

Evaluation of Female Sexual Dysfunction Throughout Pregnancy: A Trimester-Based Review

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ABSTRACT

Background: Female sexual dysfunction (FSD) is a complex, multifactorial condition affecting women of reproductive age, with a particular prevalence during pregnancy due to profound physiological, hormonal, and psychological changes. Despite the significance of sexual health for overall well-being and marital satisfaction, the assessment and management of FSD during pregnancy remain underexplored. This review aims to comprehensively evaluate the patterns, risk factors, and assessment strategies for FSD throughout the three trimesters of pregnancy. First, we discuss the physiological basis of female sexual function and the wide-ranging adaptive changes that occur during pregnancy, including cardiovascular, renal, metabolic, endocrine, and psychological shifts. Next, we delineate the DSM-IV classification of FSD, detailing specific disorders of desire, arousal, orgasm, and pain, and their possible relevance in the context of pregnancy. We further examine the trimester-specific prevalence and characteristics of FSD, acknowledging the dynamic interplay of hormones, physical discomfort, and psychosocial factors across gestation. Evidence-based strategies for the assessment of FSD are outlined, highlighting the importance of comprehensive clinical evaluation, basic laboratory testing, and validated questionnaires. Finally, management approaches encompassing education, counseling, behavioral interventions, and multidisciplinary care are reviewed. In conclusion, this article emphasizes the need for routine sexual health assessment during pregnancy and multidisciplinary support to optimize maternal quality of life. Enhanced awareness and research in this field may contribute to better outcomes for pregnant women experiencing sexual dysfunction.

Keywords: *Female Sexual Dysfunction, Pregnancy*

INTRODUCTION

Sexual health is an essential component of overall well-being and quality of life in women, particularly during the reproductive years. Pregnancy represents a unique period marked by profound anatomical, hormonal, and psychological transformations, all of which may significantly impact sexual function. Despite being a natural physiological process, pregnancy introduces multiple stressors and adaptations that may predispose women to various forms of sexual dysfunction. Female sexual dysfunction (FSD) encompasses a broad spectrum of disorders affecting desire, arousal, orgasm, and pain, and its prevalence is known to fluctuate across the three trimesters of pregnancy. While several studies have explored sexual function in pregnant women, there remains a research gap regarding trimester-specific patterns, underlying mechanisms, and effective assessment strategies for FSD in this population. This review aims to address these gaps by systematically evaluating the physiology of female sexual

function, pregnancy-related changes, the classification and assessment of FSD, and management options, with a particular focus on the dynamic changes occurring throughout the three trimesters. Ultimately, the goal is to inform clinical practice and improve maternal health outcomes by fostering a deeper understanding of FSD during pregnancy [1,2].

Physiology of Women's Sexual Function

Female sexual function is a complex, multifaceted process involving neurovascular, hormonal, psychological, and relational components. Sexual response in women is commonly described in terms of desire, arousal, orgasm, and resolution. These phases are regulated by an intricate interplay of central and peripheral nervous system pathways, vascular responses, and endocrine signals. Key hormones, including estrogen and progesterone, play pivotal roles in modulating libido, vaginal lubrication, and genital sensitivity. Nitric oxide-mediated vasodilation and increased genital blood flow are fundamental for sexual arousal and lubrication, while psychological factors such as mood, body image, and relationship satisfaction exert a significant influence. Disruption of any component in this delicate balance can result in sexual dysfunction, underscoring the importance of a holistic approach to sexual health [3,4].

Physiological Changes of Pregnancy

Cardiac Changes

Pregnancy induces major cardiovascular adaptations to meet the increased metabolic demands of the mother and developing fetus. Cardiac output rises by up to 50% due to increased heart rate and stroke volume. Blood volume also expands significantly, while systemic vascular resistance decreases. These changes can influence sexual function by altering tissue perfusion, energy levels, and overall cardiovascular stability. Some women may experience palpitations, fatigue, or shortness of breath during sexual activity, which can affect libido and sexual performance [5,6].

