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Original article

Striae Gravidarum and Its Effect on the Quality-of-Life Index in Libyan Pregnant Women

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Abstract
Striae gravidarum (SG) are common cutaneous changes during pregnancy, affecting up to 90% of women worldwide. Traditionally viewed as physiological cosmetic skin changes, emerging evidence suggests that SG may impose significant psychological distress and adversely affect quality of life (QoL). This study was conducted to evaluate the impact of SG on dermatology-specific QoL in Libyan pregnant women, taking into account established risk factors, cultural perceptions, and recent advances in therapeutic interventions. This cross-sectional study (January 2024 – December 2024) evaluated 150 pregnant women (aged ≥18) with striae gravidarum. Participants with systemic diseases or using corticosteroids were excluded. Data were collected using a self-administered online questionnaire that integrated clinical and psychosocial assessments. SG severity was determined via Davey's scoring system, and quality of life was measured with the Skindex-16 questionnaire, validated against WHOQOL-BREF. Data analysis was performed using SPSS v25, with $p < 0.05$ considered statistically significant. Among 150 Libyan women with striae gravidarum (SG), 72% were aged 20–40 years, 36.7% had ≥4 pregnancies, and 64% reported a family history of SG. Participants experienced significant postpartum weight gain (73.2 ± 12.6 kg vs. pre-pregnancy 64.5 ± 10.8 kg, $p < 0.001$). SG was most prevalent on the abdomen (76%) and thighs (54%). Rapid weight gain (52.7%) and multiparity (32%) were perceived as leading causes. Emotional/social impacts included embarrassment (45.3%), mild self-esteem concerns (29.3%), and partner-related challenges (26.7%). Quality of life (QoL) scores (median: 16.5) were significantly higher in older women (>40 years, $p < 0.001$) and those with a family history of SG ($p = 0.015$). SG exerts a substantial negative effect on the dermatology-specific QoL of Libyan pregnant women, with pronounced impacts on emotional health and daily functioning.

Keywords. *Striae Gravidarum, Quality of Life, Libyan Pregnant Women, Skindex-16, Stretch Marks.*

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Introduction

Striae gravidarum (SG), commonly known as stretch marks, are linear, atrophic scars that develop as a result of rapid dermal stretching during pregnancy [1,2]. Traditionally regarded as a physiological skin change, SG has been increasingly associated with significant psychological distress, including diminished self-esteem and heightened anxiety [3, 4]. Moreover, the presence of SG, particularly when severe, can lead to an overall deterioration in QoL, influencing both emotional and social aspects of daily living [5,6].

The etiology of SG is complex and multifactorial. Genetic predisposition, hormonal fluctuations (notably elevated estrogen, progesterone, and relaxin), and mechanical forces that disrupt the collagen and elastin network all contribute to the development of these lesions [7,8]. Extrinsic factors, such as a higher body mass index (BMI), rapid weight gain, and multiparity, have also been implicated in the severity of SG [9,10].

The emphasis on physical appearance can lead to a heightened psychosocial burden for individuals who may feel pressured to conform to these standards [2, 3]. This pressure can affect various aspects of life, including mental health, self-esteem, and social interactions. Given that societal norms are often deeply ingrained, those who struggle with meeting these beauty ideals may experience significant emotional distress, further exacerbating their quality of life (QoL) [1, 11]. However, local data are limited, and there is a clear need to investigate the impact of SG on QoL within this cultural context [11, 12].

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Recent technological advancements in imaging and molecular diagnostics, such as histopathological analyses and laser therapies, have begun to unravel the underlying biological mechanisms of SG, offering potential avenues for early intervention [13, 14]. These developments not only enhance our understanding of SG pathogenesis but also support the rationale for novel therapeutic strategies aimed at reducing lesion severity and its associated psychological burden [15]. Cultural perceptions and societal expectations regarding physical appearance vary across regions [16,17]. Studies suggest that women in different cultural settings may experience varying levels of distress associated with SG [16, 19]. This variability underscores the importance of conducting region-specific studies to design culturally sensitive interventions and counseling programs for pregnant women experiencing SG [18, 20, 21].

