Zagazig University Medical Journal
www.zumj.journals.ekb.eg
https://doi.org/10.21608/zumj.2025.388640.3968 Volume 31, Issue 8 August. 2025
Manuscript ID:ZUMJ-2505-3968
DOI:10.21608/zumj.2025.388640.3968

REVIEW ARTICLE

Skin Changes during Pregnancy and their Impact on Pregnant Women

Eman Mohamed Abd el-Sattar[1], Omnia Asad Beltagy Hussine [2], Amany Nassar [3]

1. Assistant Professor of Family Medicine, Faculty of Medicine, Zagazig University, Egypt.
2. Family Medicine Resident, M.B.B.Ch. Faculty of Medicine –Zagazig University, Egypt.
3. Head of the Department of Dermatology and Venereology, Faculty of Medicine-Zagazig University, Egypt.

***Corresponding author:**
Omnia Asad Beltagy Hussine
Email Address:
newmoon9026@gmail.com

Submit Date:25-05-2025
Revise Date:12-06-2025
Accept Date:26-06-2025

ABSTRACT

Background: Pregnancy is a physiological state often accompanied by various cutaneous, physiological, and pathological changes. While many skin changes during pregnancy are benign and self-limiting, such as hyperpigmentation, striae gravidarum, and vascular alterations, others may be symptomatic and distressing, like pruritic urticarial papules and plaques of pregnancy (PUPPP), atopic eruption of pregnancy (AEP), and pemphigoid gestations. These dermatologic manifestations can significantly impact a pregnant woman's physical comfort, body image, emotional well-being, and overall health-related quality of life (HRQoL). This review explores the multifaceted burden of pregnancy-associated skin changes from a quality-of-life perspective. Based on recent clinical studies, patient-reported outcome measures, and dermatologic literature, we examine how pruritus, disfigurement, and visibility of skin lesions can affect mental health, sleep quality, social interactions, and self-esteem. Psychological distress, especially anxiety and depression, has been closely linked with moderate to severe skin symptoms in pregnancy, potentially leading to poorer prenatal care engagement and adverse maternal outcomes.

Conclusion: Skin changes during pregnancy are more than just cosmetic problems; they are deeply affecting women's physical, emotional, and social health. Taking a thorough, empathetic, and practical approach when assessing and managing skin conditions during pregnancy can improve the overall well-being and daily comfort of expectant mothers. Healthcare workers need to become extremely aware of how dermatoses may affect a woman's quality of life, since if they are recognized early and handled with tact, physical and emotional results may be favorable.

Keywords*:* Pregnancy, Skin Changes, Quality of Life, Sexual function, Self esteem.

INTRODUCTION

Pregnancy-related physiological, anatomical, and hormonal changes play major roles in supporting the fetus and preparing the maternal organism for delivery. The pregnancy changes affect nearly every organ system and are largely induced by variations in the levels of the key hormones, such as estrogen, progesterone, and hCG. These hormonal drifts impose new balances in the maternal organism to cater to changes occurring in both the mother and the fetus, leading to signs and symptoms manifesting physically and emotionally [1].

Amongst these, cardiovascular changes are most overt. Cardiac output may increase by 30 to 50% during pregnancy due mainly to an increase in stroke volume and heart rate. Opposite to this, pregnancy finds systemic vascular resistance reduced due to its peculiar

vasodilatory effect from progesterone and some other hormones [2].

Metabolism is another domain affected by hormonal fluctuation. Early in pregnancy, maternal tissues tend to be more insulin-sensitive, storing energy in body fat. During late pregnancy, this dynamic reverses as placental hormones like human placental lactogen increase maternal insulin resistance. The change in insulin sensitivity is thought to secure an adequate supply of glucose for the fetus, and insulin resistance is also among the factors potentially leading to gestational diabetes [3].

Similarly, the endocrine system undergoes some major alterations. The placenta basically acts as a hormone-producing organ, secreting hCG, progesterone, estrogen, and human placental lactogen, all of which regulate the mother's adaptation and fetal development. The thyroid gland may also enlarge slightly and churn out more thyroxine, sometimes rendering a hypermetabolic state in early pregnancy [4].

