

# Psychosocial impact of acne vulgaris in adolescents presenting to skin OPD of a public hospital

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## Abstract

**Background** Acne vulgaris is very common disorder with inflammation of pilosebaceous unit. It involves areas with high distribution of sebaceous glands like the face and upper trunk. This disease has a peak incidence in adolescence, reaching up to 85%.<sup>1</sup> Acne poses a significant emotional and psychological effect in adolescents, which is the peak time of their social and physical development.<sup>2</sup> Many international studies are available but till date, no conclusive data is available regarding psychosocial impact of acne vulgaris, particularly in adolescents of Pakistan.

**Methods** We conducted a cross-sectional study over 06 months (January to July 2019) among adolescents presenting to dermatology OPD, PAF Hospital Islamabad. One hundred eighty adolescents diagnosed with Acne Vulgaris were evaluated through the Cardiff Acne Disability Index (CADI). SPSS version 20 (IBM Corp., Armonk, NY, US) was used to analyze the data.

**Results** Our sample consisted of 44.4% Female and 55.6% male patients with a mean age of  $17.41 \pm 1.67$  years. 80.6% of patients were students. 67.8% of patients had mild, 31.1% moderate, and 1.1% severe acne. The calculated mean CADI score was  $7.69 \pm 3.32$ . Our study showed 26% adolescents had severe, 44% had moderate, while 30% had mild impact on quality of life. The results also showed a significant association between impaired quality of life of acne severity and gender.

**Conclusion** Acne vulgaris shows a considerable psychosocial impact on adolescents in Pakistan. Along with the dermatologist, a mental health professional might offer a more holistic approach to treating such patients.

## Key words

Acne vulgaris; Psychosocial impact; Teenagers; Adolescents; Quality of Life.

## Introduction

Inflammation of the Pilosebaceous unit is the primary pathology in Acne vulgaris. Moreover, there is abnormal desquamation, excess sebum production, a proliferation of *Cutibacterium acnes*, and the production of pro-inflammatory mediators.<sup>3</sup> Global Burden of Disease project reports 9.4% prevalence of acne which ranks it

as the eighth most prevalent disease across the globe and a 5% prevalence in Pakistan.<sup>4</sup> This disease has its peak incidence in adolescence, reaching up to 85%.<sup>1</sup>

Acne which is perceived by many as just a cosmetic problem might have significant emotional effect in adolescents, which is the peak time of their social and physical development. Acne negativity impacts the mood and self-esteem, and may result in extreme depression and suicidal behavior.<sup>5-7</sup> Acne appears to be a condition that can damage the

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emotional functioning of patients and even has the potential to become a major depressive disorder.<sup>8</sup>

Vilar GN, Santos LA, and Sobral Filho JF studied the psychological effects and quality of life impact of acne on adolescents, and showed a significant correlation between the two.<sup>9</sup> They conducted the study on students and Quality of Life in Children's Dermatology Index was used as the assessment parameter.

Walker N and Lewis-Jones MS studied the quality of life in adolescent school-children with acne in Scotland using the Cardiff Acne Disability Index (CADI) and Children Dermatology Life Quality Index (CDLQI). The mean CADI score was low at 1.9 (13% impairment) but 12 teenagers scored between 5 and 9 (33-60% impairment), one scored above 10 (>67% impairment), another student even scored 15 (100% impairment).<sup>10</sup>

While it is intuitive that acne has a psychological impact, this remains to be evaluated in the teenagers of Pakistan. The aim of our study is to address this very issue by assessing the psychological impact of acne vulgaris among adolescents in Pakistan.

## Methods

We conducted a cross-sectional study over 06 months (January to July 2019) among adolescents presenting to dermatology OPD, PAF Hospital Islamabad.

Male and female adolescents aged 11 to 19 were selected through non-probability consecutive sampling. WHO calculator was used to determine the sample size with a confidence interval of 95% and 4% precision. The population proportion of moderate disability was taken as 0.08.<sup>10</sup> Adolescents with different

severities of acne (Mild, moderate, and severe) were included in our study, but those with any coexistent skin condition (e.g., Psoriasis, vitiligo, Chicken Pox) were excluded. Moreover, cases with pre-diagnosed depressive disorder were excluded. After history and examination, written consent was taken. CADI questionnaire was filled out after it was verbally translated into Urdu as per the need of the patients.

