To Study the Impact of Acne Vulgaris on the Quality of Life of Patients

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Abstract

Introduction: Acne is a common dermatological disorder affecting people between the ages of 12-24 years and has been implicated in psychiatric and psychological processes more than many other dermatological conditions. Evidence have illustrated that effects of this condition are far more than skin deep, and may range from dissatisfaction with appearance, embarrassment, self-consciousness, and lack of self-confidence. Many studies have been done in other countries showing considerable impact on quality of life of patients with acne vulgaris. The data in the Indian subcontinent is insufficient. Hence, we designed to conduct this study to assess the impact of acne vulgaris on the quality of life of patients.

Methods: 60 consecutive patients suffering from acne vulgaris visiting the out-patient department over two months from June 2012 to July 2012 were recruited in this cross-sectional study. Patients of either sex in age group of 18-35 years, willing to give written informed consent, were included in the study. Acne was assessed using the global acne grading system (GAGS). Patients were divided into two groups: males and females and were assessed for quality of life parameters using Cardiff Acne Disability Index (CADI) and Dermatology Life Quality Index (DLQI) as outcome measure.

Results: All the patients (29 males, 31 females) completed the study. The average CADI score was 7.12±0.41 and DLQI score was 8.98±0.57 with slightly higher scores in females. Comparison between groups using various statistical tests revealed statistically non-significant ($p>0.05$) results.

Conclusion: Both sexes showed moderate disability of life with females having slightly more effect.
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Introduction

Acne is a common dermatological disorder affecting more than 85 percent of people between the ages of 12-24 years.[1, 2] It is a chronic inflammatory disorder of pilosebaceous unit with acne lesions distributed in areas with well developed sebaceous glands including the face, back, chest, and upper arms.[3] Acne has been considered as a cosmetic trivial problem but it has significant and enduring emotional and psychological effects.[2] Acne has been implicated in psychiatric and psychological processes more than any other dermatological conditions.[4] Many aspects of this disease contribute to its non dermatological effects: predominant adolescent prevalence, anatomical distribution, misperceptions regarding aetiology, and social pressures.[3] Emphasis on psychosocial impact has shown dissatisfaction with appearance, embarrassment, self-consciousness, and lack of self confidence in patients with acnes. There are also reports of social dysfunction including concern about social interaction with the opposite gender, appearance in public, interaction with strangers, and reduced employment opportunities.[5]

Acne vulgaris has been associated with psychiatric disorders varying from clinical depression, social phobia, and certain anxiety disorders. The patients suffering from acne have reported greater levels of anxiety and depression than other medical populations.[3, 5] A study reported higher incidence of clinical depression and suicidal ideation in group with acne as compared to group suffering from alopecia aerate, atopic dermatitis, and mild to moderate psoriasis.[3, 6] Another study of acne patients aged 16 years and over attending a United King¬dom dermatology outpatient clinic found a comparable levels of social and emotional problems with those in people with severe, chronic, and disa¬bling diseases such as arthritis and epilepsy.[1, 7]

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One study done in Malaysia, to study the impact of acne on quality of life, reported a considerable impact on the quality of life of adolescent school girls,[1] and acne vulgaris was one of the most significant factor for patients low perception of general health.[4] A study done in Ohio to determine the quality of life of adult patients with acne vulgaris visiting the dermatology clinic showed a significantly impaired quality of life[8] with a drastic improvement in quality of life was reported in patients applying makeup.[9]

Acne is a source of distress and embarrassment and there is a need to study the impact of psychosocial impact and quality of life of young people with acne. A lot of studies have been done in other countries which have shown that acne vulgaris is associated with a considerable impact on the quality of life of patients. The data in the Indian subcontinent is insufficient hence we designed this study to assess the impact of acne vulgaris on quality of life of patients.

Methodology

This prospective, cross sectional study was done on patients suffering from acne vulgaris in the Out Patient Department of Gian Sagar Medical College & Hospital, Patiala, India from June 2012 to July 2012. An assessment of acne was done using the global acne grading system (GAGS). GAGS considers six locations on the face and chest/upper back, with a factor for each location based roughly on surface area, distribution, and density of pilosebaceous units. The borders on the face are delineated by the hairline, jaw line, and ears. No magnifying glass or skin stretching was allowed, and good lighting is suggested. Each location is graded separately on zero to four scale, with the most severe lesion within that loca¬tion determining the local score. Acne is then graded according to the global score which is the summation of all local scores. The severity is graded as mild if the score is 1–18, moderate with scores from 19 to 30, severe with scores from 31 to 38, and as very severe if the score is more than 38. The same researcher assesses all the patients with acne vulgaris/ multiple researchers who had been trained equally assess the patients so as to get a uniform score.[10]

Patients of either sex between 18-35 years of age willing to give written informed consent were included in the study. Patients suffering with co morbid skin conditions like Psoriasis, Lichen planus, chronic medical, surgical conditions, organic brain syndrome, and chronic mental illness were excluded from the study. All pregnant or lactating females were also excluded from the study.

