

The Relationship Between Post-Acne Scars and Quality of Life Among Medical Students of FK UNAND, Padang, Indonesia

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ABSTRACT

Post-acne scars are a condition of skin layer damage due to the healing process of acne vulgaris, causing the skin to appear depressed. This condition disrupts facial aesthetics and may become permanent, thereby affecting the patient's psychological condition and quality of life. This study aimed to determine the relationship between the severity of post-acne scars and the quality of life among medical students of FK UNAND, Padang, Indonesia. This study was an analytic observational study with a cross-sectional design conducted from June to December 2023. The population consisted of medical students of FK UNAND batch 2020–2022 who had acne scars. The total sample was 88 respondents selected using consecutive sampling. Data were collected using the Facial Acne Scar Quality of Life (FASQOL) questionnaire and Dysmorphic Concern Questionnaire (DCQ). Statistical analysis was performed using One-Way ANOVA and Fisher's Exact Test. The results showed that most respondents were female and aged 21 years. The majority experienced mild acne scars (46.6%). The mean FASQOL score was 14.11. Most respondents felt disturbed by the presence of acne scars on their face. The DCQ results showed that 88.6% of respondents had no dysmorphic disorder features. There was no significant relationship between acne scar severity and quality of life ($p=0.938$) nor dysmorphic disorder ($p=0.241$). The study concluded that there was no relationship between the severity of post-acne scars and the quality of life among medical students of FK UNAND, Padang, Indonesia.

Keywords:

Acne Scars, Dysmorphic Disorder, Quality of Life, Scar Severity, FASQOL.

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1. INTRODUCTION

Post-acne scars are skin disorders caused by excessive inflammatory responses to Cutibacterium acnes during acne vulgaris healing, resulting in depressed or irregular skin surfaces that may persist permanently. Acne scars can interfere with facial aesthetics and negatively affect psychological well-being and social interaction. Approximately 95% of patients with acne may develop acne scars during the course of the disease. Data from the Dermatology and Venereology Outpatient Clinic of RSUP Dr. M. Djamil Padang from 2016 to 2018 showed that 39.2% of patients with acne experienced post-acne scars, mainly due to delayed dermatological consultation. Several studies among university students also reported high prevalence of acne scars, especially among adolescents and young adults.

The development of acne scars is influenced by several factors, including acne severity, delayed treatment, sun exposure, and physical manipulation, such as squeezing or scratching acne lesions. Acne scars may persist for a long time and cause psychological disturbances, including embarrassment, decreased self-confidence, social withdrawal, anxiety, stress, and depression. The Facial Acne Scar Quality of Life (FASQOL) is an instrument used to assess the impact of acne scars on emotional and social functioning. In addition, the Dysmorphic Concern Questionnaire (DCQ) can be used to assess dysmorphic concerns associated with physical appearance. Although several studies have demonstrated the psychosocial burden caused by acne scars, studies specifically evaluating the relationship between acne scar severity and quality of life among Indonesian medical students are limited. Therefore, this study aimed to determine the relationship between post-acne scar severity and quality of life among medical students at FK UNAND, Padang, Indonesia.

2. METHOD

This was an analytic observational study with a cross-sectional design. The study was conducted from June to December 2023 at RSUP Dr. M. Djamil Padang and Griya Satya Dermatology Clinic. The population consisted of undergraduate medical students of the Faculty of Medicine, Universitas Andalas, batch 2020–2022, totaling 734 students. The study sample included students diagnosed with facial acne scars by dermatology residents who met the inclusion criteria and agreed to participate by signing informed consent forms. The minimum sample size was calculated using the Slovin formula with a confidence level of 95%, resulting in 88 respondents. Consecutive sampling was used until the required sample size was reached. The inclusion criteria were active undergraduate medical students from the 2020–2022 batch who had facial acne scars diagnosed by dermatology residents and agreed to participate. The exclusion criteria included respondents with other facial skin diseases interfering with diagnosis, respondents currently undergoing psychotherapy or using psychotropic medications, and incomplete questionnaire responses. The independent variable in this study was post-acne scar severity, classified into macular, mild, moderate, and severe categories according to the Goodman and Baron classification. The dependent variables were QoL and dysmorphic disorder features.

