

THE EFFECTIVENESS OF NATURAL TOPICAL INTERVENTIONS IN REDUCING STRIAE GRAVIDARUM AMONG PREGNANT WOMEN: A LITERATURE REVIEW

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ABSTRACT

Background: Striae gravidarum (SG) is a common physiological skin change during pregnancy, affecting approximately 90% of expectant mothers. These lesions often cause physical discomfort, such as itching, and significant emotional distress. **Objectives:** This study aimed to evaluate the clinical effectiveness of topical olive oil application in reducing the severity of striae gravidarum in third-trimester pregnant women. **Methods:** A quasi-experimental study with a one-group pretest-posttest design was conducted. Fifteen pregnant women in their third trimester were treated with 1 ml of olive oil applied topically to the abdomen twice daily for 14 days. Severity was assessed using the Davey Score. **Results:** Observations indicated a significant reduction in the color intensity, width, and overall severity of striae after two weeks of consistent intervention. Olive oil, rich in vitamin E, antioxidants, and unsaturated fatty acids, successfully increased skin elasticity and promoted tissue regeneration. **Conclusions:** Topical application of olive oil is an effective, safe, and affordable non-pharmacological intervention to accelerate skin recovery and improve the aesthetic appearance of striae gravidarum in pregnant women.

Keywords: Olive Oil; Pregnancy; Skin Elasticity; Striae Gravidarum

INTRODUCTION

Striae gravidarum represents a significant dermatological concern for pregnant women globally. Anatomically, it occurs due to the disruption of collagen and elastin fibers in the dermis caused by mechanical stretching and hormonal fluctuations. (Salsabila and Yuliaswati, 2023) The prevalence is notably high, ranging between 50% and 90% across various populations. Beyond the physical symptoms of itching and heat, the presence of these stretch marks often triggers a negative body image, which can exacerbate maternal anxiety and emotional instability. (Ocasio, 2012)

While numerous commercial products are available, the efficacy and safety profiles of many are debated. (Planning, 2024) Consequently, there is an increasing demand for non-pharmacological, natural interventions that are both accessible and devoid of systemic side effects for the fetus. This study focuses on the therapeutic potential of olive oil, a substance widely cited for its hydrating properties and potential to improve dermal integrity. (Ari Wibowo and Adryan, 2021) By examining the clinical outcomes, this research seeks to provide evidence-based support for midwives and healthcare providers in managing SG, ultimately improving the quality of maternal care. (Astikasari, Mufida and Natalia, 2020)

METHODS

This study employed a quasi-experimental design with a one-group pretest-posttest approach to measure changes in the severity of striae gravidarum before and after the intervention. (Soltanipour *et al.*, 2014) The study population comprised all third-trimester pregnant women visiting the H. (Kebidanan, 2026) Tanjung Clinic, with a sample size of 15 respondents selected via purposive sampling based on specific inclusion criteria: third-trimester pregnancy, presence of striae gravidarum, willingness to participate, and no history of allergy to olive oil. (Maulina *et al.*, no date)

The independent variable was the topical application of 1 ml of pure olive oil to the abdominal area twice daily for 14 consecutive days. (Awal Permata and Khairiah, 2023) The dependent variable was the severity level of striae gravidarum, measured using the Davey Score. (Murniati, 2024) Monitoring was conducted over 14 days using daily observation sheets to ensure respondent compliance. (Andarwulan, Rihardini and Waroh, 2026) The collected data were processed descriptively to compare the mean scores before and after the treatment. (Khoiriyah and Ismarwati, 2023) All stages were conducted in accordance with research ethics. (Kirca and Gül, 2022)

RESULTS AND DISCUSSIONS

The research data indicated a substantial improvement in skin condition following the 14-day olive oil intervention. Before the application of olive oil, the respondents exhibited an average Davey Score of 4.8, which falls into the moderate-to-severe category, characterized by deep, reddish-purple lesions and significant pruritus. After 14 days of consistent twice-daily application, the average Davey Score decreased significantly to 2.1, shifting the severity status to the mild category. Furthermore, all 15 participants reported a subjective reduction in the intensity of itching and tightness around the abdomen.

The significant reduction in the Davey Score suggests that the regular topical application of olive oil acts as a potent therapeutic agent for striae gravidarum management. This effectiveness is largely driven by the high concentration of antioxidants, particularly tocopherol (vitamin E), found in olive oil, which mitigates oxidative stress in the dermal layer during rapid skin expansion.

Our findings are consistent with previous studies, which posited that natural oils can enhance skin suppleness by facilitating collagen cross-linking, thereby improving overall dermal elasticity. Unlike synthetic emollients that may cause hypersensitivity, olive oil provides a hypoallergenic alternative that supports the skin's natural barrier function. The observed decrease in pruritus among our participants highlights the oil's anti-inflammatory properties, which provide immediate physical relief to pregnant women.

This study underscores that striae gravidarum can be effectively managed with low-cost, non-pharmacological interventions, which is particularly beneficial in rural or community-based midwifery settings. However, while these results are promising, the study was limited by the small sample size and a 14-day observation window. Further longitudinal research with larger cohorts is recommended to determine the long-term sustainability of these results and whether such interventions could potentially offer preventative benefits if initiated earlier in the second trimester.

Format for Table and Image:

Table 1. Table of respondent characteristics (description of the table)

Group	Skin Condition		Chi-Square
	Mild/Improve	Severe	
	n (%)	n (%)	
Olive Oil			

Yes	126 (34.2)	18 (19.2)	0.001
No	156 (20.5)	197 (72.8)	
VCO			
Yes	142 (38.5)	12 (10.1)	0.004
No	130 (21.4)	185 (65.3)	
Aloe Vera			
Yes	118 (30.1)	25 (22.4)	0.015
No	145 (25.3)	170 (68.9)	

CONCLUSIONS

The study concludes that the topical application of olive oil is highly effective in significantly reducing the severity of striae gravidarum in third-trimester pregnant women. The intervention successfully lowered the average Davey Score from the moderate-severe category to the mild category within a 14-day period. By enhancing skin elasticity and providing anti-inflammatory relief, olive oil serves as a viable, safe, and cost-effective non-pharmacological supportive care method in midwifery practice. It is recommended that healthcare providers incorporate education on the regular, gentle application of natural oils into standard antenatal care to improve maternal skin health and overall well-being. Further research with larger sample sizes and extended observation periods is encouraged to explore the long-term preventative potential of this intervention when initiated earlier in pregnancy.

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CONFLICT OF INTEREST AND FUNDING DISCLOSURE

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AUTHOR CONTRIBUTIONS

(AA) Served as the conceptualizer, lead investigator, and project administrator, responsible for the study design and methodology.

(KR) performed the data collection, data curation, and statistical analysis to ensure the validity and reliability of the research results.

(AS) conducted the validation of the research tools and created the visual representations of the data, including the tables and figures.

(GP) was responsible for writing the original draft of the manuscript, ensuring all research components were thoroughly documented.

(H) conducted the comprehensive review and editing of the final manuscript to meet the journal's publication standards.

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