimester, and declines again in the third trimester [24, 36–38]. Interestingly, in some women, sexual satisfaction is unrelated to sexual desire – despite low sexual desire, satisfaction with sexual activity remains high [9].

Other studies propose that sexual satisfaction during pregnancy is lower than before pregnancy but remains relatively stable throughout [39, 40]. Notably, the percentage of women reporting high sexual satisfaction during pregnancy varies significantly across studies, ranging from a few percent to nearly 70% [40, 41].

Given this variability, drawing a definitive conclusion about changes in sexual satisfaction among pregnant women is challenging. It is important to note that most of the cited studies involved relatively small sample sizes. Future research involving larger cohorts or meta-analyses on this topic could provide a clearer understanding of the dynamics of sexual satisfaction during pregnancy.

4. Changes in sexual desire and satisfaction among partners of pregnant women

To the best of the authors' knowledge, there is no publication extensively addressing the sexual experiences of partners of non-heterosexual pregnant women, indicating a need for further research in this area. The following data pertains to studies conducted on partners of heterosexual pregnant women.

Factors influencing changes in sexual desire among men during their partner's pregnancy are predominantly psychological [19, 42], although some men also experience physical symptoms associated with Couvade syndrome [43]. Similar to pregnant women, male partners experience a decline in sexual desire during the first trimester. This is often attributed to concerns about the pregnancy and the baby's health [14], as well as changes in their perception of their partner – some men report seeing their partner more as a mother than a romantic partner [12, 17, 44]. Sexual desire among male partners tends to increase during the second trimester [7]. This is explained by a reduction in earlier concerns [14, 24] and increased interest in their partner's sexuality, which is perceived positively [12]. The third trimester is marked by a significant decline in sexual satisfaction and the lowest level of sexual desire among male partners throughout the pregnancy [23]. Anatomical changes in the woman's body can make sexual intercourse challenging and sometimes lead to perceptions of reduced attractiveness in the partner [12, 23]. Concerns about the baby's health and the risk of triggering labor further diminish sexual desire, often resulting in complete cessation of sexual activity during the final weeks of pregnancy [7, 23].

5. Impact of sexual activity on pregnancy and associated contraindications

Sexual activity during pregnancy has been associated with several potential complications, including preterm labor, pelvic inflammatory disease, hemorrhage, and venous air embolism [45–53].

5.1. Preterm labor

Potential mechanisms through which sexual activity could lead to preterm labor include:

- oxytocin release from genital stimulation, which can stimulate uterine contractions,
- prostaglandin release during cervical stimulation, accelerating cervical ripening,
- prostaglandins present in semen, which may also enhance cervical ripening [45].

Studies on the link between sexual activity and preterm labor yield conflicting results [45, 47, 48].

5.2. Pelvic inflammatory disease

There is no conclusive evidence linking sexual activity during pregnancy with an increased risk of pelvic inflammatory disease [45]. Changes typical of pregnancy (such as the formation of the cervical mucus plug) generally reduce the risk of upper genital tract infections. However, pelvic inflammatory disease should not be overlooked during the diagnostic process for abdominal pain in pregnant women [45, 50, 51].

5.3. Hemorrhage

Hemorrhage is a concern primarily in cases of placenta previa [45]. Vaginal examination in these circumstances can trigger bleeding, suggesting that contact between the penis and the cervix may have a similar effect [45]. While no scientific studies definitively confirm this, the potential risks justify refraining from sexual activity in such cases [45].

5.4. Venous air embolism

This complication is extremely rare, but its consequences are potentially fatal [53]. Its occurrence is associated with direct communication between the vagina and the dilated blood vessels of the uterus and placenta, which, under appropriate conditions, allows for the injection of gas into the lumen of these blood vessels [51]. Therefore, it seems reasonable to advise against sexual intercourse during pregnancy in positions where the uterus is above heart level or oral sex involving air blown into the vagina [52].

