



TO STUDY THE QUALITY OF LIFE IN ACNE VULGARIS PATIENTS BY USING DERMATOLOGY LIFE QUALITY INDEX (DLQI) AND CARDIFF ACNE DISABILITY INDEX(CADI) – A CROSS SECTIONAL STUDY.

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ABSTRACT

Context: Acne vulgaris is a common condition affecting 80% of adolescents and adults at some stage. Previous studies have reported dissatisfaction with appearance, embarrassment and self-confidence in acne patients with negative impact on interpersonal relationships, sports activities, and employment opportunities in teens and young adults. As there were few studies in Indian context, the present aim of present study was to investigate the quality of life (QoL) of patients with acne in an Indian context.

Aims: 1) To study the overall impact of Acne Vulgaris on QoL in adolescent and young adults in the age group 16 to 26 years.

2) To study the correlation between severity, age and sex wise impact of acne and its impact on QoL.

Settings and Design:

Methods and Material:

It was a cross-sectional, questionnaire based study, carried out at Out-patient department of Dermatology after obtaining ethical committee clearance. Informed consent from all patients was taken. The total duration of study was 1.5 years from January 2015 to June 2016. The diagnosis of acne was done clinically with appropriate grading. The patients were handed over 2 questionnaires; DLQI and CADI; in English, Marathi and Hindi. Data was analyzed by using appropriate statistics.

KEYWORDS : Acne, Quality of life, acne index

Introduction:

Acne vulgaris is a common condition affecting 80% of adolescents and many adults at some stage. It is a chronic, self-limiting, inflammatory disease of pilosebaceous unit, manifesting generally in adolescence with pleomorphic lesions like comedones, papules, nodules, and cysts along with extensive scarring^[1]. While neither life threatening nor physically debilitating, acne can affect social and psychological functioning.^[2] Although acne is extremely prevalent, a very few studies have focused on what a patient with acne vulgaris experiences^[3]. Previous studies have reported dissatisfaction with appearance, embarrassment, self-consciousness, and lack of self confidence in acne patients. Acne, also, may have negative impact on interpersonal relationships^[4], sports activities, and employment opportunities in teens and young adults^[5]. Therefore, attention to the quality of life of these patients is of utmost importance. To our knowledge, there are very few studies done in India for the same. Also, the impact of disease on quality of life differs in different cultures.

The aim of present study was to investigate the quality of life of patients with acne in an Indian context.

Material and methods:

The present study was a cross-sectional, questionnaire based study, carried out at dermatology Out-patient department. Ethical committee clearance as well as informed consent from all patients was taken. The total duration of study was 1.5 years.

All patients of Acne vulgaris; who were able to read and write on their own were included in this study. Age group between 16 to 26 years of age.

Patients not within the mentioned age group, who are not able to read and write and acneiform eruptions other than acne vulgaris excluded from this study.

The present study made use of two questionnaires.

1. Dermatology Life Quality Index (DLQI)

2. Cardiff Acne Disability Index (CADI)

Both of these questionnaires were taken from Department of

Dermatology Cardiff University School of Medicine, Cardiff, United Kingdom. Detailed permission was taken for the use of DLQI Index from the author.

There was no need of taking any permission for the CADI Index; as it is free to use.

Both these questionnaires were made available in English, Marathi and Hindi versions; and Marathi and Hindi were the commonly spoken languages in our set up. All the versions of the questionnaires were easily available on the website.

The diagnosis of acne was done clinically with appropriate grading.¹ The aim of the study was explained to all the patients and consent was taken from them. In case of minors <18 years of age; permission was taken from their accompanying parent/ guardian. If the patients were ready to give the consent; then only they were handed over the two questionnaires. The concerned questionnaires were made available in their vernacular languages (Marathi and Hindi). Any queries aroused during filling of the questionnaire were tackled immediately. Data was analyzed by using appropriate statistics.

