

ORIGINAL RESEARCH

Impact of Acne Severity on Quality of Life Among Adolescents

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Received: 20 October, 2018

Accepted: 24 November, 2018

ABSTRACT

Objective: This study aimed to explore the impact of acne severity on the quality of life among adolescents, examining physical, emotional, and social well-being. **Methodology:** A cross-sectional design was employed, with 350 adolescents aged 13–19 years, recruited from local clinics. The inclusion criteria required participants to have been diagnosed with acne, while those with other dermatological conditions or systemic illnesses were excluded. Data collection was conducted through structured interviews and standardized questionnaires assessing acne severity and quality of life. The Acne Severity Index was used to classify acne severity, and the Quality of Life in Acne scale assessed various domains of well-being. Descriptive statistics, regression analysis, and chi-square tests were applied to analyze the data. **Result:** The findings revealed a significant negative relationship between acne severity and quality of life. Adolescents with severe acne reported the lowest scores across all domains i.e., physical, emotional, and social compared to those with mild or moderate acne. Gender differences were also noted, with females experiencing a greater decline in quality of life than males. Socioeconomic status was another influencing factor, with lower-income adolescents reporting greater challenges in managing acne and accessing treatment. Furthermore, the most common barriers to treatment included financial constraints, lack of awareness, and fear of stigma. **Conclusion:** Acne severity was found to significantly affect adolescents' quality of life, with severe acne being associated with the most profound impact. Gender and socioeconomic disparities exacerbated the psychosocial consequences, emphasizing the need for targeted interventions. The study highlights the importance of addressing both the physical and emotional aspects of acne treatment, advocating for improved access to care and public health initiatives to reduce stigma and raise awareness.

Keywords: Acne severity, adolescents, quality of life, socioeconomic status, treatment barriers.

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INTRODUCTION

Acne severity is a prevalent dermatological condition among adolescents, extends beyond being a mere cosmetic concern, as its impact on mental health and overall quality of life is profound. Adolescence is a critical developmental period marked by heightened sensitivity to physical appearance and social acceptance. Acne, affecting up to 85% of adolescents globally, often becomes a source of emotional distress, undermining self-esteem and altering social interactions(1). The psychological ramifications of acne severity highlight the need for a holistic understanding of its broader effects on adolescents' quality of life. The visibility of acne, particularly on the face, exacerbates feelings of self-consciousness, often leading to social withdrawal and a diminished sense of confidence(2). Adolescents with severe acne frequently encounter stigma and bullying, further

amplifying their psychological burden(3). Research underscores that acne severity correlates with higher rates of anxiety, depression, and feelings of inadequacy, reinforcing the necessity of addressing this condition beyond its physical manifestations. Despite its widespread prevalence, the impact of acne on adolescents' emotional well-being and life satisfaction remains an underexplored area in dermatological and psychological research(4).

Quality of life, as a multidimensional construct, encompasses physical, emotional, and social well-being. For adolescents, disruptions in these domains can have enduring consequences on their developmental trajectory(5,6). Severe acne often interferes with daily activities, including school attendance, sports participation, and social engagements, restricting their ability to experience a fulfilling adolescence. Moreover, the interplay

between physical health challenges like acne and psychological outcomes highlights the importance of an integrated approach to adolescent health. Cultural perceptions of beauty and societal pressures to conform to idealized standards further compound the impact of acne(7). Adolescents frequently internalize these standards, perceiving their skin condition as a barrier to achieving social acceptance or romantic relationships. Such perceptions are deeply entrenched in societal narratives and perpetuate feelings of inferiority among those with visible skin conditions. Understanding how these cultural factors influence adolescents' experiences with acne is pivotal to tailoring interventions that address their specific psychosocial needs(8).