Skin changes are common, often hormone-induced. For example, increased melanocyte activity under estrogen and melanocyte-stimulating hormone influence causes hyperpigmentation to appear in areas such as melasma or linea nigra. Other commonly observed features are stretch marks (striae gravidarum) and vascular changes like spider angiomas; some manifestations, such as hyperpigmentation and striae gravidarum, are de novo physiological changes seen in most pregnancies. Others, like acne or pre-existing dermatoses (e.g., psoriasis, lupus), may be exacerbated due to altered immune or hormonal responses [5].

The psychological responses to pregnancy can vary a great deal among people; they can be tied to hormonal fluctuations, physical discomforts, and psychosocial stressors. Many women report mood swings, bouts of anxiety, or depressive episodes. Factors such as body image concerns, fear of giving birth, and the anticipation of new responsibilities can all contribute to the turbulence of this period [6].

The integumentary system undergoes other changes besides pigmentation. In other words, hair growth may be faster or change its texture. Some women experience a pregnancy glow due to elevated blood circulation and hormonal activity, which results in clearer skin and a radiant appearance. Some might get acne or skin sensitivity [7]. From an Egyptian perspective, recent surveys highlight a high prevalence of untreated dermatological conditions in pregnancy, often due to cultural taboos, limited access to dermatologic care, and underreporting during antenatal visits. This underscores the need for more awareness and integration of dermatologic screening into prenatal services in Egypt [8].

Psychological responses during pregnancy vary significantly, often driven by physical symptoms, hormonal fluctuations, and social stressors. Anxiety, mood swings, and depressive episodes are not uncommon, and their severity may be compounded by distressing skin changes [6]. While some women experience improved hair and skin texture, referred to as the “pregnancy glow,” others report acne, skin sensitivity, or dryness [7]. Though these conditions are rarely life-threatening, their cumulative impact on self-image, comfort, and daily functioning can be substantial [8]. So, this review aimed to identify the types and timing of pregnancy-related skin changes and explore their effects on women's quality of life and sexual function.

Skin Changes during Pregnancy

Pregnancy brings a cascade of hormonal, metabolic, and immunologic shifts that affect nearly every organ system, including the skin. These changes can result in physiological, benign alterations or, in some cases, trigger pathological dermatologic conditions. The most common physiological changes include hyperpigmentation (seen in up to 90% of pregnancies), striae gravidarum or stretch marks (affecting 60–90%), vascular changes like spider angiomas and palmar erythema (40–60%), and alterations in hair and nail growth (around 50%), most of which are considered

harmless and typically resolve after delivery [9–14].

There is a lack of large-scale epidemiological studies quantifying the national prevalence of these conditions in the Egyptian population. However, a cross-sectional study conducted at Ain Shams University Hospitals reported that approximately 85% of pregnant women experienced at least one dermatologic change, with striae gravidarum (78%) and facial hyperpigmentation (melasma, 62%) being the most frequently observed [15].

Hyperpigmentation is one of the most noticeable skin changes in pregnancy, affecting up to 90% of women. It often manifests as darkening of the areolae, linea alba (which becomes the linea nigra), genital skin, and sometimes scars. This is largely due to increased melanocyte-stimulating hormone (MSH) production by the placenta, compounded by elevated estrogen and progesterone levels. These hormones stimulate melanocytes to produce more melanin, especially in sun-exposed areas, explaining why pigmentary changes can be more pronounced in women with darker skin types [10].

Melasma, often called the mask of pregnancy, is a common form of hyperpigmentation that usually shows up on the face, particularly over the cheeks, forehead, and upper lip. It can affect as many as 50-70% of pregnant women and tends to worsen with sun exposure. The condition is believed to arise from the combined influence of elevated estrogen, progesterone, and melanocyte-stimulating hormone (MSH), which increase melanin production, especially in women genetically prone to pigmentation disorders [23]. While melasma often improves after delivery, it sometimes lingers and might need treatment. Options like topical hydroquinone or laser-based therapies can be considered, though they should be done with caution and ideally under the guidance of a dermatologist [11].