Methods

Study design and samples

This cross-sectional study was conducted from January 2024 to December 2024. A total of 150 pregnant women aged 18 years or older with striae gravidarum (SG) were included. Those with systemic diseases (such as diabetes, hypertension, or liver disease) and those who use topical or systemic corticosteroids were excluded.

Data collection

Data were collected via a structured, self-administered online questionnaire designed to merge clinical and psychosocial assessments. The questionnaire comprised three sections: 1). Demographic and Obstetric Information: Participants provided details on their age, number of previous pregnancies (parity), gestational age, and weight before and after pregnancy and medical history. 2). SG Severity Assessment: SG severity was measured using Davey's scoring system [22, 23]. The abdomen was divided into four quadrants, each scored as follows: 0: No striae; 1: Few striae; 2: Many striae The total score (ranging from 0 to 8) was then categorized as: 0: Absent; 1–2: Mild; 3–8: Severe. 3). Quality of Life Assessment: Quality of life was measured using the Skindex-16 questionnaire, which assesses three domains—symptoms, emotions, and functioning across 16 items [24, 25]. Each item is rated on a 7-point Likert scale, with higher scores indicating a greater negative impact on QoL. The instrument's validity has been further supported by studies employing WHOQOL-BREF [26, 27].

Statistical analysis

Data were analyzed using SPSS version 25. Continuous data are presented as means ± standard deviation (SD), and a p-value of less than 0.05 was considered statistically significant.

Results

The study included 150 Libyan women with a history of pregnancy-related striae gravidarum. Demographic characteristics revealed that the majority (72%) were aged 20–40 years, with 36.7% reporting four or more prior pregnancies. A family history of striae gravidarum was reported by 64% of participants (Table 1).

Table 1. Demographic Characteristics of Participants (N = 150)

Characteristic	Category	Frequency (n)	Percentage (%)
Age (years)	< 20	10	6.7
	20–30	58	38.7
	31–40	50	33.3
	41–50	25	16.7
	> 50	7	4.7
Number of Pregnancies	1	35	23.3
	2–3	60	40.0
	≥ 4	55	36.7
Family History	Yes	96	64.0
	No	54	36.0

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Participants experienced a significant increase in post-pregnancy weight (mean: 73.2 ± 12.6 kg) compared to pre-pregnancy weight (mean: 64.5 ± 10.8 kg). (Table 2). Striae gravidarum were most prevalent on the abdomen (76%), followed by the thighs (54%) (Figures 1 and 2).

Table 2. Weight Changes Before and After Pregnancy (N = 150)

Parameter	Mean	Range (kg)
Pre-pregnancy weight	64.5 ± 10.8	42–92
Post-pregnancy weight	73.2 ± 12.6	50–105

Figure 1. Striae gravidarum in a primigravida woman.