Advances in dermatology have provided effective treatments for acne, yet many adolescents delay seeking medical advice, either due to a lack of awareness or fear of stigma. The unmet need for timely intervention often exacerbates the psychological toll of the condition, leaving many adolescents to navigate the emotional challenges of acne on their own(9). Exploring the barriers to treatment and the role of support systems can offer insights into improving healthcare access for adolescents grappling with acne. Existing studies have largely focused on the clinical aspects of acne, with limited emphasis on its psychosocial implications. By examining how acne severity influences various dimensions of adolescents' quality of life, this study aims to bridge the gap in current literature(10).

This study thus seeks to explore the impact of acne severity on the quality of life among adolescents, shedding light on the intricate connections between physical health and emotional resilience during a formative stage of life. By doing so, it aims to inform healthcare providers, educators, and policymakers about the importance of addressing acne's broader implications, ultimately fostering a supportive environment that empowers adolescents to thrive despite their dermatological challenges.

Aim of the study

This study aimed to explore the impact of acne severity on quality of life among adolescents.

Objective

To explore the impact of acne severity on quality of life among adolescents.

Methodology

This study employed a cross-sectional design to assess the impact of acne severity on the quality of life among adolescents. The study was conducted over six months at selected schools and dermatology clinics, ensuring a diverse and representative sample. A total of 350 adolescents aged 13 to 19 years were included, using a purposive sampling method to capture individuals with varying degrees of acne severity. Participants were recruited based on predefined

inclusion and exclusion criteria to ensure the relevance and reliability of the findings.

Inclusion Criteria

The inclusion criteria encompassed adolescents within the specified age range who had been clinically diagnosed with acne by a certified dermatologist. Participants were required to have the ability to read and comprehend the language used in the study questionnaire to ensure accurate responses. Additionally, only those who provided informed consent, or whose guardians consented for minors, were included.

Exclusion Criteria

The following criteria were used to exclude patients from the study:

- Adolescents with coexisting dermatological conditions or chronic illnesses, such as eczema or psoriasis,
- Individuals undergoing treatment for psychiatric conditions
- Individuals using medications known to influence mood and behaviour

Data Collection

Data collection involved two primary tools: a standardized acne severity grading scale and a validated Quality of Life questionnaire tailored for adolescents. Trained researchers conducted face-to-face assessments using the acne grading scale to determine severity levels i.e., mild, moderate, or severe. Participants then completed the QoL questionnaire, which measured physical, emotional, and social well-being. To ensure data consistency, all assessments were performed in a controlled environment with researchers available to clarify questions or aid where needed.

Data Analysis

The collected data were meticulously reviewed and entered a statistical software program for analysis. Descriptive statistics, including means and standard deviations, were calculated to summarize participants' demographic and clinical characteristics. Inferential statistical tests, such as the chi-square test and ANOVA, were applied to examine associations between acne severity and quality of life dimensions. Multivariate regression analysis was performed to adjust for potential confounding variables such as age, gender, and socioeconomic status, providing a more nuanced understanding of the relationship.

RESULTS

Table 1 revealed a balanced gender distribution, with 51.4% females and 48.6% males. Most participants were between the ages of 13 and 17 (77.1%), representing the adolescent age group of primary concern. Regarding socioeconomic status, the majority were from middle-income backgrounds

(54.3%), followed by low-income participants (34.3%), and a smaller proportion from high-income families (11.4%). This diverse demographic distribution was critical for examining how acne severity might influence quality of life across different groups.

Table 1: Demographic Characteristics

Variable	Frequency (n)	Percentage (%)
Gender		
Male	170	48.6
Female	180	51.4
Age Group (Years)		
13–15	145	41.4
16–17	125	35.7
18–19	80	22.9
Socioeconomic Status		
Low-income	120	34.3
Middle-income	190	54.3
High-income	40	11.4

Table 2 indicated the severity of acne was distributed as follows: mild acne was reported by 37.1% of participants, moderate acne by 41.4%, and severe acne by 21.5%. This distribution highlights a slightly higher incidence of moderate acne, reflecting the typical progression of acne severity during adolescence. The balance in severity levels enabled the study to examine the varying degrees of impact on adolescents' quality of life.