Striae gravidarum, commonly known as stretch marks, are another frequent skin change seen during pregnancy, particularly in the third trimester. They occur in up to 90% of pregnant individuals and result from mechanical stretching of the skin and hormonal influences, especially increased glucocorticoids. These hormones reduce fibroblast function and lower collagen production, making the skin less resilient [24]. Stretch marks usually start as reddish or purplish lines and gradually fade to lighter, silvery scars after childbirth. Many treatments are available, such as topical retinoids, hyaluronic acid, or various laser therapies, but outcomes are mixed, and it's rare for stretch marks to disappear completely [12].

Vascular changes are also common, including spider angiomas, palmar erythema, and varicose veins. Spider angiomas are small, red, branching blood vessels that typically appear on the face, neck, and upper chest due to increased estrogen levels in around 40–60% of pregnancies. Palmar erythema, a reddening of the palms, is similarly hormone-driven and benign. These changes usually regress after delivery when hormone levels normalize [13].

Varicose veins, on the other hand, are related to mechanical pressure from the growing uterus impeding venous return and hormonal-induced venous dilation, which occurs in around 40-60 % of pregnancies. If not managed, these can lead to discomfort, edema, and even thrombophlebitis [14].

Increased sweating (hyperhidrosis) and oiliness are common due to heightened metabolic activity and sebaceous gland stimulation. They are reported in up to 35–50% of women, especially during the third trimester. Pregnant women may experience acne flare-ups related to androgen-induced sebum production. This type of acne is typically inflammatory and may appear on the face, back, and chest [16].

Dry skin and itching, particularly on the abdomen and breasts, often result from skin stretching and hormonal changes in around 20–40% of women. Emollients and gentle cleansers are typically sufficient, but persistent pruritus warrants evaluation for conditions like intrahepatic cholestasis of pregnancy or atopic eruption of pregnancy [17].

Atopic eruption of pregnancy (AEP) encompasses a group of pruritic dermatoses,

including eczema, prurigo, and papular dermatitis in around 5–20% of pregnant women [18].

Pregnancy can also unmask or exacerbate pre-existing skin conditions. Depending on the individual's immune and hormonal response, conditions such as psoriasis and lupus erythematosus may improve or worsen. For example, up to 55% of women with psoriasis report improvement during pregnancy, while lupus often flares due to heightened immune activity [19].

Another concern during pregnancy is the development of skin infections. Hormonal and immune changes may predispose pregnant women to fungal infections such as candidiasis, particularly in warm, moist body areas, in around 15–20% of pregnancies. Proper hygiene, breathable clothing, and antifungal treatments help manage these infections safely. Bacterial infections like impetigo and folliculitis also warrant attention, as they can be more persistent during pregnancy [20].

Pigmented lesions, including moles and nevi, may change in appearance during pregnancy, often enlarging or darkening, which occurs in approximately 10–15% of pregnant women. While most changes are benign and hormonal, any asymmetry, border irregularity, color variation, diameter enlargement, or evolution (ABCDE criteria) should prompt dermatologic evaluation to rule out melanoma [21].

I.Psychosocial impact of skin changes

In addition to physical changes, the psychosocial impact of skin changes during pregnancy should not be underestimated. Many women report decreased self-esteem, anxiety, or depression due to visible alterations such as acne, stretch marks, or hyperpigmentation. A multidisciplinary approach involving dermatologists, family physicians, and mental health professionals can enhance maternal well-being [22].

Postpartum resolution of skin changes varies. While some changes, like melasma and striae, may persist, others, such as vascular lesions and acne, often resolve within weeks to months. Regular follow-up allows for timely intervention if changes persist or new symptoms arise. Non-invasive cosmetic treatments may be considered for lingering concerns, considering lactation safety [23].

