



## EVALUATIVE STUDY OF ACNE VULGARIS AND ITS IMPACT ON DERMATOLOGICAL LIFE QUALITY INDEX IN YOUNG ADULTS IN A TERTIARY CARE CENTRE, A ONE YEAR CROSS SECTIONAL STUDY

### Dermatology

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### ABSTRACT

**Introduction:** Acne vulgaris is a common and chronic dermatological disorder of pilosebaceous follicles mainly affecting young adults and adolescents. Scarring is one of the dreaded complication as it scars both skin and mind. The patients experience psychological burdens like depression, anxiety, low self esteem.

#### Objectives-

1. To evaluate dermatological life quality index (DLQI) in young adult patients suffering from acne vulgaris
2. To determine correlation between acne severity and DLQI.

**Material and methods:** The present study is a one year cross-sectional study from January 2016 to December 2016. Total 100 patients were included in study. Patients in age group of 18-30 years attending dermatology outpatient department with all grades of acne vulgaris were included. Demographic data was recorded. Diagnosis was established by detailed history and clinical examination. Patients were asked to fill Dermatological life quality index questionnaire. Grading of acne vulgaris was done by simple grading system proposed by Indian authors. Correlation between severity of acne vulgaris and DLQI was done using Spearman's rank correlation method.

**Results:** Amongst 100 patients studied, maximum number of patients had grade 2 of acne vulgaris. A positive and significant relationship was observed between Grades of acne and DLQI (Spearman R = 0.2326, p = 0.01989) at 5% level of significance.

**Conclusion:** A positive and significant relationship was observed between grades of acne and DLQI, meaning higher the grades of acne higher is the effect of DLQI.

### KEYWORDS

Acne Vulgaris, DLQI, pilosebaceous follicles.

#### Introduction

Acne vulgaris is a chronic inflammatory disorder of pilosebaceous duct, characterized by polymorphic lesions consisting of comedones, papules, pustules, nodules and cysts. It affects up to 80% of adolescents and young adults. While neither life threatening nor physically debilitating, acne can affect social and psychological functioning.<sup>1</sup>

Quality of life is a general term which encompasses feeling of joy and satisfaction with life. WHO defines Quality of Life (QOL) as "The individual's perception of their position in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns."<sup>2</sup>

General health related quality of life measures compare effect of different conditions on patient's life. These include Dermatological life quality index (DLQI), Skindex, Skindex-29, Skindex-16. Finlay and Khan developed widely used DLQI for use in research studies and routine clinical practice to assess quality of life.

The purpose of this study was to determine impact of acne vulgaris on quality of life and psychology of patients, so as to provide early psychological intervention as an adjunct to dermatological treatment for good outcomes.

#### Material and methods

This was a cross-sectional hospital based study. Out of total 25748 patients attending dermatology outpatient department in a tertiary care centre, during study period of one year that is from January 2016 to December 2016, 1287 patients were diagnosed clinically as acne vulgaris. Incidence of acne vulgaris was 5%.

Among these 100 cases were selected for present study according to a formula, sample size =  $z^2pq/d^2$  [ p = prevalence (83%), q = 100-p, d = error was 8, z for 95% confidence interval = 1.96-2]. The patients suffering from all grades of acne vulgaris between age group of 18 to 30 years were included for study. The patients having any other chronic skin diseases and disabling medical disorders were excluded from study. All patients included in this study after obtaining written informed consent in Marathi/English/Hindi/Kannada filled a questionnaire called, DLQI (Dermatological life quality index). DLQI is a validated reliable questionnaire containing 10 questions and covering 6 dimensions, such as, symptoms and feelings, daily

activities, leisure, work and school, personal relationships and treatment. Each question is scored as "very much" (score 3), "a lot" (score 2), "a little" (score 1), and "not at all" (score 0). Final DLQI Score was calculated for all patients.

