

# The Psychological Impacts of Acne

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## ABSTRACT

**Objective:** To determine the frequency of different category of Dermatology Life Quality Index (DLQI) in patients with Acne Vulgaris visiting to tertiary care hospital.

**Study Design:** Descriptive Cross-Sectional Study.

**Place and Duration:** This study was conducted at the Department of Dermatology, Shaheed Mohtarma Benazir Bhutto Medical University, Larkana, Pakistan during the period from August 23, 2019 to February 22, 2020.

**Materials and Methods:** All patients who fulfilled the inclusion criteria and visited to SMBBMU, Larkana were included in the study. Informed consent was taken after explaining the procedure, risks and benefits of the study. In our study, patients with acne vulgaris were diagnosed on the basis of relevant clinical history and examination. Patients were asked to fill the DLQI questionnaire themselves to assess the DLQI. All the collected data were entered into the proforma attached at the end and used electronically for research purpose.

**Results:** Mean  $\pm$  SD of age was 25.4 $\pm$ 5.2 years. Out of 343 patients, 157 (45.8%) were male and 186 (54.2%) were female. In frequency of different category of dermatology life quality index (DLQI) 44 (12.8%) patients had no effect, 105 (30.6%) had mild, 74 (21.6%) moderate effect, 86 (25.1%) had very large while 34 (9.9%) patients had extreme larger effect.

**Conclusion:** It is to be concluded that his study showed significant impairment of QoL in acne patients. Assurance and counseling along with early treatment of acne vulgaris are important to reduce disease-related psychosocial sequelae.

**Keywords:** Dermatology Life Quality Index, Acne Vulgaris, Influencing Factors, Quality of Life, Psychosocial, Cosmetological Treatments

## INTRODUCTION

Acne Vulgaris is a chronic inflammatory disease of the pilo-sebaceous unit characterized by comedones, papules, pustules and nodules [1]. It is typically present on facial skin which is apparent to others; therefore, it has a role in reflecting the personality and image of the person [2]. Lifetime prevalence of acne is 85-90% and it mostly affects young adolescents [3]. Acne affects life of patients in many ways. Symptoms associated with acne are pain, recurrent bleeding and purulent discharge [4]. The psychological effects of acne were first described by Sulzberger and Zaidens in 1948 [5], social activities like going out with friends, attending social gatherings or taking part in sport, swimming or other physical activities are often disturbed because of reluctance to allow others to see the diseased skin and fear of what might others think of the appearance [6]. Acne can negatively influence the intension to participate in sports [5-7]. Moreover, anxiety and depression are found to be more prevalent among acne patients than controls [6-7]. Even suicidal ideation was found in 6-7% of acne patients [8].

When compared to other chronic illnesses, patients with acne have been shown to have levels of social, psychological, and emotional impairments similar to those with more serious diseases such as asthma, epilepsy, diabetes, or arthritis [9]. Acne also affects patients' functional abilities and patients with acne have a higher unemployment rate than those without acne and are prone to embarrassment and social withdrawal, depression, anxiety, and anger [10]. Previous studies have shown that acne could cruelly impair selfimage, psychological well-being and the ability to form relationships, and may even

precipitate suicide [8-10]. Even mild acne can cause a significant problem for some patients, diminishing their quality of life and social functioning. The impact of acne on a particular patient is not always easy to judge clinically [11].

The management of acne must take into account the impact of acne on the patient's quality of life [12]. These patients are more prone to embarrassment, social withdrawal, depression, anxiety; and anger [12-13]. WHO defines 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 [14]. There are several ways for the assessment of health related quality of life (HRQOL) among patients with acne. The use of QOL questionnaires can help us adequately understand how acne affects the patient on a day-to-day basis and can aid in assessing the efficacy of therapy and design more targeted interventions. One such questionnaire is the Dermatology Life Quality Index (DLQI). Developed by Finlay and Khan, DLQI is widely used in research and clinical practice to assess changes in health-related QoL, as it is a sensitive measure [14-15]. Psychosocial effects of acne vulgaris have been long identified, but this sequelae of acne remain under evaluated. Patients with acne have been shown to have levels of social, psychological, and emotional impairments similar to serious diseases such as asthma, epilepsy, diabetes, or arthritis [16]. A study reported quality of life on the basis of Dermatology Life Quality Index (DLQI) scores as no effect (8.8%), mild effect (33.3%), Moderate effect (32.5%), very large effect (25.4%), extreme large effect (0%) in patients with acne vulgers [17]. Several dermatology specific and acne-specific Health-related

quality of life (HRQOL) questionnaires have been developed and vary in both the number and content of items addressing quality of life. A longer questionnaire may better serve clinical trial visits, yet can also provide a more comprehensive profile of patients' HRQOL than a brief measure [18].

The aim of this study is to assess the frequency of Dermatology Life Quality Index (DLQI) in patients with Acne Vulgaris. By conducting this study, we will be able to find out the social and psychological aspects related to acne as this is usually ignored by the clinician and they are usually concerned with the physical treatment which is less time consuming.