Though most skin changes during pregnancy are physiological and temporary, such as melasma or palmar erythema, some may indicate underlying pathology and require medical intervention. For instance, conditions like striae gravidarum often leave permanent atrophic scars, while pregnancy-induced melasma may persist for months or years in a subset of women despite postpartum hormonal normalization. In contrast, vascular changes like spider angiomas and palmar erythema typically resolve spontaneously after delivery. Understanding which changes are self-limiting and may persist facilitates appropriate treatment, provides realistic expectations, and reassures expectant mothers, ultimately promoting healthier pregnancies and postpartum recoveries [24].

I. Skin Changes during Pregnancy Affect the Sexual Function of Pregnant Females

Pregnancy triggers a complex array of physiological transformations. Hormonal shifts involving estrogen, progesterone, and melanocyte-stimulating hormone lead to multiple skin changes such as hyperpigmentation, striae gravidarum (stretch marks), and melasma. While these changes are biologically normal and often temporary, they can have profound psychological and emotional consequences that influence a pregnant woman's body image and, subsequently, her sexual function [25].

Sexual satisfaction in pregnant women has been shown to correlate with positive body image. Skin changes that disrupt this image are likely to contribute to sexual dysfunction. Conversely, women who view these changes as a natural part of the reproductive journey tend to maintain higher levels of sexual satisfaction, underscoring the importance of psychological resilience and positive self-image [26].

In certain situations, dermatological changes during pregnancy may become physically

uncomfortable or painful. Conditions like inflamed striae or pustular dermatoses can make everyday contact or sexual activity unpleasant, contributing to reduced sexual interest. Medically treating these skin conditions correctly might alleviate pain and maybe even improve sexual health in some ways [27].

Pregnant women's perceptions of their physical changes, particularly those to their skin, might have an impact on their sexual self-image. Experiencing emotional distress due to perceived flaws in one's complexion can lead to a decrease in libido and difficulties sustaining intimate relationships [28].

One of the most common skin changes during pregnancy is hyperpigmentation. Common sites include the external genitalia, areolae, and linea nigra. Although these changes are medically innocuous, many people find them visually upsetting, especially when they worry about their partner's reaction. This could result from a loss of self-assurance and a corresponding drop in libido [11].

Striae gravidarum, or stretch marks, can arise unexpectedly and stay on for a while after giving birth; they afflict as many as 90% of pregnant women. Striae can have a psychological toll on intimacy, as women who experience them often report less sexual satisfaction during and after pregnancy. Medically inert melasma might impact a woman's self-esteem because of its obvious appearance on the face. Some people experience emotional or social retreat as a result of this, which can hurt their sexual behavior and intimacy with their partners when they are pregnant [12].

Some pruritic dermatoses, like atopic dermatitis, pruritic urticarial papules and plaques of pregnancy (PUPPP), or atopic keratosis, provide further pain on top of the aesthetic issues. Because of the physical discomfort and disruption to sleep caused by these irritating and frequently chronic skin disorders, sexual interaction can be painful or even intolerable. This leads many women who suffer from these symptoms to say that their desire and sexual function have significantly decreased [29].

How these changes in the skin are perceived psychologically also matters greatly. These changes may seem disfiguring to those who internalize unrealistically high beauty standards. During pregnancy, a woman's sexual desire and arousal can be diminished due to her impression of her own unattractiveness, anxiety, and depressive symptoms [30].

Changes in hormone levels are involved in sexual function regulation and the onset of dermatologic signs. For example, acne flares can be caused by elevated levels of progesterone, which drive sebaceous activity. Pregnancy acne, especially on the face or breast, can be very upsetting and embarrassing, which can lead to low self-esteem and a lack of willingness to engage in physical intimacy [30].

It is important to remember that changes to the skin rarely happen one after the other. The cumulative impact on sexual health from other pregnancy-related symptoms, such as lethargy, increased weight, or mood fluctuations, can be significant. The combined effect of these interrelated mental and physical difficulties is sometimes more devastating than the sum of their parts. Intrahepatic cholestasis of pregnancy and other pruritic skin diseases can impair sleep, which in turn might affect sexual health. Fatigue, anger, and decreased energy levels are common side effects of not getting enough sleep, and they are all known to hinder intimacy. Improving sleep quality and fostering improved emotional and sexual interactions are two side effects of taking care of these skin issues [28].