Detailed history was taken for all patients pertaining to socio-demographic data, presenting complaints, duration of acne, etc. Thorough physical examination was done for all patients. Cutaneous examination was done on all patients and the following were noted:

1. Site of lesion (face, chest, back or arms),
2. Type of lesion
3. Grade of acne,
4. Post acne hyperpigmentation (present/absent),
5. Post acne scars (present/absent)

Acne vulgaris was graded into 4 grades based on a grading system proposed by Indian authors.<sup>3</sup>

Acne vulgaris was graded as:

Grade I: Comedones and occasional papules

Grade II: Papules, comedones and few pustules

Grade III: Predominant pustules, nodules and abscesses

Grade IV: Mainly cysts, abscesses with widespread scarring.

DLQI score interpretation is done as follows:

- 0-1 no effect on patient's life
- 2-5 small effect on patient's life
- 6-10 moderate effect on patient's life
- 11-20 very large effect on patient's life
- 21-30 extremely large effect on patient's life.

Correlation between final DLQI score and grades of acne was done.

#### Statistical analysis

Comparison of categorical variables between independent groups was done with Chi-square test.

Correlation between final DLQI score and grades of acne was done by using spearman's rank correlation method.

#### Results

Out of total 100 patients, 47 patients were in age group of 20 or less than 20 years. The incidence of acne was higher in females than in

males, with female:male ratio 1.0833:1. Out of total 100 patients, 54 patients had grade 2, 29 patients had grade 3, 10 patients had grade 4 and 7 patients had grade 1 of acne vulgaris. 38 patients had moderate effect on quality of life followed by very large effect on life quality in 33 patients and extremely large effect on life quality in 8 patients.

**Table 1: Association between grades of acne and DLQI**

Grades of ACNE	Small effect	Moderate effect	Very large effect	Extremely large effect	Total
Grade 1	0	6	1	0	7
Grade 2	15	21	15	3	54
Grade 3	5	8	13	3	29
Grade 4	1	3	4	2	10
Total	21	38	33	8	100

Chi-square=14.1539 p=0.1170

A positive and significant relationship was observed between grades of acne and DLQI. With Spearman R =0.2326, p=0.01989 at 5% level of significance

**Discussion**

In a study done in Tamilnadu, India, 114 patients above age of 15 years were included in study. The mean age was 19.39 years. Furthermore, maximum patients (64%) were among 15–20 years.<sup>7</sup> According to a study done by Aayush Gupta et al, which consisted of 100 patients, between the ages of 14–45, mean age was 22.49 ± 5.381 years.<sup>5</sup> The study done by Haritha Samanthula et al revealed that majority (53.2%) of the participants belonged to the age group 16-20 years.<sup>8</sup> Most of the studies<sup>7,8,9,10</sup> have included an age group between 13 and 18 years and some<sup>11,12</sup> studies from 11 years and some<sup>13,14</sup> from 17 years. In our study maximum number of patients were falling in age group of 18-20 years in pre-defined age range of 18 to 30 years.

Female patients outnumbered males in our study. Similar finding was reported by Durai and Nair.<sup>15</sup>

Our study showed maximum patients with grade 2 of acne vulgaris. These findings were similar to study done by Hazarika N and Rajaprabha R K.<sup>4</sup> While study done by Durai and Nair<sup>15</sup> showed maximum patients with grade 1 acne which was in contrast to our study.

**Table 2: Comparison between present study and other studies**

Study done by	Conclusions	Observations of present study
Hazarika N and Rajaprabha R K <sup>4</sup>	Worsening of quality of life was observed with severity of acne. That is, significant association was observed between high DLQI scores and acne severity.	Similar findings were noted in present study
Durai and Nair <sup>15</sup>	There was significant correlation between the grade of acne and DLQI scores	Similar findings were noted in present study.
Salek MS, Khan GK <sup>16</sup>	No association between DLQI and grades of acne	Contrast to our study
Gupta MA, Gupta AK <sup>17</sup>	No association between DLQI and grades of acne	Contrast to our study

**Conclusion**

This study showed a positive and significant relationship between grades of acne and DLQI, meaning higher the grades of acne, higher is the effect of DLQI. Thus grades of acne and DLQI are dependent on each other. The assessment of impact of acne on the quality of life is essential, to detect those patients who are at increased risk of being negatively affected so as to treat them in a more integrated manner.

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