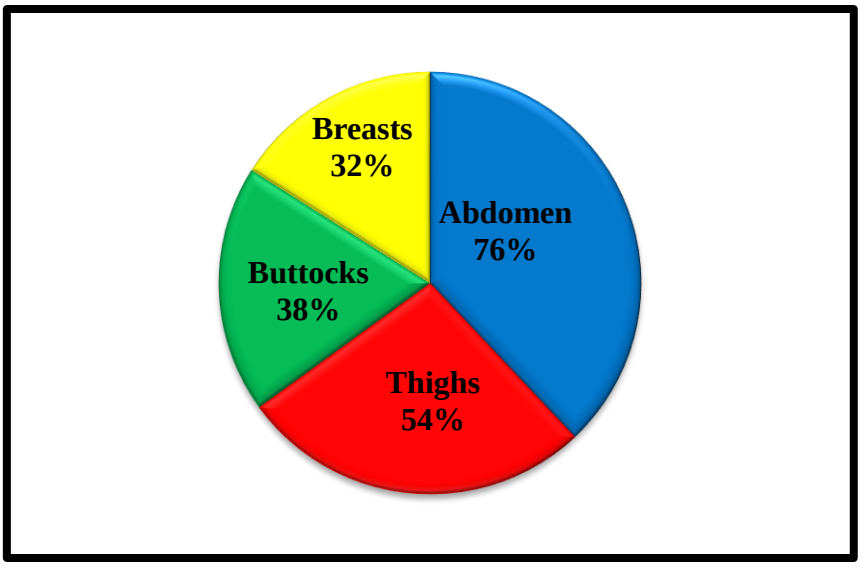

Figure 2. Anatomical site of striae gravidarum.

Rapid weight gain (52.7%) and repeated pregnancies (32%) were the most frequently perceived causes of striae gravidarum (Figure 3). Emotional and social impacts included intermittent embarrassment (45.3%), mild self-esteem concerns (29.3%), and occasional anxiety or depression (34.7%). Approximately 26.7% reported interpersonal challenges with partners (Table 3).

Quality of life (QOL) scores ranged from 7 to 21 (median: 16.5). Higher QOL scores were significantly associated with older age (>40 years; $p < 0.001$) and a family history of striae gravidarum ($p = 0.015$) (Table 4).

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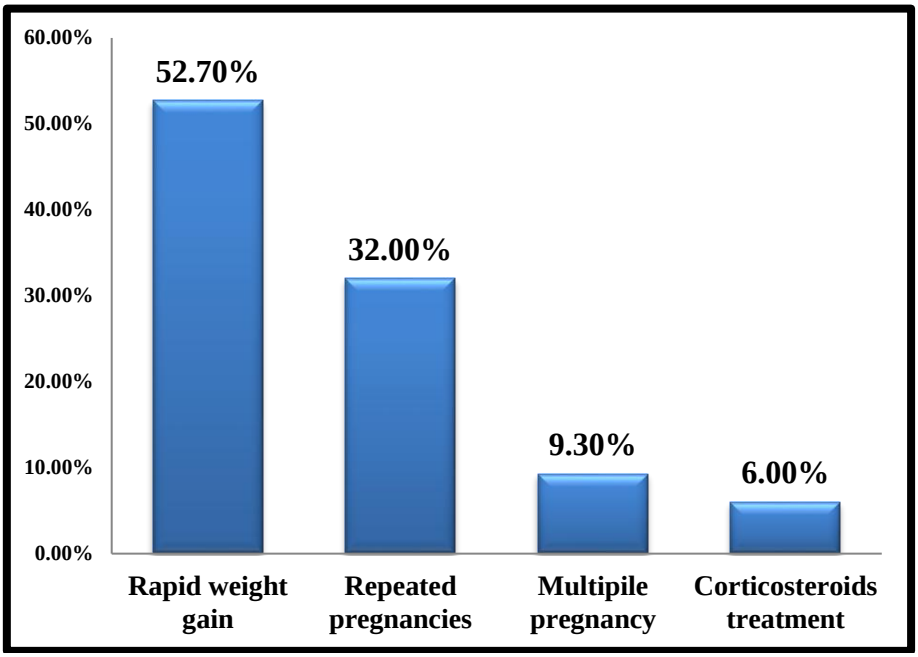

Figure 3. Perceived Causes of Striae Gravidarum

Table 3. Emotional and Social Impact

Impact Parameter	Category	Frequency (n)	Percentage (%)
Embarrassment Level	Most of the time	28	18.7
	Sometimes	68	45.3
	Rarely	54	36.0
Anxiety/Depression	Most of the time	22	14.7
	Sometimes	52	34.7
	Rarely	76	50.6
Self-Esteem Impact	Strong impact	20	13.3
	Mild impact	44	29.3
	No impact	86	57.4

Table 4. Factors Associated with QOL Scores (N = 150)

Factor	Median QOL	p-value
Age		
< 40 years	16	< 0.001
> 40 years	18	
Family history		
Yes	17.5	0.015
No	15	

Discussion

Our findings demonstrate that SG significantly impairs the dermatology-specific QoL in Libyan pregnant women. Consistent with Karhade et al. [4], our data indicate that women with severe SG experience considerably higher levels of emotional distress, which detrimentally affects their daily functioning and overall well-being. This study corroborates earlier reports by Nusrat et al. [5] and Gaber and Elshafie [6] regarding the psychosocial burden of SG.