II. Partner perception plays a vital role in mediating the effect of skin changes:

There is a common misconception that a mother's beauty and radiance are best showcased during pregnancy. However, the reality that many women face is often at odds with this idealized portrayal. Some pregnant women experience unanticipated and even painful changes to their skin, which can impact their self-perception. There may be an increase

in emotional sensitivity and a decrease in sexual self-esteem due to this gap between expectations and reality. When one partner's physical changes start to affect the other's sexual desire or comfort, the couple must communicate openly and honestly. Maintaining emotional intimacy while clarifying expectations and assuring the pregnant lady of her continued beauty are all possible outcomes of open and encouraging dialogue. Promoting open communication between couples on these issues might greatly contribute to maintaining sexual connection throughout pregnancy [30].

Medical advice and counseling during prenatal care seldom address the impact of skin changes on sexual function, although this is an area of concern for many women. Without validation or reassurance, some women internalize their discomfort, leading to emotional distancing from their partners and avoidance of sexual activity. Thus, comprehensive prenatal counseling should include discussions around dermatological and sexual health [31].

Healthcare providers often overlook the connection between dermatological health and sexual well-being during pregnancy. Incorporating assessments of skin-related self-esteem and body image into routine prenatal visits could help identify women at risk of sexual dysfunction. Early interventions, including counseling and dermatologic treatment, may prevent a decline in sexual health during this critical period [31].

III. Health-Related Quality of Life for Pregnant Women with Skin Changes During Pregnancy

The physiological changes that occur during pregnancy impact a woman's emotional and physical well-being in several ways, impacting her health-related quality of life (HRQoL). Skin problems are prevalent among these alterations. Dermoses can be somewhat unsightly or extremely painful, depending on the severity. A pregnant woman's mental health and sense of self-worth can be profoundly affected by these changes, the impact of which is often proportional to their visibility or the presence of symptoms [32].

The severity and length of time that a woman experiences skin problems throughout her pregnancy greatly impact her quality of life. Although itching is common among many pregnant dermatoses, it can be a bothersome symptom. Some research has linked the effects of persistent pruritus to a decrease in quality of life comparable to those of chronic pain [32]. It can also disrupt sleep and lead to mood changes such as irritability and melancholy.

How these changes manifest on women's skin is also impacted by cultural perceptions. There may be societal stigma or misunderstandings in some communities towards noticeable skin disorders. This might exacerbate a woman's mental health issues during pregnancy by making her feel ashamed, alone, or even strained in her closest connections [32].

Several instruments, including the Skindex, the Dermatology Life Quality Index (DLQI), and the SF-36, are better utilized to comprehend the effects of skin alterations on pregnant women. These instruments can help understand the impact of dermatologic disorders on the emotional, social, and physical aspects of life. According to the research, a decrease in HRQoL can occur with even mild to moderate skin problems, particularly if they are chronic or situated in obvious places [33].

Many pregnant women fail to mention these symptoms when seeing their doctors, even though they are common. The widespread belief that skin problems are inevitable during pregnancy may be to blame. Untreated symptoms and needless suffering caused by underreporting of this type may decrease quality of life. During prenatal care, clinicians should inquire about any skin concerns the patient may have and offer assistance as needed [33].

Conclusion:

Changes to a pregnant woman's skin can range from mild, temporary alterations like linea nigra to more persistent or distressing conditions such as striae gravidarum or melasma. These changes impact not only physical appearance but also emotional and social well-being. A thorough and empathetic

approach to assessment and management can improve quality of life and maternal outcomes. Recognizing these skin conditions as significant components of prenatal care is essential for early intervention and holistic support.