The questionnaire comprised 05 questions regarding symptoms of acne, individual feelings, social life/ relationships, clothing choice, sports, job, and education. Each question has four options, and each is given a specific score. This total score is divided into 03 groups: (1-5) mild effect, (6-10) moderate effect, and (11-15) severe effect.

SPSS version 20 (IBM Corp., Armonk, NY, US) was used to analyze the data.

## Results

180 patients of either gender between ages of 11 to 19 years meeting the study's inclusion criteria were evaluated. Among 180 patients, 55.6% were male while 44.4% were female. The mean age of adolescents was  $17.41 \pm 1.67$  years.

In our study, the mean CADI score was  $7.69 \pm 3.32$ . CADI final score was used to assess the psychosocial impact of acne on adolescents' quality of life. 26% of adolescents showed a severe impact, 44% with moderate and 30% having a mild effect on their psychosocial functioning (**Figure 1**). There was also considerable variation between Psychosocial impact due to Acne in both genders (**Table 1**).

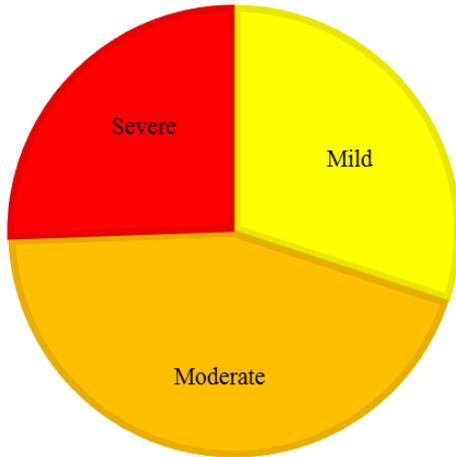
## Discussion

All chronic skin diseases significantly impact patients' quality of life, and by using subjective measures like the "Quality of Life index," a

**Table 1** Psychosocial impact on quality of life in both genders.

Gender	Psychosocial Impact on Quality of Life			Total (n=180)
	Mild	Moderate	Severe	
Male	39 (22%)	44 (25%)	17 (9%)	100
Female	15 (8%)	36 (20%)	29 (16%)	80

■ 0-5 = Mild   ■ 6-10 = Moderate   ■ 11-15 = Severe



**Figure 1** Frequency based on CADI score.

more patient-centered approach can be adopted in clinical practice. This assessment can highlight the burden on the patient of this disfiguring dermatologic illness.

CADI was selected among the various quality of life measurement indices because it is designed for children and teenagers. Because of the convenient design of the questionnaire, it has been translated into 23 languages (Albanian, Arabic, Chinese, Dutch, Estonian, etc.). All these questionnaires are available for download on the Dermatology UK website.<sup>11</sup> However, this questionnaire has never been translated into Urdu, whereas many patients in our study required proper translation in Urdu to understand this index questionnaire.

CADI index is used internationally with consistent results, but it poses cultural and religious constraints in Muslim countries, particularly Pakistan. In our religion and culture, premarital sex is not allowed as opposed to a western culture where teenagers are sexually

active. The CADI questionnaire particularly asks about the effect of acne on relationships with the opposite sex. We suggest a need to develop an Urdu version of the CADI questionnaire following Pakistan's local culture and norms. Such an Urdu questionnaire might make it more convenient to assess the disability index in Pakistan's population without posing objections at the community level. A further study can then use this Urdu questionnaire, and after validating the results, it can be opted as a standard to assess the Acne Disability Index in the Teenage Group in Pakistan.

Overall, in the assessment of our study, the mean CADI score was calculated to be  $7.69 \pm 3.32$ , which is very comparable to the Persian study ( $7.57 \pm 2.58$ ) by Aghaei S, Mazharinia N *et al.*<sup>12</sup> Our results were higher than the Scottish study (mean 1.7) conducted by Walker N *et al.*<sup>10</sup> Several factors could explain the high results of our study. We conducted the study in Islamabad, the country's capital, with a decent literacy rate and high standard of living. The people here are more concerned about their appearance than in rural areas of the country.

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