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Original Research Article

Impact of alopecia areata on quality of life assessed by the dermatology life quality index: a cross-sectional study at a tertiary care hospital in Peshawar

Hira Rehman[1], Tooba Rehman[2], Ghafoor Ullah[1]*, Shameen Hashmi[3], Muhammad Aqib Faizan[4], Jannat Fatima[5], Muhammad Anas Khan[6], Marwah Rehman[7], Muneeb Ullah Khan[4]

[1]Department of Dermatology, Hayatabad Medical Complex, Peshawar, Pakistan
[2]Khyber Medical University, Peshawar, Pakistan
[3]Akhtar Saeed Medical & Dental College/Farooq Hospital, Lahore, Pakistan
[4]Gomal Medical College, Khyber Medical University, Peshawar, Pakistan
[5]Lahore Medical and Dental College, Lahore, Pakistan
[6]Rehman College of Dentistry, Khyber Medical University, Peshawar, Pakistan
[7]Northwest General Hospital & Research Centre, Peshawar, Pakistan

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***Correspondence:**
Dr. Ghafoor Ullah,
E-mail: dr_ghafoorullah@yahoo.com

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ABSTRACT

Background: Alopecia areata is a long-term autoimmune disease that causes non-scarring hair loss. It manifests as distinct, circular or oval patches on scalp or other parts of the body having hair. It happens when the immune system attacks anagen-phase hair follicles, abruptly stopping hair growth, affecting people of all ages. This study is designed to assess the impact of alopecia areata on quality of life using the dermatology life quality index (DLQI) among patients in a tertiary care hospital in Peshawar.
Methods: This descriptive cross-sectional study was conducted at the dermatology outpatient department of Hayatabad Medical Complex, Peshawar, from January 2025 to June 2025. Ninety-two patients aged 18–65 years with clinically diagnosed alopecia areata were enrolled. Quality of life was assessed using the validated Urdu version of the DLQI. Data were analyzed using statistical package for the social sciences (SPSS) version 28. The chi-square test was used to assess the relationship between DLQI scores and demographic or clinical factors.
Results: The mean age of participants was 31.4±10.7 years, with 59% males. The mean DLQI score was 9.6±5.2, indicating a moderate impact on quality of life. Higher DLQI scores were significantly associated with female gender ($p=0.03$), disease duration greater than one year ($p=0.02$) and severe clinical disease ($p<0.001$).
Conclusion: Alopecia areata has a significant negative impact on patients' quality of life, among females having long-standing or severe disease. Routine use of DLQI may help identify patients who require additional psychological support alongside dermatologic treatment.

Keywords: Alopecia areata, Quality of life, DLQI, Cross-sectional study, Pakistan

INTRODUCTION

Alopecia areata (AA) is a common, immune-mediated, non-scarring hair loss disorder characterized by sudden onset of patchy hair loss on the scalp or other hair-bearing areas. It affects individuals of all ages, genders, and ethnicities, with a reported lifetime risk of approximately 1.7% worldwide.[1] Although AA is medically benign, its unpredictable course, recurrent nature, and visible presentation often lead to considerable psychological and social distress.[2]

The etiology of alopecia areata is multifactorial and involves autoimmune mechanisms, genetic predisposition, and environmental triggers. The condition has been associated with other autoimmune diseases, including vitiligo, autoimmune thyroid disease, atopic dermatitis, and diabetes mellitus.[2,3] Treatment response is variable, and severe or chronic forms may be resistant to therapy, further contributing to emotional burden.[3] AA is responsible for a significant percentage of dermatological outpatient visits, especially among children and young adults, according to hospital-based research from Pakistan and statistics from South Asia, which point to a similar burden.

Hair plays an important role in self-image, identity, and social interaction. Consequently, hair loss can adversely affect self-esteem, interpersonal relationships, and professional functioning. Patients with AA frequently experience anxiety, depression, social withdrawal, and impaired quality of life (QoL), even when objective disease severity appears limited.[5-9]

The dermatology life quality index (DLQI) is a validated and widely used instrument for assessing health-related quality of life in dermatologic conditions. It consists of 10 questions covering symptoms, daily activities, leisure, work or school, personal relationships, and treatment, with total scores ranging from 0 to 30. Higher scores indicate greater impairment in QoL.