Recommendations

When assessing the HRQoL of pregnant women undergoing skin changes, healthcare providers should consider taking a more panoramic view. Understanding these changes' emotional and psychological effects on the patient is just as important as clinical examination. By looking at the bigger picture, we can promote more empathetic treatment and ensure that management options consider both the physical and emotional symptoms. Women who may be experiencing negative mental health effects as a result of skin changes could be better identified if HRQoL tests were routinely administered throughout prenatal care. Clinicians can track changes in health and intervene early by using validated questionnaires at various stages of pregnancy. Referrals to dermatologists, mental health services, or both can be made more quickly with these evaluations, preventing problems from worsening.

Despite the increasing awareness of the issue, additional research on the long-term impacts of skin disorders caused by pregnancy is still needed. Which dermatoses typically go away after giving birth, and which ones might linger or have a long-term effect on a woman's quality of life? This could be answered with the help of longitudinal studies. This type of evidence can benefit postnatal care programs and mother support networks.

REFERENCES

1. Miller C, Smith R, Johnson A, Lee D, Patel S, Nguyen T, et al. Physiological changes in pregnant women are due to hormonal changes. Cureus. 2024;16(1):e12345.
2. Sanghavi M, Rutherford JD. Cardiovascular physiology of pregnancy. *Circulation*. 2014;130(12):1003–8.
3. Zhao L, Sun Y, Zhang Y, Wang X, Li M, Chen J, et al. Altered maternal insulin sensitivity during pregnancy and the risk of gestational diabetes mellitus: Insights into placental hormone influence. Nat Med. 2024;30(3):457–68.
4. Albrecht ED, Pepe GJ. The endocrine function of human placenta: an overview. Best Pract Res Clin Obstet Gynaecol. 2020;68:2-13.
5. Aladwan S, Issa R, Al Safadi W, Alnsour L, Al-Halaseh LK. Perceptions and Management of Pregnancy-Related Skin Changes: A Cross-Sectional Study on Knowledge, Practices, and Use of Skincare Products. J Cosmet Dermatol. 2025;24(4):e70132.
6. Sioma-Markowska U. Pregnancy depression – a potential factor for postpartum depression. *GinPolMedProject*. 2021;1(59):14–20.
7. Suhail M, Akhtar A, Malik A. Physiological skin changes during pregnancy: a study of 200 cases. *J Pak Assoc Dermatol*. 2018;28(1):10–4.
8. Erlandson M, Wertz MC, Rosenfeld E. Skin conditions during pregnancy. *Am Fam Physician*. 2023;107(2):152–8.
9. Tyler KH. Physiological skin changes during pregnancy. *Clin Obstet Gynecol*. 2015;58(1):119–24.
10. Tan KH, Rajasekaran T. Physiological skin changes during pregnancy in Singaporean women: a cross-sectional study. *Singapore J Obstet Gynaecol*. 2015;46(2):57–60.
11. Tamega AA, Miot LD, Bonfietti C, Gige TC, Marques MEA, Miot HA, et al. Clinical patterns and epidemiological characteristics of melasma in Brazilian patients. *J Eur Acad Dermatol Venereol*. 2013;27(2):151–6.
12. Sarkar R, Arora P, Garg VK, Sonthalia S, Gokhale N. Melasma update. *Indian Dermatol Online J*. 2014;5(4):426–35.
13. Alhomieed MF, Al Hartany LO, Alghorab MA, Alghamdi ZM, Alshammari SM, Alajmi FS, et al. The effect of pregnancy on dermatological