5.5. Summary of sexual activity safety during pregnancy

In pregnancies with a normal course, sexual activity appears to be safe [45, 54]. Based on available literature, it is reasonable to discourage sexual activity in cases of placenta previa or threatened preterm labor [45, 54]. Pregnant women should also be advised that periodic adjustments to sexual positions may be necessary due to physical changes in their bodies [54].

6. The impact of pregnancy on women's mental health and its consequences for their sexuality

Pregnancy significantly affects the mental health of expectant mothers [55, 56]. Numerous studies have explored whether pregnancy predisposes women to mental health disorders, particularly affective and anxiety disorders, but findings have been

inconclusive [55]. One of the largest case-control studies on this topic, conducted by Uguz et al. [55], included 1,154 pregnant women and 328 non-pregnant premenopausal women as a control group. The study found that nearly one in five pregnant women experienced at least one affective or anxiety disorder, with 6.8% reporting at least two such disorders. These rates are consistent with previous research findings. The most common mental health disorders among pregnant women in this study were generalized anxiety disorder (7.9%), major depressive disorder (5.8%), obsessive-compulsive disorder (4.9%), and panic disorder (4.4%), with all except major depressive disorder occurring significantly more frequently in this group [55]. Meta-analysis conducted by Stevens et al. [57] also indicate that pregnancy is a time when many women experience relapses of mood disorders they have had in the past.

Both mood and anxiety disorders can negatively impact the sexual lives of pregnant women, either directly through symptoms such as reduced libido in depressive disorders or indirectly via pharmacotherapy used to treat these conditions [58, 59].

7. Sexual problems during pregnancy and postpartum

7.1. Pregnancy period

The most commonly reported sexual problems during pregnancy include pain during intercourse, difficulty achieving orgasm and decreased sexual desire [7]. According to a study by a Turkish research team [60], sexual activity among pregnant women is particularly influenced by the first two issues, which tend to increase as pregnancy progresses, resulting in a steady decline in the frequency of sexual intercourse. These impairments in sexual function are often temporary, but lack of appropriate therapeutic interventions can predispose women to persistent issues postpartum [61–63].

Studies by Bartellas et al. [9], Aydin et al. [64] and Anğın et al. [65] reveal that sexual dysfunction is more prevalent among pregnant women compared to non-pregnant women. However, estimating its exact prevalence is challenging due to cultural differences among study populations.

The potential causes of sexual problems during pregnancy have been discussed earlier in the article. Research by several authors [26, 66, 67] exploring the link between blood androgen levels and sexual desire during various trimesters of pregnancy found that the very low sexual desire typical of the third trimester was not associated with a significant decrease in blood androgen levels, highlighting the pivotal role of psychological factors in this phenomenon. Additionally, the profound impact of pregnancy on the sexual life of a couple also affects partner satisfaction and their psychological well-being [68]. Women who feel unable to sexually satisfy their partners during pregnancy often experience lowered self-esteem and mood [16].

Numerous studies [24, 27, 33] suggest that educating pregnant women and their partners by healthcare professionals can significantly reduce the prevalence of sexual

dysfunction during pregnancy, primarily by alleviating fears about sexual activity during this period.

7.2. Postpartum period

Sexual problems are also highly prevalent in the postpartum period, affecting up to 90% of women [69]. The most common issue during this time is pain during intercourse, which may result from perineal trauma during childbirth (e.g., due to episiotomy) and hormonal factors [70–72]. Elevated prolactin levels in breastfeeding women inhibit gonadotropin-releasing hormone secretion, leading to decreased estrogen production. Estrogen plays a critical role in vaginal lubrication during sexual activity [72], and its reduction exacerbates discomfort during intercourse, particularly penetration-related discomfort [72].

Studies by Byrd et al. [73] and Maamri et al. [74] found that couples typically resume sexual intercourse 7–9 weeks postpartum. Factors significantly influencing postpartum sexual life include lack of time, fatigue and altered body image [74]. Breastfeeding is associated with lower sexual satisfaction and less frequent sexual activity, while the mode of delivery does not impact these aspects. However, women who delivered via cesarean section tend to resume sexual activity sooner [73].