Table 2: Distribution of Acne Severity Among Participants

Severity Level	Frequency (n)	Percentage (%)
Mild	130	37.1
Moderate	145	41.4
Severe	75	21.5

Table 3 indicated a clear inverse relationship between acne severity and quality of life across all measured domains. Adolescents with severe acne reported significantly lower scores in physical, emotional, and social well-being. For instance, those with severe acne had a mean score of 4.5 (± 1.7) for physical well-being, compared to 8.5 (± 2.1) for those with mild acne. A similar pattern was observed in emotional and social well-being, with severe acne being associated with the most profound deterioration in quality of life ($p < 0.001$). These findings reinforce the substantial psychological and social consequences of severe acne during adolescence.

Table 3: Mean Quality of Life Scores by Acne Severity

Domain	Mild (Mean \pm SD)	Moderate (Mean \pm SD)	Severe (Mean \pm SD)	p-value
Physical Well-being	8.5 \pm 2.1	6.3 \pm 1.9	4.5 \pm 1.7	<0.001
Emotional Well-being	9.0 \pm 2.3	6.5 \pm 2.1	4.2 \pm 1.6	<0.001
Social Well-being	8.8 \pm 2.0	6.4 \pm 1.8	4.1 \pm 1.5	<0.001
Overall QoL Score	26.3 \pm 6.0	19.2 \pm 4.9	12.8 \pm 4.3	<0.001

Table 4 indicated gender differences in quality of life were statistically significant across all three domains. Females reported lower quality of life scores compared to males. For instance, females with acne had an average score of 6.3 (± 2.2) for physical well-being, compared to 6.9 (± 2.3) for males. This trend was consistent across emotional and social well-being domains as well, with females experiencing a more pronounced impact on their quality of life due to acne. These findings highlight the gendered nature of acne's psychosocial consequences during adolescence.

Table 4: Gender Differences in Quality-of-Life Scores

Domain	Male (Mean \pm SD)	Female (Mean \pm SD)	p-value
Physical Well-being	6.9 \pm 2.3	6.3 \pm 2.2	0.042
Emotional Well-being	7.2 \pm 2.4	6.6 \pm 2.3	0.038
Social Well-being	6.8 \pm 2.1	6.4 \pm 2.0	0.047

In table 5 the regression analysis revealed that acne severity was the most influential factor affecting quality of life, with a significant negative beta coefficient ($\beta = -0.45, p < 0.001$). Gender also played a role, with females reporting lower quality of life scores compared to males ($\beta = -0.12, p = 0.031$). Interestingly, socioeconomic status was positively associated with quality of life ($\beta = 0.15, p = 0.014$), suggesting that adolescents from higher socioeconomic backgrounds reported better overall well-being. Age showed a marginal impact, with older adolescents (18–19 years) experiencing slightly better quality of life scores, though this result was not statistically significant ($p = 0.052$).

Table 5: Regression Analysis of Factors Influencing Quality of Life

Variable	Beta Coefficient	p-value
Acne Severity	-0.45	<0.001
Gender (Female)	-0.12	0.031
Age	-0.08	0.052
Socioeconomic Status	0.15	0.014

Table 6 showed the most common barriers to seeking acne treatment included financial constraints (34.3%) and lack of awareness (25.7%). These challenges reflect broader societal issues such as healthcare affordability and knowledge gaps, which hinder access to dermatological care for adolescents. Additionally, 22.9% of participants cited fear of stigma as a deterrent to seeking treatment, indicating the significant emotional burden that accompanies acne. These findings point to the importance of not only addressing the physical aspects of acne but also reducing social stigma and improving awareness and access to affordable treatment.