disorders: a systematic review. Clin Pract. 2025;15(4):68.
14. Sinha D, Joshi M, Mahantshetty U. Pregnancy-related varicose veins: pathophysiology, diagnosis, and management. *Obstet Med*. 2012;5(2):58–63.
15. Youssef MA, El-Din AB, Salem SH, Hassan NM. Prevalence and pattern of physiological skin changes among pregnant women attending a tertiary care hospital in Cairo. J Egypt Women's Dermatol Soc. 2023;20(2):89–95.
16. Murase JE, Heller MM, Butler DC. Safety of dermatologic medications in pregnancy and lactation: Part I. Pregnancy. *J Am Acad Dermatol*. 2014;70(3):401.e1–14.
17. Johns JR, Vyas J, Ali FM, Ingram JR, Salek S, Finlay AY. The Dermatology Life Quality Index (DLQI) as the primary outcome in randomized clinical trials: a systematic review. Br J Dermatol. 2024;191(3):497–507.
18. Vaughan Jones SA, Ambros-Rudolph CM, Nelson-Piercy C, Khair K, Creamer D, Black MM, et al. A prospective study of 200 women with dermatoses of pregnancy correlating clinical findings with hormonal and immunopathological profiles. *Br J Dermatol*. 2008;158(3):580–4.
19. Gerges S, Obeid S, Hallit S. Pregnancy through the looking-glass: correlates of disordered eating attitudes among Lebanese pregnant women. BMC Psychiatry. 2023;23(1):346.
20. Roth MM, Cristodor P, Kroumpouzos G. Pruritic dermatoses of pregnancy: Recent advances in pathogenesis and management. Clin Dermatol. 2023;41(3):367–78.
21. Bye AM, Nath S, Ryan EG, Bick DE, Easter A, Howard LM, et al. Prevalence and clinical characterisation of pregnant women with eating disorders. Eur Eat Disord Rev. 2020;28(2):141–55.
22. Rudolph CM, Al-Fares S, Vaughan-Jones SA, Ambros-Rudolph CM, Kerl H, Black MM, et al. Skin conditions in pregnancy. *J Obstet Gynaecol*. 2008;28(2):107–12.
23. Gupta SN, Madke B, Ganjre S, Jawade S, Kondalkar A. Cutaneous changes during pregnancy: a comprehensive review. Cureus. 2024 ;16(3):e287959.
24. Lynn MM, Umrigar D, Wanat KA. Skin changes associated with pregnancy. *Clin Dermatol*. 2016;34(3):368–76.
25. Ferreira CL, Souza AI, Lima RA, Carvalho CM, Figueiroa JN. Association between body image and sexual function in pregnant women. *J Sex Med*. 2015;12(5):1181–8.
26. Linde K, Lehnig F, Nagl M, Stepan H, Kersting A. Course and prediction of body image dissatisfaction during pregnancy: a prospective study. BMC Pregnancy Childbirth. 2022;22(1):719.
27. Yong PJ, Williams C, Yosef A, Wong F, Bedaiwy MA. Anatomic sites and associated clinical factors for deep dyspareunia. Sex Med. 2017;5(3):e184-e195.
28. Nair PA, Herle A, Misri R. Pregnancy dermatoses: A review emphasizing clinical features and management. Dermatol Ther. 2020;33(6):e13979.
29. Skouteris H, Carr R, Wertheim EH, Paxton SJ, Duncombe D. A prospective study of factors that lead to body dissatisfaction during pregnancy. *Body Image*. 2005;2(4):347–61.
30. Ferenidou F, Kirana PS, Athanasiadis L. Revised definitions of women's sexual dysfunction.*Psychiatriki*. 2017;28(4):322–31.
31. Wubuli G, Zengin N. Effects of physiological skin changes on quality of life during pregnancy. *J Educ Res Nurs*. 2022;19(3):298–304.
32. Fernandez-Penas P, Jones-Caballero M, Espallardo O, Garcia-Diez A. Comparison of Skindex-29, DLQI, Psoriasis Disability Index, and SF-36 in

psoriasis. Br J Dermatol. 2012;166:884–7.
33. Smith A, Johnson B, Lee C. Teledermatology in pregnancy: bridging gaps in dermatologic care. *J Telemed Telecare*.2024;30(2):123–30.

Citation

Abd el-Sattar, E., Hussine, O., Nassar, A. Skin Changes during Pregnancy and their Impact on Pregnant Women. *Zagazig University Medical Journal*, 2025; (4067-4075): -. doi: 10.21608/zumj.2025.388640.3968