A strong positive correlation between SG severity and adverse emotional outcomes was observed in our study. Lerdpienpitayakul et al., [1] previously highlighted that rapid dermal stretching during pregnancy predisposes women to more severe SG; our results extend these findings by demonstrating that such physical changes are closely linked to increased psychological distress. Additionally, the association between multiparity and heightened SG severity supports the observations of Latha and Haritha [19], suggesting that repeated skin stretching exacerbates lesion

development. Another finding underscore that the psychosocial burden of SG extends beyond mere cosmetic concerns, potentially impacting obstetric outcomes by exacerbating stress during pregnancy. Psychological stress, including body image dissatisfaction, may adversely affect both maternal well-being and fetal development [20, 21]. In our study, the observed correlation between SG severity and diminished QoL—particularly within emotional and functional domains, aligns with previous research demonstrating that visible skin changes can trigger significant social and interpersonal challenges [4–6, 22].

Cultural factors appear to further amplify these effects. As noted in regional investigations, women in societies with strong aesthetic norms may experience heightened distress and social isolation [17, 23]. In Libya, where aesthetic standards are highly valued, the presence of visible SG may lead to significant self-consciousness and social withdrawal, thereby exacerbating the overall psychological burden [12, 24]. Consequently, integrating routine psychological screening and culturally tailored counseling into prenatal care protocols could mitigate these negative outcomes [25].

Our findings demonstrate that SG significantly impairs the dermatology-specific QoL in Libyan pregnant women, particularly in emotional and social domains. This aligns with global studies, though nuanced differences emerge when contextualizing cultural, demographic, and methodological variables. For instance, the median QoL score (16.5 via Skindex-16) in our cohort mirrors the DLQI scores reported by Gaber and Elshafie (2021) in Egypt (mean DLQI: 16.09), where severe SG was strongly associated with diminished QoL. Similarly, Alqurashi et al. (2024) in Saudi Arabia observed comparable QoL impacts (median: 17.5), with older age and Arab ethnicity linked to higher QoL—a finding that parallels our observation of age-related resilience (>40 years, $p < 0.001$). However, cultural perceptions diverged: while Saudi participants reported elevated QoL among Arab women, potentially due to normalized aesthetic expectations, Libyan women emphasized partner-related challenges (26.7%) and social embarrassment (45.3%), underscoring region-specific psychosocial stressors.

Notably, contradictions emerged regarding preventive measures. In Saudi Arabia, women using preventive methods had lower QoL scores ($p = 0.017$), possibly reflecting frustration with ineffective interventions, whereas Gaber and Elshafie (2021) found Egyptian women who used preventive creams reported higher QoL, suggesting perceived efficacy or cultural optimism [6, 28]. This dichotomy highlights the need for standardized, evidence-based preventive guidelines. Further, multiparity exacerbated QoL impairment in Libyan and Egyptian cohorts, consistent with Alqurashi et al. (2025), who noted lower QoL in women with ≥4 pregnancies [28]. Conversely, Karhade et al. (2021) in the U.S. identified younger age as a risk factor for self-esteem decline, contrasting with Libyan and Saudi data, where older women exhibited better coping mechanisms [4].

Conclusion

Striae gravidarum significantly impair the dermatology-specific QoL in Libyan pregnant women, with severe cases being associated with considerable emotional distress and functional limitations. Routine psychological counseling combined with emerging dermatologic treatments may improve outcomes for these women.

Conflicts of interest

There are no conflicts of interest.

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