Quality of life was assessed using the Indonesian version of the Facial Acne Scar Quality of Life (FASQOL) questionnaire, while dysmorphic concern was assessed using the Dysmorphic Concern Questionnaire (DCQ). Data analysis included univariate and bivariate analyses. Normality testing was performed using the Shapiro-Wilk test, and homogeneity testing was conducted before further statistical analysis. One-way ANOVA was used to assess the relationship between acne scar severity and quality of life. Fisher's Exact Test was used to assess the relationship between acne scar severity and dysmorphic disorder because the chi-square assumptions were not fulfilled. Statistical significance was set at $p < 0.05$.

3. RESULTS AND DISCUSSION

3.1. Respondent Characteristics

A total of 88 respondents participated in this study. The majority of respondents were aged 21 years (34.1%), followed by 20 years (26.1%) and 19 years (19.3%). Female respondents accounted for 52.3% of the total, while male respondents accounted for 47.7%. The higher prevalence among female respondents may be associated with greater concern regarding facial appearance and increased awareness of skin conditions.

Table 1. Sample distribution

Variable	Frequency	(%)
Age		
17	1	1,1
18	2	2,3
19	17	19,3
20	23	26,1
21	30	34,1
22	14	15,9
23	1	1,1
Gender		
Male	42	47,7
Female	46	52,3

3.2. Distribution of Acne Scar Severity

The most common acne scar severity was mild acne scars (46.6%), followed by macular (29.5%), moderate (14.8%), and severe (9.1%) scars. Most respondents experienced mild acne scars because respondents generally had adequate knowledge regarding skincare and acne treatment.

Table 2. Distribution of Acne Scar Severity		
Acne Scar Severity	Frequency	(%)
Macular	26	29,5
Mild	41	46,6
Moderate	13	14,8
Severe	8	9,1
Total	88	100

3.3. Quality of Life Assessment

The mean total FASQOL score among respondents was 14.11, with a standard deviation of 7.571. The highest mean indicator was the feeling of being disturbed by facial acne scars. These findings indicate that acne scars mainly affect respondents psychologically, especially regarding self-confidence and physical appearance.

Table 3. Mean FASQOL Scores		
Variable	Mean	Standard Deviation
Total FASQOL Score	14.11	7.571
Quality of Life Impairment Indicators		
Embarrassment/lack of confidence	1.89	1.066
Feeling less attractive	2.06	1.054
Disturbed by facial acne scars	2.18	1.180
Worried scars will not disappear	2.16	1.258
Feeling sad	1.70	1.041
Disturbed by negative comments	1.66	1.321
Avoiding social environment	0.60	0.891
Disturbed due to hiding scars	1.15	1.120
Disturbed relationship with others	0.33	0.690
Reduced participation at school/work	0.40	0.736

3.4. Distribution of Dysmorphic Disorder Features

Most respondents did not demonstrate features of dysmorphic disorder (88.6%). Only 10.2% had subclinical dysmorphic disorder features, and 1.1% had clinical dysmorphic disorder features. The majority of respondents demonstrated adequate coping mechanisms and emotional adaptation to their skin condition.

Table 4. Distribution of Dysmorphic Disorder Features		
Variable	Frequency (n)	Percentage (%)
No dysmorphic disorder features	78	88.6
Subclinical dysmorphic disorder	9	10.2
Clinical dysmorphic disorder	1	1.1
Total	88	100

3.5. Relationship Between Acne Scar Severity and Quality of Life

The mean FASQOL score was highest among respondents with macular scars (14.69) and lowest among respondents with severe scars (13.00). Statistical analysis using One-Way ANOVA showed no significant relationship between acne scar severity and quality of life ($p=0.938$).

Table 5. Relationship Between Acne Scar Severity and Quality of Life	
Acne Scar Severity	Mean FASQOL Score
Macular	14.69
Mild	13.83
Moderate	14.54
Severe	13.00

3.6. Relationship Between Acne Scar Severity and Dysmorphic Disorder

The proportion of respondents without a dysmorphic disorder was higher among those with macular and mild scars (91.0%) than among those with moderate and severe scars (81.0%). However, Fisher's Exact Test showed no significant relationship between acne scar severity and dysmorphic disorder ($p=0.241$).