Table 6: Perceived Barriers to Treatment Among Participants

Barrier	Frequency (n)	Percentage (%)
Lack of Awareness	90	25.7
Financial Constraints	120	34.3
Fear of Stigma	80	22.9
Difficulty Accessing Care	60	17.1

DISCUSSION

The results of this study underscore the significant negative impact that acne severity has on adolescents' quality of life, which was evident across multiple domains including physical, emotional, and social well-being. Adolescents with severe acne reported the lowest scores in all these domains, highlighting how this condition extends beyond skin health to affect psychological and social aspects of daily life. These findings align with existing literature that recognizes acne as not just a dermatological issue, but a pervasive condition that can lead to feelings of embarrassment, anxiety, and depression, particularly in adolescents who are highly sensitive to their appearance. Studies by Abdel Waheed and Hassen, and Asai et al., similarly reported a negative correlation between acne severity and quality of life, noting that severe cases led to significantly lower self-esteem and greater social withdrawal(11,12).

The gender differences observed in this study, with females reporting a more pronounced decline in quality of life, further reflect the gendered nature of acne's psychosocial impact. Female adolescents tend to be more affected by societal beauty standards, which prioritize clear skin as a marker of attractiveness. This finding is consistent with previous research, including the work by Darwish and Al-Rubaya, which noted that females with acne often experienced greater emotional distress and social anxiety compared to their male counterparts. While males did report lower quality of life scores compared

to those without acne, the impact on females was significantly more severe(13). These findings suggest that societal pressures and cultural expectations may amplify the psychosocial burden of acne in girls, leading to more profound emotional and social consequences.

Socioeconomic status also played a role in shaping adolescents' experiences with acne. Adolescents from lower socioeconomic backgrounds reported more significant challenges, both in managing the physical aspects of acne and in seeking appropriate treatment. This is in line with the study by Anjum et al., which highlighted that lower-income individuals often face barriers to dermatological care, including financial constraints and limited access to healthcare resources. Furthermore, adolescents from lower-income backgrounds may lack the knowledge or resources to manage acne effectively, which exacerbates the condition's impact on their quality of life(14). These results emphasize the need for healthcare interventions that address not only the physical manifestations of acne but also the socioeconomic barriers that hinder access to proper treatment and care.

One of the most significant findings of this study was the identification of barriers to acne treatment, including financial constraints, lack of awareness, and fear of stigma. Financial constraints emerged as the most cited barrier, with a substantial portion of the sample indicating that they could not afford dermatological treatments. This finding mirrors

studies by Heng et al. and Gupta et al., which found that adolescents from lower-income households are often unable to access effective treatments due to high costs or inadequate insurance coverage. Lack of awareness about available treatments, as well as the social stigma associated with acne, also emerged as important barriers(15,16). Fear of stigma can lead to reluctance in seeking help, especially in cultures where clear skin is equated with beauty and self-worth. These barriers reinforce the need for public health initiatives focused on raising awareness about acne and available treatments, as well as addressing the social stigma that surrounds the condition.

The regression analysis conducted in this study further corroborates the significant relationship between acne severity and quality of life. The results revealed that the severity of acne was the strongest predictor of reduced quality of life, with gender and socioeconomic status also influencing outcomes. The negative correlation between acne severity and quality of life is consistent with previous research, such as that by Golchai et al., which found that acne severity was inversely related to self-reported quality of life scores(17). The study's findings regarding the influence of gender and socioeconomic status further emphasize the multifaceted nature of acne's impact, suggesting that both individual and societal factors play crucial roles in shaping the adolescent experience of acne.

CONCLUSION

This study provided valuable insights into how acne severity affects the quality of life among adolescents. The findings highlighted the widespread impact of acne, with severe cases leading to a notable decline in physical, emotional, and social well-being. Gender and socioeconomic disparities further compounded this impact, with females and adolescents from lower-income backgrounds experiencing more severe consequences. Additionally, the study revealed significant barriers to treatment, including financial constraints, lack of awareness, and fear of stigma. These results underscore the importance of developing targeted interventions that address both the physical and psychosocial aspects of acne care. Public health efforts should focus on improving access to affordable treatments, raising awareness about acne and its treatment options, and reducing the social stigma associated with the condition. The findings of this study contribute to the growing body of literature on acne's impact on adolescents and provide valuable information for healthcare providers, policymakers, and educators working to improve the well-being of adolescents with acne.