While several international studies have evaluated the psychosocial impact of alopecia areata using the DLQI local data from Pakistan remains limited.[5,9,10] Most regional studies have focused primarily on clinical or therapeutic aspects of the disease, with less emphasis on patient-reported outcomes.[4,6,8-12] This study aims to assess the impact of alopecia areata on quality of life using the DLQI among patients presenting to a tertiary care hospital in Peshawar and to identify demographic and clinical factors associated with impaired quality of life.

METHODS

This descriptive cross-sectional study was conducted in the dermatology outpatient department of Hayatabad Medical Complex (HMC), Peshawar, from January 2025 to June 2025. A total of 92 patients were enrolled through consecutive non-probability sampling which was chosen due to the outpatient-based nature of the study.

Patients aged 18–65 years with a clinical diagnosis of alopecia areata were included after obtaining informed written consent. Patients with other concurrent dermatological disorders, systemic illnesses (such as psoriasis, vitiligo, or lupus erythematosus), or those receiving psychiatric treatment at the time of enrollment were excluded to minimize confounding factors.

Data were collected using a structured, pre-tested proforma that included demographic variables (age, gender, marital status) and clinical characteristics (disease duration and severity). Clinical severity was categorized as mild, moderate or severe based on the number and extent of alopecic patches, as assessed by the treating dermatologist.

Quality of life was assessed using the validated Urdu version of the DLQI. The DLQI consists of 10 items, with total scores ranging from 0 to 30. Scores were interpreted as follows: 0–1 (no effect), 2–5 (mild effect), 6–10 (moderate effect), 11–20 (severe effect), and 21–30 (very severe effect on QoL).

All questionnaires were administered in person by trained medical staff to ensure clarity and completeness. A pilot assessment was conducted prior to data collection to ensure comprehension of the questionnaire. Data were entered and analyzed using statistical package for the social sciences (SPSS) version 28. Descriptive statistics were used to summarize the data. Associations between DLQI scores and categorical variables were assessed using the Chi-square test. A $p<0.05$ was considered statistically significant.

Ethical approval was obtained from the Institutional Review Board of Hayatabad Medical Complex prior to commencement of the study. Participant confidentiality was maintained throughout and participation was voluntary.

RESULTS

A total of 92 patients with alopecia areata were included in the final analysis. The mean age of participants was 31.4±10.7 years (range: 18–65 years). Males comprised 59% of the study population, while females accounted for 41%. Regarding marital status, 52% were married, 41% were single, and 7% were divorced or widowed (Table 1).

The impact of alopecia areata on patients' quality of life, as measured by the Urdu version of the DLQI was considerable. The mean DLQI score was 9.6±5.2, with individual scores ranging from 1 to 24. Categorically, 20 patients (21.7%) reported mild impairment (DLQI 2–5), 34 (37.0%) had moderate impairment (DLQI 6–10), 28 (30.4%) reported severe impairment (DLQI 11–20), and 10 patients (10.9%) experienced very severe impact (DLQI >20).

These findings suggest that a substantial proportion of AA patients face moderate to severe deterioration in dermatology-related quality of life (Figure 1).

Statistically significant associations were observed between DLQI scores and certain demographic and clinical variables. Female patients reported a higher mean DLQI score (10.9±5.1) compared to males (8.7±4.9), indicating a significantly greater psychosocial burden among women (p=0.03). Similarly, patients with disease duration exceeding 12 months demonstrated higher mean DLQI scores (11.2±5.4), as compared to those with shorter disease history (p=0.02), reflecting the cumulative impact of chronicity.

Table 1: Demographics and results of DLQI.