Table 6. Relationship Between Acne Scar Severity and Dysmorphic Disorder

Acne Scar Severity	No Dysmorphic Disorder n (%)	Dysmorphic Disorder n (%)	Total n (%)
Macular–Mild	61 (91.0%)	6 (9.0%)	67 (100%)
Moderate–Severe	17 (81.0%)	4 (19.0%)	21 (100%)
Total	78 (88.63%)	10 (11.36%)	88 (100%)

This study demonstrated that most respondents experienced mild acne scarrings. The predominance of mild acne scars may be related to better awareness of skincare and acne treatment among medical students. The highest FASQOL scores were related to dissatisfaction with facial appearance and concerns regarding permanent scars. These findings are consistent with previous studies showing that acne scars mainly affect emotional and psychological aspects. Despite these psychosocial disturbances, statistical analysis showed no significant relationship between acne scar severity and quality of life. This finding may be explained by the predominance of mild acne scars and relatively good coping mechanisms among respondents. Most respondents did not demonstrate features of dysmorphic disorders. Medical students may possess better emotional adaptation and health literacy that help reduce excessive dysmorphic concern.

4. CONCLUSION

There was no statistically significant relationship between post-acne scar severity and quality of life among the medical students of FK UNAND, Padang, Indonesia. Most respondents experienced mild acne scars and did not exhibit features of dysmorphic disorder.

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REFERENCES

- [1] S. W. Yenny, "Acne: Clinico-Epidemiological Study in Dermatology-Venereology Outpatient Clinic of Dr. M. Djamil Hospital Padang During January 2016 – December 2018," *Int. J. Pharmtech Res.*, vol. 13, no. 4, pp. 325–328, 2020.
- [2] Y. H. Say, A. H. S. Heng, K. Reginald, Y. R. Wong, K. F. Teh, S. M. R. Shah, *et al.*, "Modifiable and non-modifiable epidemiological risk factors for acne, acne severity and acne scarring among Malaysian Chinese: A cross-sectional study," *BMC Public Health*, vol. 21, no. 1, p. 601, 2021.
- [3] J. Tan, S. Beissert, F. Cook-Bolden, R. Chavda, J. Harper, A. Hebert, *et al.*, "Impact of Facial Atrophic Acne Scars on Quality of Life: A Multi-country Population-Based Survey," *Am. J. Clin. Dermatol.*, vol. 23, no. 1, pp. 115–123, 2022.
- [4] Y. Erdoğan, İ. Erturan, E. Aktepe, and A. Akyıldız, "Comparison of Quality of Life, Depression, Anxiety, Suicide, Social Anxiety and Obsessive–Compulsive Symptoms Between Adolescents with Acne Receiving Isotretinoin and Antibiotics: A Prospective, Non-randomised, Open-Label Study," *Pediatr. Drugs*, vol. 21, no. 3, pp. 195–202, 2019.
- [5] World Health Organization, *WHOQOL User Manual Programme on Mental Health Division of Mental Health and Prevention of Substance Abuse*. Geneva, Switzerland: WHO, 2012.
- [6] A. Layton, B. Dréno, A. Y. Finlay, D. Thiboutot, S. Kang, V. T. Lozada, *et al.*, "New Patient-Oriented Tools for Assessing Atrophic Acne Scarring," *Dermatol. Ther. (Heidelb.)*, vol. 6, no. 2, pp. 219–233, 2016.
- [7] K. N. Rozzell, C. Carter, A. D. Convertino, M. Gonzales, and A. J. Blashill, "The Dysmorphic Concern Questionnaire: Measurement invariance by gender and race/ethnicity among sexual minority adults," *Body Image*, vol. 35, pp. 201–206, 2020.
- [8] R. Graham-Brorman, K. Harman, and G. Johnston, *Dermatology Lecture Notes*, 11th ed. Wiley-Blackwell, 2016, pp. 54–62.
- [9] G. J. Goodman, "Management of Post-Acne Scarring," *Am. J. Clin. Dermatol.*, vol. 1, no. 1, pp. 3–17, 2000.
- [10] A. E. Slemper and R. E. Kirschner, "Keloids and scars: A review of keloids and scars, their pathogenesis, risk factors, and management," *Curr. Opin. Pediatr.*, vol. 18, no. 4, pp. 396–402, 2006.
- [11] L. Patel, D. McGrouther, and K. Chakrabarty, "Evaluating evidence for atrophic scarring treatment modalities," *JRSM Open*, vol. 5, no. 9, 2014.