**MATERIALS AND METHODS**

This descriptive cross-sectional study was conducted at Department of Dermatology, Shaheed Mohtarma Benazir Bhutto Medical University, Larkana for the period from August 23, 2019 to February 22, 2020. Total 343 patients of either gender with acne vulgaris were enrolled in this study. Patients' ages were ranging between 18 to 35 years. Pregnant or lactating women, topical treatment in last 2 weeks, previous history of CO2 laser therapy, and patients with post trauma keloid and scars were excluded from this study. Because laser treatment is contra-indicated in these patients.

A written informed consent was taken from each patient before enrolling them into study and ensuring them the confidentiality of their data. Patients with acne vulgaris were diagnosed on the basis of relevant clinical history and examination by researcher herself under the supervision of consultant > 5 years of experience. Patients were asked to fill the DLQI questionnaire themselves to assess the DLQI (as mention in operational definition). Translated version of DLQI in Urdu was also given to the patients.

Data was analyzed on SPSS version 23. Mean and standard deviation were calculated for age, duration of acne. Frequency and percentage were calculated for gender and outcome variable i.e. no effect, mild effect, moderate effect, very large effect, extreme large effect. Effect modifiers such as age, gender, and duration of acne were controlled through stratification. Post-stratification chi-square test / Fisher's Exact test as appropriate was applied to see the impact of these effect modifiers on DLQI. Taken two-sided P-value < 0.05 as significant.

**RESULTS**

Mean ± SD of age was 25.4±5.2 with C.I (24.84.25.95) years as shown in TABLE 1.

Mean ± SD of duration was 8.1±3.6 with C.I (7.71.8.48) months as shown in TABLE 2.

Out of 343 patients 157 (45.8%) were male and 186 (54.2%) were female as shown in FIGURE 5.

In frequency of different category of dermatology life quality index

(DLQI) 44 (12.8%) patients had no effect, 105 (30.6%) had mild, 74 (21.6%) moderate effect, 86 (25.1%) had very large while 34 (9.9%) patients had extreme larger effect as shown in TABLE 3.

Stratification of age, gender and duration of acne were done with respect to outcome for (DLQI) as shown from TABLE [4-6].

Table 1: Descriptive Statistics of Age n=343

Mean	25.4 (Years)
±Standard deviation	5.2
95% confidence interval	24.84 25.95
Minimum	18
Maximum	35
Range	17

Table 2: Descriptive Statistics for Duration of Acne

Mean	8.1 (Months)
±Standard deviation	3.6
95% confidence interval	7.71 8.48
Minimum	6
Maximum	15
Range	9

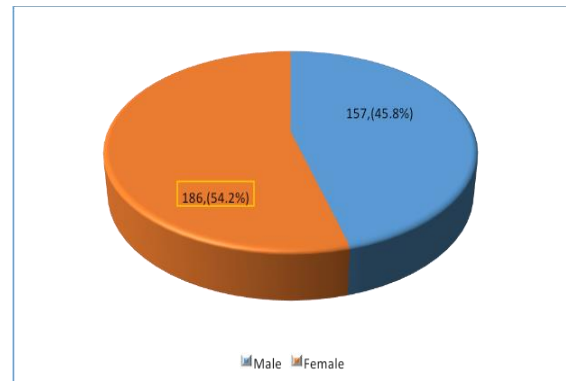


Figure 5: Frequency of Gender n=343

Table 3: Frequency of Dermatology Life Quality Index (DLQI) n=343

OUTCOME (DLQI)	FREQUENCY	PERCENTAGE
No Effect	44	12.8
Mild Effect	105	30.6
Moderate Effect	74	21.6
Very Large Effect	86	25.1
Extreme Large Effect	34	9.9

Table 4: Stratification of Age Groups with DLQI n=343

Dermatology life quality index (dlqi)	Age group [in years]		P-value
	18 – 30	> 30	
No effect	Yes (7.3%)	19 (5.5%)	0.016
	No (64.7%)	77 (22.4%)	
Mild effect	Yes (20.7%)	34 (9.9%)	0.229
	No (51.3%)	62 (18.1%)	
Moderate effect	Yes (14.3%)	25 (7.3%)	0.210
	No (57.7%)	71 (20.7%)	
Very large effect	Yes (15.7%)	32 (9.3%)	0.028
	No (56.3%)	64 (18.7%)	
Extreme large	Yes (5.8%)	14 (4.1%)	0.071
	No (66.2%)	82 (23.9%)	

Applied Chi Square test

Table 5: Stratification of Gender with DLQI n=343

Dermatology Life Quality Index (DLQI)		Gender		P-Value
		Male	Female	
No Effect	Yes	20 (5.8%)	24 (7.0%)	0.964
	No	137 (39.9%)	162 (47.2%)	
Mild Effect	Yes	39 (11.4%)	66 (19.2%)	0.033
	No	118 (34.4%)	120 (35.0%)	
Moderate Effect 0.001	Yes	Moderate Effect 0.001	28 (8.2%)	01.00
	No	111 (32.4%)	158 (46.1%)	
Very Large Effect	Yes	40 (11.7%)	46 (13.4%)	0.874
	No	117 (34.1%)	140 (40.8%)	
Extreme Large	Yes	15 (4.4%)	19 (5.5%)	0.838
	No	142 (41.4%)	167 (48.7%)	