Procedure

Prior to the enrolment of the patients, approval was obtained from the Institutional Ethics Committee. All the consecutive patients visiting the OPD and suffering from Acne vulgaris underwent thorough medical examination and severity of acne was determined based on the GAGS by the dermatologist. Patients were divided into two groups based on the gender, one group was of male patients suffering from acne vulgaris and other group of females; both groups were assessed for quality of life parameters.

Outcome Measure

Cardiff Acne Disability Index (CADI)

A well-validated, self-reported, five item questionnaire consist¬ing of questions which relate to feeling of aggression, frustration, interference with social life, avoidance of public changing facilities, and appearance of the skin – all over the last month – and an indication of how bad the acne was now. The CADI score are calculated by summing score of each question resulting in a possible maximum of 15 and minimum of 0. CADI scores are graded as low (0–4), medium (5–9) and high (10–15). A low cumulative CADI score was indicative of a low level of disability experienced by patient while a higher score indicated a higher level of disability. The patients' responses to the questionnaire are significantly correlated with clinicians' assessment of acne severity.[11, 12] It is usually completed in one minute.

Dermatology Life Quality Index (DLQI)

The DLQI questionnaire is designed for use in adults, i.e. patients over the age of 16. It is self explanatory and can be simply handed to the patient who is asked to fill it in without need for detailed explanation. It is usually completed in one to two minutes. Each question has a score range from zero to three. The DLQI is calculated by summing the score of each question resulting in a maximum of 30 and a minimum of 0. A higher score indicates greater impairment of quality of life. The DLQI can also be expressed as a percentage of the maximum possible score of 30. The Scoring pattern is: 0-1 (no effect at all 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).[13-15]

Statistics

The data was presented as mean ± standard error (mean ± SE). The scores obtained from scales were compared using unpaired Student t test and correlation analysis. A $p < 0.05$ was considered statistically significant.

Results

60 patients were enrolled and all of them completed the study. The average age of patients in study was 21.43±0.41 with an average GAGS Score of 30.32±1.52. The average CADI and DLQI score were 7.12 ± 0.41 and 8.98 ± 0.57 respectively. A total of 29 males and 31 females completed the study and were divided into two groups based on gender.

Table 1. Characteristic of patients in both groups

Parameters (Mean ± SE)	Males (n=29)	Females (n=31)	p value
Age (years)	20.93 ± 0.53	21.93 ± 0.60	0.23
GAGS	30.52±2.6	30.13±1.78	0.90
CADI	6.69± 0.64	7.52± 0.52	0.32
DLQI	8.83 ± 0.87	9.13 ± 0.77	0.80
Both the groups were comparable, using unpaired Student *t* test			

Female participants had a slightly higher age as compared to males though it was not statistically ($p>0.05$) significant. Females had lower GAGS score, higher mean CADI, and DLQI scores as compared to males though it was not statistically significant (Table 1).

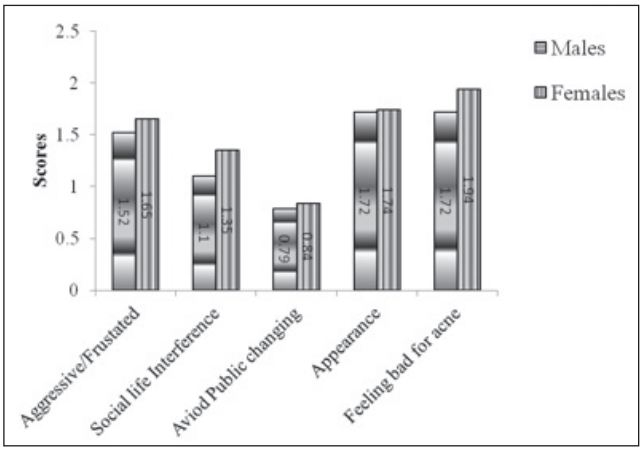

Figure 1. CADI scores in both groups

CADI Scores

Females had comparatively higher scores in all the questions as compared to males, though none of them was statistically significant (Figure 1). Females were more aggressive/ frustrated or embarrassed as compared to males. Females had greater feeling of acne interfering with their social life and were more prone to avoiding public changing facilities, as compared to males. Females were more concerned with their skin and considered acne as more problematic.