- [12] D. Wolfram, A. Tzankov, P. Pülzl, and H. Piza-Katzer, "Hypertrophic Scars and Keloids—A Review of Their Pathophysiology, Risk Factors, and Therapeutic Management," *Dermatol. Surg.*, vol. 35, no. 2, pp. 171–181, 2009.
- [13] D. B. Holland, A. H. T. Jeremy, S. G. Roberts, D. C. Seukeran, A. M. Layton, and W. J. Cunliffe, "Inflammation in acne scarring: A comparison of the responses in lesions from patients prone and not prone to scar," *Br. J. Dermatol.*, vol. 150, no. 1, pp. 72–81, 2004.
- [14] D. B. Holland and A. H. T. Jeremy, "The Role of Inflammation in the Pathogenesis of Acne and Acne Scarring," *Semin. Cutan. Med. Surg.*, vol. 24, no. 2, pp. 79–83, 2005.
- [15] D. Connolly, H. L. Vu, K. Mariwalla, and N. Saedi, "Acne Scarring-Pathogenesis, Evaluation, and Treatment Options," *J. Clin. Aesthet. Dermatol.*, vol. 10, no. 9, pp. 12–23, 2017.
- [16] G. J. Goodman and J. A. Baron, "Postacne Scarring: A Qualitative Global Scarring Grading System," *Dermatol. Surg.*, vol. 32, no. 12, pp. 1458–1466, 2006.
- [17] C. I. Jacob, J. S. Dover, and M. S. Kaminer, "Acne scarring: A classification system and review of treatment options," *J. Am. Acad. Dermatol.*, vol. 45, no. 1, pp. 109–117, 2001.
- [18] H. Riski and R. Sasongko, "Penatalaksanaan Skar Akne (Acne Scar Management)," *Berkala Ilmu Kesehatan Kulit dan Kelamin*, vol. 23, no. 3, pp. 234–239, 2011.
- [19] A. Al-Attar, S. Mess, J. M. Thomassen, C. L. Kauffman, and S. P. Davison, "Keloid Pathogenesis and Treatment," *Plast. Reconstr. Surg.*, vol. 117, no. 1, pp. 286–300, 2006.
- [20] Faculty of Medicine Universitas Airlangga, "Keloid & Parut Hipertrofik," 2019. [Online]. Available: <https://spesialis1.bpre.fk.unair.ac.id/keloid-parut-hipertrofik.html>
- [21] N. Bouzari, S. C. Davis, and K. Nouri, "Laser treatment of keloids and hypertrophic scars," *Int. J. Dermatol.*, vol. 46, no. 1, pp. 80–88, 2007.
- [22] D. A. Istiningdyah, "Faktor-Faktor yang Mempengaruhi Terjadinya Skar Akne," undergraduate thesis, Universitas Diponegoro, Semarang, Indonesia, 2012.
- [23] S. Murlistyarini and N. L. Nahlia, "Evaluasi Teknik Cross TCA 70% terhadap Skar Akne Atrofi pada Kulit Fitzpatrick Tipe IV," 2021.
- [24] R. N. Rohmah, "Microneedling dengan Platelet-rich Plasma (PRP) untuk Skar Akne Atrofi," *CDK J.*, vol. 48, no. 9, 2021.
- [25] K. Chilicka, M. Rusztowicz, R. Szyguła, and D. Nowicka, "Methods for the Improvement of Acne Scars Used in Dermatology and Cosmetology: A Review," *J. Clin. Med.*, vol. 11, no. 10, p. 2744, 2022.
- [26] M. V. Gozali, B. Zhou, and D. Luo, "Effective Treatments of Atrophic Acne Scars," *J. Clin. Aesthet. Dermatol.*, vol. 8, no. 5, 2015. [Online]. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4445894/pdf/jcad_8_5_33.pdf
- [27] M. T. Hession and E. M. Graber, "Atrophic acne scarring: A review of treatment options," *J. Clin. Aesthet. Dermatol.*, vol. 8, no. 1, pp. 50–58, 2015.
- [28] H. T. Sibero, "Full-Thickness Skin Grafts," *Juke Unila*, vol. 5, no. 9, 2015.
- [29] C. Bikash and R. Sarkar, "Topical management of acne scars: The uncharted terrain," *J. Cosmet. Dermatol.*, vol. 22, no. 4, pp. 1191–1196, 2023.
- [30] A. Palmer, "Causes of Acne Scars and How to Prevent Them," *Verywell Health*, 2021. [Online]. Available: <https://www.verywellhealth.com/what-causes-acne-scars-15517>
- [31] S. Sanghvi, "Preventing Acne Scars," *Lloyds Pharmacy Online Doctor*, 2020. [Online]. Available: <https://onlinedoctor.lloydspharmacy.com/uk/acne/acne-scars#preventing-acne-scars>
- [32] Centers for Disease Control and Prevention, "HRQOL Concepts," 2018. [Online]. Available: <https://www.cdc.gov/hrqol/concept.htm>
- [33] M. Rapley, *Quality of Life Research: A Critical Introduction*, vol. 13. Sage Publications, 2003, pp. 1021–1024.
- [34] P. F. Nowak, A. Božek, and M. Blukacz, "Physical Activity, Sedentary Behavior, and Quality of Life among University Students," *Biomed Res. Int.*, vol. 2019, pp. 1–10, 2019.
- [35] R. C. Estoque, T. Togawa, M. Ooba, K. Gomi, S. Nakamura, Y. Hijioka, *et al.*, "A review of quality of life (QOL) assessments and indicators: Towards a 'QOL-Climate' assessment framework," *Ambio*, vol. 48, no. 6, pp. 619–638, 2019.
- [36] F. Rencz, Á. Szabó, and V. Brodszky, "Questionnaire Modifications and Alternative Scoring Methods of the Dermatology Life Quality Index: A Systematic Review," *Value Health*, vol. 24, no. 8, pp. 1158–1171, 2021.
- [37] S. Chuah and C. Goh, "The impact of post-acne scars on the quality of life among young adults in Singapore," *J. Cutan. Aesthet. Surg.*, vol. 8, no. 3, p. 153, 2015.
- [38] S. M. Nadobudskaya, "Hubungan antara Kadar Hemoglobin dengan Kejadian Skar Akne pada Mahasiswa FK UPN Veteran Jakarta Tahun 2019," undergraduate thesis, Universitas Pembangunan Nasional Veteran Jakarta, Indonesia, 2020.
- [39] D. A. Agrawal and N. Khunger, "A Morphological Study of Acne Scarring and Its Relationship between Severity and Treatment of Active Acne," *J. Cutan. Aesthet. Surg.*, vol. 13, no. 3, pp. 210–216, 2020.