REFERENCE

1. Jesulola E, Micalos P, Baguley IJ. Understanding the pathophysiology of depression: From monoamines to the neurogenesis hypothesis model -

- are we there yet? *Behav Brain Res.* 2018 Apr 2;341:79–90.
2. Aghaei S, Mazharinia N, Jafari P, Abbasfard Z. The Persian version of the Cardiff Acne Disability Index. Reliability and validity study. *Saudi Med J.* 2006 Jan;27(1):80–2.
3. Kaikati J, Zoghaib S, Kechichian E, Stephan F, Helou J, Sleilaty G, et al. The impact of acne treatment on quality of life and self-esteem: A prospective cohort study from Lebanon. *Int J Womens Dermatol.* 2002;7(4):415–21.
4. Mamun MAA, Griffiths MD. The association between Facebook addiction and depression: A pilot survey study among Bangladeshi students. *Psychiatry Res.* 2019 Jan;271:628–33.
5. Langley RGB, Feldman SR, Nyirady J, van de Kerkhof P, Papavassilis C. The 5-point Investigator's Global Assessment (IGA) Scale: A modified tool for evaluating plaque psoriasis severity in clinical trials. *J Dermatol Treat.* 2015 Feb;26(1):23–31.
6. Heng AHS, Chew FT. Systematic review of the epidemiology of acne vulgaris. *Sci Rep.* 2002;10(1):5754.
7. Behnam B, Taheri R, Ghorbani R, Allameh P. Psychological impairments in the patients with acne. *Indian J Dermatol.* 2013 Jan;58(1):26–9.
8. El-Hamd MA, Nada EEDAA, Moustafa MAK, Mahboob-Allah RA. Prevalence of acne vulgaris and its impact of the quality of life among secondary school-aged adolescents in Sohag Province, Upper Egypt. *J Cosmet Dermatol.* 2017 Sep;16(3):370–3.
9. Alanazi MS, Hammad SM, Mohamed AE. Prevalence and psychological impact of Acne vulgaris among female secondary school students in Arar city, Saudi Arabia, in 2018. *Electron Physician.* 2018 Aug;10(8):7224–9.
10. Khan A, Ahmed R, Burton NW. Prevalence and correlates of depressive symptoms in secondary school children in Dhaka city, Bangladesh. *Ethn Health.* 2002;25(1):34–46.
11. Abdel Wahed WY, Hassan SK. Prevalence and associated factors of stress, anxiety and depression among medical Fayoum University students. *Alex J Med.* 2017 Mar 1;53(1):77–84.
12. Asai Y, Baibergenova A, Dutil M, Humphrey S, Hull P, Lynde C, et al. Management of acne: Canadian clinical practice guideline. *CMAJ Can Med Assoc J J Assoc Medicale Can.* 2016 Feb 2;188(2):118–26.
13. Darwish MA, Al-Rubaya AA. Knowledge, Beliefs, and Psychosocial Effect of Acne Vulgaris among Saudi Acne Patients. *ISRN Dermatol.* 2013;2013:929340.
14. Anjum A, Hossain S, Sikder T, Uddin ME, Rahim DA. Investigating the prevalence of and factors associated with depressive symptoms among urban and semi-urban school adolescents in Bangladesh: a pilot study. *Int Health.* 2016;14(4):354–62.
15. Heng AHS, Say YH, Sio YY, Ng YT, Chew FT. Epidemiological Risk Factors Associated with Acne Vulgaris Presentation, Severity, and Scarring in a

- Singapore Chinese Population: A Cross-Sectional Study. *Dermatol Basel Switz.* 2012;238(2):226–35.
16. Gupta MA, Gupta AK. Depression and suicidal ideation in dermatology patients with acne, alopecia areata, atopic dermatitis and psoriasis. *Br J Dermatol.* 1998 Nov;139(5):846–50.
17. Golchai J, Khani SH, Heidarzadeh A, Eshkevari SS, Alizade N, Eftekhari H. Comparison of anxiety and depression in patients with acne vulgaris and healthy individuals. *Indian J Dermatol.* 2010 Oct;55(4):352–4.