Variable	Category	N (%)/value
Mean age (years)	—	31.4±10.7
Gender	Male	54 (59)
	Female	38 (41)
Marital status	Single	38 (41)
	Married	48 (52)
	Others	6 (7)
Disease duration (years)	<1	26 (28)
	1–5	43 (47)
	>5	23 (25)
Clinical severity	Mild	20 (22)
	Moderate	44 (48)
	Severe	28 (30)
DLQI categories	Mild (2–5)	20 (21.7)
	Moderate (6–10)	34 (37.0)
	Severe (11–20)	28 (30.4)
	Very severe (>20)	10 (10.9)
Mean DLQI score	—	9.6±5.2 (range 1–24)
Significant associations	Female gender	p=0.03
	Disease duration >1 year	p=0.02
	Severe disease	p=0.001

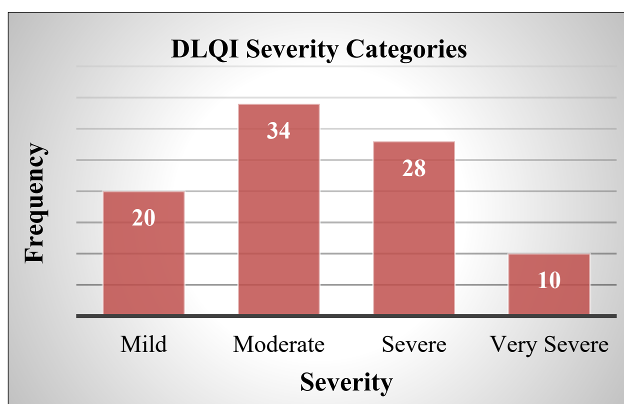

Figure 1: DLQI severity categories.

Notably, patients with severe clinical disease exhibited a markedly higher mean DLQI score (13.4±4.6), as compared to those with mild or moderate disease, and this difference was highly significant (p=0.001).

These results collectively underscore the significant negative effect of alopecia areata on the quality of life, especially in females, patients with long-standing disease and those with clinically severe presentations. The findings also highlight the importance of early psychosocial assessment and targeted intervention in this patient population.

DISCUSSION

This study demonstrates that alopecia areata has a substantial negative impact on patients' quality of life. The mean DLQI score of 9.6 indicates moderate impairment, with a considerable proportion of patients experiencing severe to very severe effects. These findings are consistent with previous studies reporting significant QoL impairment among patients with AA.[5,9,10]

Female patients were found to have significantly higher DLQI scores than males, indicating greater psychosocial distress.[11] Similar gender-based differences have been reported in studies from Kuwait and China, where females demonstrated higher QoL impairment due to cultural, social, and psychological factors associated with hair loss.[12-15] Disease duration emerged as an important determinant of quality of life in our study. Patients with longer disease duration reported higher DLQI scores, suggesting that chronicity and recurrent episodes may lead to cumulative psychological burden.[16,17] Comparable findings have been reported by Qi et al, who observed increased emotional distress and social avoidance with prolonged disease duration.[9,18]

Although various therapeutic options for alopecia areata have been explored, including topical corticosteroids and immunomodulators, treatment outcomes remain variable, and psychological distress is often insufficiently addressed.[4,8,12] Previous literature emphasizes the importance of a multidisciplinary approach incorporating psychological support alongside dermatologic management.[19-21] Most local studies from Pakistan have focused on histopathological features or treatment efficacy, with limited emphasis on patient-reported quality of life.[4,6-8] By highlighting the psychosocial burden of AA using a validated Urdu DLQI, this study contributes valuable local evidence and supports the routine incorporation of QoL assessment in dermatology practice.

Limitations

This study has certain limitations. The cross-sectional design limits causal inference, and the single-center setting may reduce generalizability of the findings. Psychiatric comorbidities were excluded based on patient history rather than standardized screening tools, which may have

resulted in underestimation of psychological distress. Despite these limitations, the use of a validated Urdu version of the DLQI enhances the reliability and cultural relevance of the results.

CONCLUSION

AA significantly impairs quality of life, particularly among female patients and those with severe or long-standing disease. Routine assessment of quality-of-life using tools such as the DLQI should be incorporated into clinical practice to identify patients who may benefit from psychological support in addition to dermatologic treatment. A patient-centered, holistic approach is essential for optimal management of alopecia areata because managing scalp without addressing patient's mental health will lead to incomplete clinical outcomes.

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