Results and observations:

The study included total of 500 patients of Acne Vulgaris. Out of which 298 were males and 202 were females. The age group which was included in this study was in between 16-26 years. Majority of the patients filled the form in Marathi language (44%), next in order English and Hindi language.

As two questionnaires had a difference in their analysis and scoring pattern, we distributed them accordingly in terms of age, sex and grade. The age wise findings of the DLQI questionnaire is shown in

Table 1:

Table 1

| Age group (years) | Nil | Small | Moderate | Very large | Extremely large |
|-------------------|-----|-------|----------|------------|-----------------|
| 16-19 | 14 | 45 | 65 | 40 | 5 |
| 20-23 | 26 | 50 | 68 | 67 | 10 |
| 24-26 | 11 | 20 | 17 | 49 | 13 |

The sex wise findings of the DLQI questionnaire are shown in Table 2:

Table 2

| Sex | Nil | Small | Moderate | Very large | Extremely large |
|--------|-----|-------|----------|------------|-----------------|
| Male | 31 | 59 | 101 | 90 | 17 |
| Female | 20 | 55 | 50 | 66 | 11 |

The grade wise findings of the DLQI questionnaire are shown in Table 3:

Table 3

| Grade | Nil | Small | Moderate | Very large | Extremely large |
|-------|-----|-------|----------|------------|-----------------|
| 1 | 17 | 33 | 24 | 6 | 1 |
| 2 | 29 | 68 | 110 | 86 | 10 |
| 3 | 5 | 13 | 13 | 56 | 6 |
| 4 | 0 | 0 | 4 | 8 | 11 |

The age wise findings of the CADI questionnaire are shown in Table 4:

Table 4

| Age group (years) | Mild | Moderate | Severe |
|-------------------|------|----------|--------|
| 16-19 | 87 | 57 | 15 |
| 20-23 | 104 | 83 | 23 |
| 24-26 | 42 | 49 | 17 |

The sex wise findings of the CADI questionnaire shown in Table 5:

Table 5

| Sex | Mild | Moderate | Severe |
|--------|------|----------|--------|
| Male | 135 | 115 | 29 |
| Female | 98 | 74 | 26 |

The grade wise findings of CADI questionnaire are shown in Table 6:

Table 6

| Grade | Mild | Moderate | Severe |
|-------|------|----------|--------|
| 1 | 56 | 15 | 2 |
| 2 | 157 | 106 | 25 |
| 3 | 18 | 59 | 16 |
| 4 | 2 | 9 | 12 |

Thus, according to the statistical analysis:

DLQI:

As the age group and grade increases; there was increased psychosocial upset among the patients.

There was no correlation seen with respect to sex.

CADI:

As the grade of acne increases; there was increased psychological upset among the patients.

There was no correlation found in between the sex and age in this index

Discussion:

There are studies assessing the impact of acne on QoL from various countries such as Cleveland^[34], USA^{[35][36]}, Spain^[37], UK^[38], Iran^[39], Malaysia^[40], southern Brazil^[41], and Greece^[42]; whereas, studies on Indian patients are reported less frequently. Comparison of prevalence between different studies is difficult because of differences in the questionnaire design, study setting, and population characteristics.

The most common age group encountered was 20-23 years, followed by 16-19 years and then 24-26 years; as shown in Table 1.

The mean age was around 21.42 years. The most common grade encountered was Grade 2 followed by Grade 3 > 1 > 4; as shown in Table 2.

The most common language preferred by our patients was Marathi

(as this was the local language of the patients in our setup) followed by English and then Hindi; as shown in Table 3.

There are few studies published at present on this topic. In addition to this, studies taking into account the psychological aspects are further less in number.

The age group of acne vulgaris patients included in different studies done in this regard are variable. Most of the studies^[38,40,43,44,45] have included an age group between 13 and 18 years and some studies^[35,37,46] from 11 years and some^[34,47] from 17 years. This study included the age group in between 16 to 26 years.

