

# Assessing the Impact of Acne Vulgaris on Quality of Life: A Study using DLQI Questionnaire

Gulshant Panesar<sup>1\*</sup>, Vivek Pathak<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Dermatology, Santosh Hospital, Ghaziabad, India

<sup>2</sup>Assistant Professor, Department of Psychiatry, Santosh Hospital, Ghaziabad, India

**Abstract:** **Background:** Acne is a chronic inflammatory condition of pilosebaceous duct. It is one of the most common dermatoses seen in clinical practice, characterized by open and closed comedones, erythematous papules and pustules, nodules and pseudocysts. Many studies about the psychosocial impact of acne have been reported in international medical literature describing quality of life as a relevant clinical outcome. There is paucity of such data in India. This study was undertaken to detect the impact of acne vulgaris on quality of life (QOL) and to look for correlation between severity and decreased life quality. **Aim:** To assess impairment in quality of life in patients of acne using DLQI questionnaire. **Material and methods:** The study was carried out on patients visiting Dermatology outpatient department of a medical college hospital in Delhi NCR over a period of 6 months from January 2023 to June 2023. **Inclusion criteria:** All new previously untreated patients, no known underlying psychological disorder, not pregnant/breast feeding. **Exclusion criteria:** Patients already on treatment, patients less than 18 years of age, patients being treated for other skin or medical disorders, patients who have not completed high school. **Effect of acne on quality of life was assessed by DLQI questionnaire. Results were analysed based on DLQI scores according to the key. Results & Conclusion:** The impairment in quality of life due to acne was statistically significant.

**Keywords:** acne vulgaris, quality of life, DLQI questionnaire, psychosocial impact.

## 1. Introduction

Skin is the body's major interface with the outside world. Therefore, disorders associated with skin have a negative impact on individuals, especially in acceptance of their own image, mental health, and quality of life [1], [2]. Acne vulgaris (AV) is a chronic inflammatory disorder of the pilosebaceous units that causes comedones, inflammatory follicular papules and pustules, and nodular cystic lesions in the sebaceous skin areas of the face and trunk [3]. Approximately 9.4% of the world's population is estimated to be impacted by acne, ranking it as the eighth most common disease on a global scale [4]. Acne is a psychosomatic disorder as it affects both the body and the psyche [5]. Psychological distress associated with AV includes low self-esteem, social withdrawal, stress, anxiety, depression, frustration, body shame, and family and relationship problems

[6], [7].

## 2. Material and Methods

The study was conducted in Dept of Dermatology and Dept of Psychiatry in a tertiary care hospital in NCR. Previously untreated patients of acne, above 18 years of age and who had completed education till high school were included in the study. A total of 105 patients participated, 58 females and 47 males.

Mean age of patients was  $20.50 \pm 3$  years. The mean BMI of the patients was  $21.76 \pm 2.58$ . The majority (77.14%;  $n = 81$ ) of the AV patients included in this study were students, and 68.5% ( $n = 72$ ) had a monthly income of 10,000 or more. Sixty percent of participants said they did not have any family history of acne (60%;  $n = 63$ ). Onset of acne in the majority of respondents was 13 to 23 years of age. All patients were prescribed topical medicines either as single-drug therapy or in combination with systemic medications.

The possibility of a causal influence of emotional stress, especially of stressful life events, on the course of various skin diseases has long been postulated.[7] Emotional distress due to acne can worsen the severity of acne, thereby compounding the problem.

This study was conducted to emphasize the importance of assessing mental and emotional health and psychological impact of acne.

The study included 105 consecutive patients older than 18 years of age newly diagnosed with acne vulgaris in Dermatology OPD. Diagnosis of acne vulgaris was made on history and clinical examination. If associated signs of hormonal imbalance were present on history and clinical examination, then relevant investigations were carried out to rule out associated conditions (thyroid disorders, polycystic ovarian disease). Acne was clinically graded as mild, moderate, severe and very severe based on classification of severity by Hayashi et al., which is based on inflammatory lesion count on one half of face. The study questionnaire was explained to all eligible patients. Informed consent was taken. Patient was administered the questionnaire in a quiet and comfortable room. If patient had any doubts while filling, they were clarified. They

\*Corresponding author: [gulshantpanesar@yahoo.co.uk](mailto:gulshantpanesar@yahoo.co.uk)

questionnaire was answered by the patient without any prompting or suggestion.