Adaptive Changes in Renal Vasculature

Renal blood flow and glomerular filtration rate (GFR) increase by up to 50% during pregnancy, resulting in enhanced clearance of metabolic wastes. The dilation of renal vasculature and changes in tubular reabsorption help accommodate increased fluid volume and maintain electrolyte balance. However, these adaptations may contribute to urinary frequency and nocturia, which can disrupt sleep patterns and indirectly affect sexual desire and satisfaction [7,8].

Body Water Metabolism

Total body water increases by 6–8 liters during pregnancy, with expansion of both extracellular and intracellular compartments. This expansion is essential for maintaining uteroplacental circulation, amniotic fluid volume, and fetal growth. Nevertheless, increased water retention can cause edema, discomfort, and altered body image, potentially impacting sexual self-esteem and comfort during intercourse [9,10].

Respiratory Changes

To meet the heightened oxygen demands of pregnancy, tidal volume and minute ventilation increase, resulting in mild respiratory alkalosis. Progesterone-induced hyperventilation and upward displacement of the diaphragm may lead to dyspnea, particularly in the third trimester. These symptoms can make sexual activity more physically demanding and may reduce sexual interest in some women [11,12].

Adaptive Changes in the Alimentary Tract

Gastrointestinal motility decreases during pregnancy due to elevated progesterone levels, resulting in delayed gastric emptying and increased risk of reflux and constipation. These changes can cause bloating, nausea, and abdominal discomfort, which may diminish sexual desire and satisfaction. Additionally, hemorrhoids and rectal discomfort are common, further complicating sexual experiences [13,14].

Endocrine and Metabolic Changes

Pregnancy is characterized by major alterations in endocrine function, including increased production of human chorionic gonadotropin (hCG), human placental lactogen (hPL), cortisol, and insulin. These hormones modulate glucose metabolism, immune tolerance, and tissue growth. Disruptions in glucose homeostasis or excessive weight gain may negatively affect sexual self-image and function, especially in women with preexisting metabolic conditions [15,16].

Sex Hormone Changes During Pregnancy (Progesterone, Oestrogen)

Levels of estrogen and progesterone rise markedly during pregnancy. Estrogen enhances genital blood flow, vaginal elasticity, and lubrication, while progesterone exerts a relaxing effect on smooth muscle and stabilizes the endometrium. Despite these theoretically positive effects, the overall impact of these hormones on sexual function is complex, as high progesterone levels can suppress libido and cause fatigue, while fluctuating estrogen may affect mood and arousal [17,18].

Psychological Changes

Pregnancy is often accompanied by significant psychological adjustments, including increased anxiety about fetal health, body image concerns, and shifting relationship dynamics. Preexisting mental health disorders such as depression or anxiety may be exacerbated. These psychological factors can

profoundly impact sexual desire, satisfaction, and intimacy, and may play a greater role in FSD than physiological factors alone [19,20].

Female Sexual Dysfunction

Female sexual dysfunction (FSD) encompasses a range of disorders affecting desire, arousal, orgasm, and pain. FSD is influenced by biological, psychological, and social factors, and is often underreported due to stigma and lack of routine inquiry in clinical practice. The DSM-IV classification provides a useful framework for identifying and categorizing specific FSDs, aiding in accurate diagnosis and management [21,22].

DSM-IV Classification of FSD

Sexual Desire Disorders

Hypoactive Sexual Desire Disorder (HSDD): Characterized by a persistent or recurrent deficiency or absence of sexual fantasies and desire for sexual activity, causing significant distress or interpersonal difficulty. HSDD is one of the most common forms of FSD during pregnancy, particularly in the first and third trimesters when hormonal and psychological changes are most pronounced [23].

Sexual Aversion Disorder: Marked by aversion to and avoidance of genital sexual contact with a partner. This disorder may be precipitated by negative sexual experiences, trauma, or anxiety related to pregnancy or potential fetal harm [24].

High Sexual Desire (Hypersexuality): Although less common, some women may experience increased libido during pregnancy, particularly in the second trimester. While not pathologic per se, it can become problematic if it leads to distress or relationship discord [25].

Sexual Arousal Disorder

Sexual arousal disorder involves difficulty in attaining or maintaining adequate lubrication and genital swelling during sexual activity, often resulting in diminished pleasure or satisfaction. This may be exacerbated by hormonal fluctuations, vascular changes, and psychological factors inherent to pregnancy [26].