The peak incidence of acne occurs at the age of 17 years.^[35] In late adolescents, above the age of 16 years, they move towards young adult roles and appearance is given more importance than at an earlier age.^[48] Physiological acne may persist even after the age of 25 years and in a study done in France and USA has shown that some level of acne activity may persist even into the 30-40 years age range.^[6]

Martin *et al.*^[48] observed that the QoL in facial acne correlated with the patient reported severity (25%) and the QoL scores worsen with increasing severity. There was association between the acne severity of face and trunk than with face alone. Hanisaher *al.*^[40] reported facial acne in 67.5% of individuals, being more common in males (71.1%) and QoL was affected by the severity, which was also reported by Hassan *et al.*^[49] Grading of acne and DLQI/CADI scores correlated significantly showing increase in score with worsening of lesions.^[50] This study also showed concordance with the above studies; as the grade of acne increased (DLQI and CADI), the severity of psychological upset increased.

There was no gender difference between the scores which shows that both males and females were concerned about their acne when compared to a study done by Cotterillet *al.*,^[28] Ismail *et al.*^[46] and Halvorsen *et al.*^[51] where females had higher scores.

The mean of DLQI in our study was 9.088; with minimum score of 0 and highest of 27 (out of 30).

And that of CADI was 5.924; with minimum score of 0 and highest of 15 (out of 15).

Jankovic *et al.*^[43] observed a low mean CADI (3.57) due to clinically mild acne and gender difference was significant with CADI score being more in females. They also showed correlation between Children's Dermatology Life Quality Index (CDLQI) and CADI scores. Study done by Walker and Lewis Jones^[38] showed low mean CADI score (1.9) and no gender differences, but with good correlation between CDLQI/CADI. Study by Srivastava *et al.* also showed correlation between acne severity and the scores and patients perception of the disease as an important factor.^[52]

Eleniet *al.*^[42] showed that moderate/severe acne had more impact on QoL (CDLQI) than mild acne and there were no gender differences. Studies done in Iraq,^[46] Turkey,^[46] and France^[46] showed worsening QoL with increasing grade of acne. No association between acne severity and QoL was reported in some studies.^[53,54]

Shahinet *al.*^[39] evaluated CADI scores in patients with acne which showed a mean CADI score of 7.57. Majority (78%) of patients had moderately severe acne and the grade correlated with the CADI scoring as observed by Saleket *al.*^[53] and Clark *et al.*^[55]

In our study age of patients were significantly associated with the DLQI scoring and the age groups 20-23 and 24-26 years had more significant correlation with DLQI score, which indicates that severity of acne worsens as age advances, affecting the QoL. This may be because of the increased exposure to social, occupational functioning, and the treatment seeking behaviour being at higher rates than before.

In a study done by Pruthi and Babuin adult females, it was observed that acne has impact on both the physical and psychosocial aspects of life as was observed in the present study using DLQI and CADI scores.^[29] The negative impact being more as age advances was reported by various other studies.^[34,36,39,40,42]

Our study had a good number of cases (500 cases) and we found a correlation between age, grade and its effect on the severity of psychological status of the patients.

The limitations of our study were that we didn't include the demographic data (like occupation, marital status, education, diet, addictions, etc.) in our studies which might have given us more information on risk factors for the causation of acne including the psychosocial aspect.

Conclusion:

Our study has shown that there was significant correlation between the QoL and acne as age advances due to the impact of social and occupational functioning. Grading of acne and DLQI/CADI scores correlated significantly showing increase in score with worsening lesions. There was good correlation between the two questionnaires. There were no gender differences in the QoL scores. The assessment of impact of acne on the QoL 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. It is important for health professionalsto incorporate QoL measurements when managing acne patients to provide better and appropriate care. Inculcating Non-pharmacological therapies and psychiatric medications for the treatment of acne would definitely benefit the end result in the treatment of acne.

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