Research by Yıldız [75] revealed that women with pre-existing sexual dysfunction before pregnancy continued to experience such issues during and after pregnancy, emphasizing the importance of sexual health prior to pregnancy as a protective factor against dysfunction.

Recapitulation

Pregnancy is a physiological state that significantly affects the sexual life of both partners. Research indicates that although most couples remain sexually active during pregnancy, this period is often accompanied by reduced sexual desire and less frequent sexual activity.

In the first trimester, due to unpleasant symptoms, women experience the lowest sexual desire. In the second trimester, desire increases, approaching pre-pregnancy levels, but in the third trimester, it declines again due to anatomical changes that complicate sexual relations. Many couples abstain from sexual activity in late pregnancy out of concern for the baby's health and the risk of premature birth.

In men, changes in sexual desire during their partner's pregnancy are mainly psychological. Sexual desire tends to be lower in the first and third trimesters, associated with concerns about the partner's and baby's health, as well as anatomical changes in the woman's body that may affect the partner's perception. In the second trimester, male sexual desire tends to increase.

Sexual activity during pregnancy carries potential risks of complications, such as preterm labor, pelvic inflammatory disease, bleeding, and air embolism. Mechanisms potentially leading to preterm labor include oxytocin release triggering uterine contractions, prostaglandin release accelerating cervical ripening, and prostaglandins present in semen. However, research findings on the link between sexual activity and preterm birth are inconsistent. There is no definitive evidence connecting sexual activity with a higher risk of pelvic inflammatory disease. In cases of placenta previa, bleeding could be a potential complication, though conclusive studies confirming this risk are lacking. The occurrence of air embolism is extremely rare but theoretically possible. Periodic adjustment of sexual positions becomes necessary during pregnancy due to changes in the woman's body.

A large case-control study found that about 20% of pregnant women experience at least one affective or anxiety disorder. These disorders can negatively impact their sexual lives due to symptoms (e.g., reduced libido) and pharmacotherapy used for treatment. This highlights the need for a multifaceted approach to treating these patients, addressing both emotional and sexual difficulties.

Various sexual problems occur more frequently in pregnant women than in non-pregnant women. Numerous studies have shown that the sexual life of pregnant women is often disrupted by pain experienced during intercourse and difficulties in achieving orgasm, leading to a decrease in the frequency of sexual activity. These issues are also common in the postpartum period, affecting up to 90% of women. Pain during intercourse, primarily resulting from perineal trauma during childbirth, appears to be the most frequent problem during this time. Research indicates that couples typically resume sexual activity 7–9 weeks after delivery, and breastfeeding is associated with lower sexual satisfaction and reduced frequency of intercourse.

The authors of the article emphasize the need for more intensive research on women's sexuality during pregnancy and the postpartum period due to the limited number of studies available on this topic. In particular, further research is needed on the potential risk of bleeding related to sexual activity in cases of placenta previa, as there is insufficient evidence in the literature. Studies on factors that may trigger preterm birth also require deeper exploration, as current data is limited and findings are inconsistent.

In conclusion, sexual health during pregnancy and after childbirth is an important but still insufficiently researched area, particularly in the context of the Polish population. Existing literature includes studies on the frequency of sexual intercourse and levels of sexual satisfaction during pregnancy [40, 76–81], as well as a few studies analyzing sexual satisfaction postpartum [82–85]. One study also addresses body image and self-esteem in the third trimester [86]. Given the relatively narrow scope of existing research in this population, it is advisable to expand the studies to include aspects such as the sexuality of partners of pregnant women, the impact of pregnancy

on mental health and its consequences for sexual functioning, and sexual problems occurring both during and after pregnancy. This would provide a more comprehensive view of women's sexuality during the perinatal period in the context of the Polish population. The authors suggest that further research is needed to better understand the sexuality of pregnant women and to implement appropriate educational programs for expecting couples.

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