- [40] A. N. Utami, D. Hikmawati, and M. Y. Andarini, "Gambaran Kejadian Acne Vulgaris Berdasarkan Faktor–Faktor yang Memengaruhinya pada Siswa dan Siswi Kelas XII SMAN 6 Bandung Periode Mei–Juni Tahun 2023," *PharmacoMedic*, vol. 1, no. 1, pp. 23–30, 2023.
- [41] D. D. Lynn, T. Umari, C. A. Dunnick, and R. P. Dellavalle, "The epidemiology of acne vulgaris in late adolescence," *Adolesc. Health Med. Ther.*, vol. 7, pp. 13–25, 2016.
- [42] A. H. Sutaria, S. Masood, H. M. Saleh, and J. Schlessinger, "Acne Vulgaris," in *StatPearls*. Treasure Island, FL: StatPearls Publishing, 2023. [Online]. Available: <https://www.ncbi.nlm.nih.gov/books/NBK459173/>
- [43] P. Ludmann, "Acne scars: Consultation and treatment," *J. Am. Acad. Dermatol.*, 2023.
- [44] A. Nurutami, "Karakteristik Skar Akne pada Siswa Sekolah Menengah Atas Negeri 2, Sekolah Menengah Atas Negeri 3 dan Sekolah Menengah Atas Negeri 5 di Kota Mataram," undergraduate thesis, Universitas Mataram, Indonesia, 2019.
- [45] S. Porwal, Y. Chahar, and P. Singh, "A comparative study of combined dermaroller and platelet-rich plasma versus dermaroller alone in acne scars and assessment of quality of life before and after treatment," *Indian J. Dermatol.*, vol. 63, no. 5, p. 403, 2018.
- [46] N. Skroza, E. Tolino, A. Mambrin, S. Zuber, V. Balduzzi, A. Marchesiello, *et al.*, "Adult Acne Versus Adolescent Acne: A Retrospective Study of 1,167 Patients," *J. Clin. Aesthet. Dermatol.*, vol. 11, no. 1, pp. 21–25, 2018.
- [47] B. Dréno, J. Tan, S. Kang, M. J. Rueda, V. T. Lozada, V. Bettoli, *et al.*, "How People with Facial Acne Scars are Perceived in Society: An Online Survey," *Dermatol. Ther. (Heidelb)*, vol. 6, no. 2, pp. 207–218, 2016.