Table 1

Demography of patients	
Male	47
Female	58
Age distribution	
18-22 years	34
23-27 years	37
28-32 years	22
Above 32 years	12
Employment status	
Student	79
Housewife	16
Employed	10

Table 2  
Grading according to DLQI score

0-1	3
2-5	17
6-10	43
11-20	31
21-30	11

### 3. Result

A total of 105 patients participated, 58 females and 47 males. (Table 1) Maximum subjects were between 18-26 years of age. Duration of acne when patient reported for treatment was 6 weeks.

17 patients grading was 2-5 indicating small effect on patients' life. (16.1 %). In 43 patients, acne had moderate effect on quality of life. (40.9 %). 31 patients reported a significant impairment in quality of life. (30%). 11 patients felt extreme impairment because of acne.

(10 %). Three patients (2.9%) were not psychologically affected due to acne. (Table 2) The impairment in quality of life was not directly proportional to severity of acne. This study was done with power of 90%. P values of 0.05 or less were considered statistically significant. All statistical analyses were performed using the SPSS version 13 (SPSS Inc., Chicago, IL, USA) and SAS version 9.1 for windows (SAS Institute Inc, Cary, NC, USA). The patients in the grading of 6-10, 11-20 and 21-30 had statistically significant impairment in quality of life. ( $P < 0.05$ ).

### 4. Discussion

Skin disorders, including acne, have significant impact on patient's emotional wellbeing and quality of life. Determining Dermatology life quality index can predict the severity or flare up of disease. It can also guide for psychiatric intervention based on score severity. The DLQI questionnaire is designed for use in adults, i.e. patients over the age of 18 [8]. It consists of 10 questions and each question has 4 possible answers with a maximum of 3 points and a total maximum score of 30 and minimum of 0. The higher the score, the higher is the impairment in quality of life. The DLQI can also be expressed as a percentage of maximum possible score of 30. It analyzes 6 subscales: symptoms and feelings; daily activities; leisure; work and school; personal relationships and treatment. It can be

scored from 0 to a maximum of 30. There is a very high success rate of accurate completion of the DLQI. If one question is left unanswered this is scored 0 and the scores are summed and expressed as usual out of a maximum of 30. If two or more questions are left unanswered the questionnaire is not scored. If two or more response options are ticked, the response option with the highest score should be recorded. If there is a response between two tick boxes, the lower of the two score options should be recorded. The DLQI can be analyzed by calculating the score for each of its six sub-scales (see above). When using sub-scales, if the answer to one question in a sub-scale is missing, that sub-scale should not be scored. The clinical interpretation of the DLQI scores uses a banding system (consisting of 5 bands). According to this system, a DLQI score 0-1 = no effect at all on patient's life, DLQI score of 2-5 = small effect on patient's life, DLQI score of 6-10 = moderate effect on patient's life, DLQI score of 11-20 = very large effect on patient's life, DLQI score of 21-30 = extremely large effect on patient's life [8]. The Minimal Clinically Important Difference (MCID) of the DLQI in inflammatory skin diseases (range=2.2-6.9) has been estimated. For general inflammatory skin conditions a change in DLQI score of at least 4 points is considered clinically important. This means that a patient's DLQI score has to either increase or decrease by at least 4 points in order to suggest that there has actually been a meaningful change in that patient's quality of life since the previous measurement of his/her DLQI scores. Acne vulgaris in late adolescence is linked to diverse psychiatric comorbidities, with women being more prone to behavioral and emotional difficulties than men [10]. Many studies have cited problems at school and the absence of love relationships and friendships among patients suffering from acne vulgaris. Other studies have shown that acne vulgaris is associated with diverse conditions like insomnia and attention deficit hyperactivity disease [11], [12]. Other reports have cited that lesions of acne vulgaris present harmful effects on people's psychiatric well-being and quality of life and may be linked to depression, increasing social isolation, loss of self-esteem, anxiety, and suicide [13], [14]. Studies have implicated acne to be cause of low self-esteem [15], [16] Though studies have been conducted, the relationship between acne and psychological distress is not confirmed with the results being equivocal in many studies [17]. In our study, a higher DQLI score correlated with significant impairment in psychological wellbeing which is statistically significant. The impairment in quality of life was independent of severity of acne.

### 5. Conclusion

Assessment of psychological impairment and mental health is important in management of acne vulgaris.

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