Applied Chi Square test

Table 6: Stratification for Duration of Acne with DLQI n=343

Dermatology Life Quality Index (DLQI)		Duration [In Months]		P-VALUE
		6 – 10	> 10	
No Effect	Yes	23 (6.7%)	21 (6.1%)	0.241
	No	184 (53.6%)	115 (33.5%)	
Mild Effect	Yes	68 (19.8%)	37 (10.8%)	0.267
	No	139 (40.5%)	99 (28.9%)	
	Yes	59 (17.2%)	15 (4.4%)	01.000
	No	148 (43.1%)	121 (35.3%)	
Very Large Effect	Yes	47 (13.7%)	39 (11.4%)	0.212
	No	160 (46.6%)	97 (28.3%)	
Extreme Large	Yes	22 (6.4%)	12 (3.5%)	0.584
	No	185 (53.9%)	124 (36.2%)	

Applied Chi Square test

**DISCUSSION**

Acne vulgaris is a very frequent skin disease that mostly involves adults both physically and emotionally, while it can also influence individuals in any age [19]. Acne has remarkable effect on self-image and influences health-related quality of life (HRQL) [20].

This hospital-based study included 343 cases of acne vulgaris in 6 months. Durai and Nair [21] included 140 cases over 5 months while Kulthanan et al. [22] included 110 cases in 1-year. However, some school-based studies [23-24] had a much higher number of participants as in these studies, acne was actively searched for in the study population.

This study included cases 18 years and above. The mean age of the study population was 25.4, while Tasoula

et al. [23] reported a mean age of 15.77 among the population of 11–19 years.

Severity of acne worsens as age advances, affecting QoL [25]. A possible explanation could be that in late adolescents and early adult life, peer and romantic relationships form an important component and thus appearance has significant weightage; comparatively, in early adolescence, family is still the key and appearance does not matter much [23].

This study had 54.2% females which corroborated with other studies [24]. No gender difference in DLQI scores was noted in this study. Similar finding was reported by Durai and Nair [25] indicating both genders were concerned about their appearance and self-reported acne. This was in contrast to some studies, where females had higher DLQI scores [16].

In the study of Hazarika N, et al [17], 114 cases were included with females (57%) outnumbering males. Ghaderi R, et al [26] noted that out of 70, 28 (40%) of the patients were males and 42 (60%) were females. Chowdary NK, et al [27] reported that a total of 100 patients were included into the study, with equal number of males and females. Kulthanan K, et al [22] stated that females (55%) outnumbered males (45%).

In present study, the average duration was 8.1±3.6 months. In this study, different category of dermatology life quality index (DLQI) were described. According to which, it was found that 44 (12.8%) patients had no effect, 105 (30.6%) had mild effect, 74 (21.6%) patients had moderate effect, 86 (25.1%) had very large effect while 34 (9.9%) patients had extreme larger effect.

Hazarika N, et al [17], reported that 10 (8.8%) patients had no effect, 38 (33.3%) had mild, 37 (32.5%) had moderate, while 29 (25.4%) had severe effects. Chowdary NK, et al [27] in his study stated that mild acne was seen in 15%, moderate in 33% and severe in 52%. Kulthanan K, et al [22] noted that a 39% had mild effect followed by 30% moderate effect and 16% severe effect.

Facial acne alone constituted majority of cases though site of acne did not influence DLQI scores in this study. Durai and Nair [24] reported facial acne as most common (99.3%); site of acne did not show any significant association with the QoL. This was contradictory to earlier studies reporting severity of facial acne to correlate with worsening QoL [28-29].

Increased sebum secretion is a major concurrent event associated with the development of acne. Kulanthan et al. [2] found two-thirds of acne patients to have oily skin.

A significant correlation between DLQI scores and grade of acne was observed in this study, which was in agreement to studies done in Greece, Iraq, Turkey, and France [10, 16]. Few past studies have shown no such association [30-31].

Interestingly, it was found that few patients with grade II acne and some cases with mild scar had elevated DLQI scores which implied that even mild acne and scars can pose a cosmetic problem to some patients, diminishing their QoL.

The differences in the findings of various studies highlight the social, behavioral, and cultural factors, differences in population characteristics, individual perception, plus the study design, and assessment tool used. Though the study

population in this research was Suburban, both genders did identify even mild acne as a significant problem and reported early for treatment. Furthermore, the effect of acne on the QoL of patients was significant.

## CONCLUSION

It is to be concluded that his study showed significant impairment of QoL in acne patients. Assurance and counseling along with early treatment of acne vulgaris are important to reduce disease-related psychosocial sequelae. Additional studies are required to confirm our findings probably with a larger sample size and with more parameters in multiple study centers in Pakistan are needed to confirm the findings of the present study.

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