DLQI Scores

Females had slightly higher DLQI scores but the pattern for each individual question was variable (Figure 2). Females had higher scores for painful/stinging skin, social/leisure activity affected, problem with work/study, and problem created with friends/relatives as compared to males. Females were more influenced by their skin when determining what clothes to wear. Males scored higher on the following parameters: embarrassed/ self-conscious, difficulty to do any sport, consumed time, and caused sexual difficulties. Males considered acne interfering with their shopping/ looking after their home.

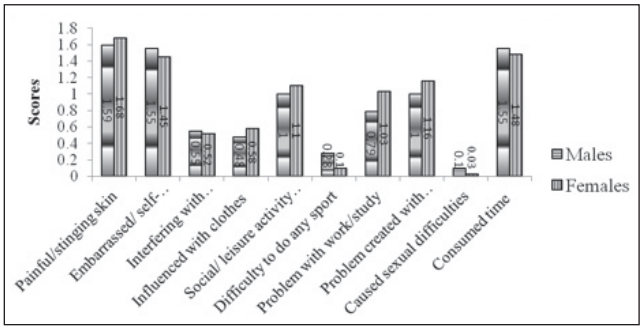

Figure 2. DLQI scores in both groups

Correlation

GAGS score was significantly ($p<0.05$) correlated with both CADI and DLQI scores in males and females(Table 2).

Discussion

Acne vulgaris has a significant non-dermatological effects due to the specific population being affected, distribution of lesions, misperceptions regarding the cause condition, and strong emphasis being placed on physical appearance. Acne also negatively affects psychological health and psychosocial functioning of the patient affected, with significant impairment in self esteem and self image.[3]

Acne has shown to cause a significant deficit in the health related quality of life using both generic and disease-specific instruments,[3, 16] and the deficits in quality of life are as great as those reported by patients with chronic, disabling conditions, such as: asthma, epilepsy, diabetes, or arthritis.[3, 7]

In the present study the impact of acne vulgaris on quality of life was observed using CADI and DLQI scores. The results showed that GAGS score was significantly correlated with both CADI and DLQI scores in males and females. The CADI score and DLQI score were in range of mild to moderate disability associated with acne vulgaris and females had higher scores as compared to males.

Table 2. Correlation with GAGS score

Variable	Males		Females	
	r	p	r	p
CADI Scores	0.656	<0.05*	0.582	<0.05*
DLQI Scores	0.676	<0.05*	0.562	<0.05*

*p<0.05 and statistically significant

One of the studies done to assess acne patients' view of their general health and quality of life, emphasized that acne had great impact on patient's general health and affects individual's physical and psychological health. The observations of our study also depicted that acne vulgaris had an impact on quality of life of patients.[4]

The results of our study are in accordance with an earlier study where it was found the acne impacted the quality of life of patients. However, this study recruited patients between the ages of 13-18 years, whereas in our study we enrolled patients within the age group of 18-35 years.[1]

Another cross sectional and longitudinal survey to determine the effects of acne vulgaris on the quality of life of adult dermatology patients concluded that acne vulgaris significantly affects patients quality of life. The results of this study are in accordance with our study where we observed moderate affect on quality of life of patients though it was not statistically significant.[8] Another observation of this study was that regardless of the severity of acne, older adults were more affected by their acne, whereas in our study we only included those patients who were between the age group of 18-35 years.[8]

A study done in the psychiatry outpatient department of a teaching medical institution in New Delhi found significantly higher psychiatric morbidity in patients with acne vulgaris and there was positive correlation between the mean GHQ scores and perceived severity. Similarly in our study, a significant correlation of GAGS score in both males and females with DLQI and CADI scores was observed.[17]

Another study done to assess the effect of acne on acne related quality of life and its correlation to acne clinical severity conducted in university female students attending the university medical clinics with acne complaints in Saudi Arabia observed no correlation between acne severity (GAGS scoring system) and quality of life impairment, as assessed by CADI score. The observations of this study are quite different from our study, as in our study we found a significant correlation of GAGS score with both CADI and DLQI scores in both males and females. The results showed that acne did have an impact on quality of life.[5]

There are certain limitations in our study. Firstly, the sample size could have been larger, but the duration of study was only two months hence we tried to include patients who fulfilled the eligibility criteria. Secondly, a comparison with the intervention arm could be done, but any intervention could have prolonged the duration of study and we would not have been able to complete the study in the allotted two months. Another limitation of the study is that it doesn't take into account duration of disease and trials/failure of previous treatment.

Conclusion

The results of our study demonstrated that acne vulgaris had a moderate impact on quality of life of patients and the effect was more on females, as compared to males. This was evidenced by the higher scores among female participants, though it was not statistically significant. The severity of acne vulgaris had significant correlation with both DLQI and CADI scores in both males and females. The results of our study show that there is a need to educate the patients, as well as peer groups, about the reasons for acne so as to encourage early treatment. The study also highlights that we need to be compassionate when dealing with patients with acne vulgaris.

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