Orgasmic Disorders

Orgasmic disorders are characterized by marked delay in, infrequency of, or absence of orgasm following a normal sexual excitement phase. Pregnancy-related fatigue, altered genital sensation, and psychological concerns can contribute to the development of orgasmic difficulties [27].

Sexual Pain Disorders

Sexual pain disorders include dyspareunia (painful intercourse) and vaginismus (involuntary spasm of the vaginal muscles). Dyspareunia may be exacerbated by vaginal dryness, edema, infection, or pelvic pressure during pregnancy, while psychological factors can further complicate pain perception [28].

Other Pain Disorders

Other pain disorders may include non-genital pelvic pain, vulvodynia, or conditions unrelated to sexual activity but influencing sexual function, such as hemorrhoids or pelvic girdle pain, which are common in pregnancy [29].

Female Sexual Dysfunctions During Pregnancy

First Trimester

The first trimester is marked by rapid hormonal changes, morning sickness, fatigue, and emotional lability. Many women report a decline in sexual desire and frequency of intercourse during this period. Nausea, breast tenderness, and anxiety about miscarriage may contribute to sexual avoidance. Studies have shown that up to 70% of pregnant women experience some degree of sexual dysfunction in the first trimester, with desire and arousal disorders being most prevalent [30,31].

Second Trimester

In the second trimester, many women report improved well-being as nausea subsides and energy levels rebound. The "honeymoon" period of pregnancy is often associated with a resurgence in sexual desire and satisfaction, possibly related to increased estrogen-mediated genital blood flow and improved mood. However, some women may continue to experience psychological or relationship barriers, and physical symptoms such as pelvic pressure or urinary frequency may persist. Despite overall improvement, sexual dysfunction remains prevalent in a subset of women [32,33].

Third Trimester

During the third trimester, sexual activity often declines due to increasing abdominal girth, fatigue, back pain, and concerns about preterm labor or harming the fetus. Dyspareunia becomes more common due to pelvic congestion, edema, and pressure effects. Anxiety regarding childbirth and body image concerns further contribute to decreased libido and satisfaction. Approximately 60–80% of women report reduced sexual activity in the third trimester, with pain and desire disorders being most prominent [34,35].

Assessment of Female Sexual Dysfunction

Assessment of FSD during pregnancy requires a sensitive, comprehensive, and multidisciplinary approach. A detailed sexual history should be obtained in a nonjudgmental and confidential manner, exploring desire, arousal, orgasm, pain, relationship dynamics, and psychosocial context. Validated questionnaires, such as the Female Sexual Function Index (FSFI), can aid in systematic evaluation. Basic laboratory tests—including thyroid function, blood glucose, and hormonal assays—may be warranted to exclude medical causes of FSD. Pelvic examination may be indicated to assess for

infection, pelvic floor dysfunction, or other gynecological conditions. Collaboration with mental health professionals is recommended when psychological factors are prominent [36,37].

Management of Sexual Dysfunction

Management of FSD during pregnancy is tailored to the specific disorder, underlying causes, and patient preferences. Education and reassurance about the safety of sexual activity in pregnancy are fundamental. Counseling and psychosexual therapy may benefit women with significant psychological or relationship issues. Treatment of underlying medical conditions (e.g., infections, hormonal imbalances) is essential. Use of lubricants, modification of sexual positions, and pelvic floor physiotherapy can alleviate pain or discomfort. In selected cases, multidisciplinary intervention involving obstetricians, sex therapists, and psychologists may be required to optimize outcomes. Open communication between partners and healthcare providers is key to successful management [38,39].

Conclusion

Female sexual dysfunction during pregnancy is a common but often overlooked aspect of maternal health, with significant implications for quality of life, relationships, and psychological well-being. The dynamic physiological and psychological changes across the three trimesters present unique challenges to sexual function, with desire, arousal, orgasm, and pain disorders manifesting at different stages. Comprehensive assessment and individualized management strategies are essential for identifying and addressing FSD in pregnant women. Increased awareness among healthcare providers, routine sexual health screening, and a multidisciplinary approach can contribute to improved outcomes for affected women. Future research should focus on elucidating the mechanisms of FSD during pregnancy and developing targeted interventions to support sexual health throughout gestation and beyond [40].

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