



The Psychological Impact of Acne Vulgaris on Patients at a Tertiary Care Hospital

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Study Protocol

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ABSTRACT

Acne vulgaris is multifactorial in origin where *Propionibacterium acnes* and altered keratinisation are some of the factors which contribute to the inflammation and obstruction of the pilosebaceous unit. Acne causes the formation of pleomorphic lesions like comedones, papules, pustules, nodules and cysts which may lead to scarring. Lesions of acne are predominantly seen on the face, chest, back, shoulders and upper arms. The aim of the study is to understand the psychological impact that acne vulgaris has on patients in a tertiary care hospital. The study will be carried out over a period of two years from May 21 to May 23 in Terna Speciality Hospital and Research Centre in Nerul, Navi Mumbai, in the Department of Dermatology, Venereology and Leprosy in collaboration with the Department of Psychiatry in Terna Speciality Hospital and Research Centre in Nerul, Navi Mumbai. This study is done to get a deeper look at the psyche of the people suffering from it and what can be done to manage it better.

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Keywords: Multifactorial; *Propionibacterium acnes*; inflammation and obstruction.

1. INTRODUCTION

Acne vulgaris can be defined as a chronic, self-limiting inflammatory disease of the pilosebaceous unit usually seen in adolescence [1,2]. Acne is multifactorial in origin where *Propionibacterium acnes* (*P. acnes*) and altered keratinisation are some of the factors which contribute to the inflammation and obstruction of the pilosebaceous unit. Acne causes the formation of pleomorphic lesions like comedones, papules, pustules, nodules and cysts which may lead to scarring. Lesions of acne are predominantly seen on the face, chest, back, shoulders and upper arms.

Acne vulgaris occurs all around the world and affects about 85% of young adults aged between 12 to 25 [3]. The age of onset is at puberty with the peak incidence being 14 to 17 years in women and 16 to 19 years in men. Severe acne is more prone to occur in Asians & Africans as compared to White population. It is more common and severe in males compared to females due to androgen activity [4]. It is seen that people who live in the urban population is more commonly affected than those in the rural population and more severe grades of acne are seen in smokers, in comparison to non-smokers [5,6] Genetic heritability estimates range from 50-90% [7].

Despite the fact that acne does not cause physical harm, it can have a substantial mental impact. Acne commonly involves the face. One's opinion of one's body image is influenced by their facial appearance. Severe acne is associated with increased psychological impact like depression, anxiety, poor self-image, poor self-esteem [8,9,10]. In more severe acne and, later stages of puberty, psychiatric issues are more likely [11]. Acne is linked to a higher risk of depression, anxiety, and suicide ideation [12].

Adolescence is a period of substantial physical, emotional, and social growth, which can lead to mental or psychosocial problems. Acne's impact might be influenced by one's personal and social opinions of the condition. In a survey of acne patients under the care of a dermatologist, nearly 30% believed that poor skin hygiene was the cause of acne [13].

Although acne was once thought to be only a cosmetic problem, the disease's psychological impacts have now been scientifically confirmed.

These effects have been found in studies to improve when acne is treated [14].

In a study conducted on Scottish adolescents of teenagers who perceive their lives to be significantly affected by their acne. It is important to identify and treat such teenagers early to reduce the future socio-economic burden of their acne [15]. Acne can have a significant psychological impact on patients [16]. It can have serious psychological repercussions, with the severity of the condition determining the level of shame, lack of enjoyment, and involvement in social activities, as well as leaving chronic scarring with long-term consequences [17,18].

Acne is a serious problem when compared to other chronic illnesses [19]. Acne can have significant psychological and social implications even if it is not connected with severe disease, death, or physical disability [20]. One of the driving principles for acne clinical management is to reduce the psychosocial burden of the disease [21,22] and it is critical to quantify and evaluate this impact [23].

1.1 Aims And Objectives

Aims: The aim of the study is to understand the psychological impact that acne vulgaris has on patients in a tertiary care hospital.

Objectives

The objective of the study is-

- To know the prevalence of how acne vulgaris affects the life of the patient psychologically.
- To know the relation between the severity of acne by grading and its psychological impact.
- To know the prevalence of anxiety and depression in teenagers and young adults.
- To know how people see themselves and how detrimental are the psychological aspects as compared to other skin conditions.

2. MATERIALS AND METHODS

2.1 Study Setting

The study is an observational study. The study will be carried out over a period of two years from

May 2021 to May 2023 in Terna Speciality Hospital and Research Centre in Nerul, Navi Mumbai, in the Department of Dermatology, Venereology and Leprosy in collaboration with the Department of Psychiatry in Terna Speciality Hospital and Research Centre in Nerul, Navi Mumbai. It will be carried out in the Department of Dermatology on an outpatient department (OPD) basis. Patients with acne vulgaris will be identified. Following identification, after taking the patient's consent, the patient will be evaluated based on the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) questionnaire by the American Psychiatric Association.

2.2 Duration of Study

The duration of study will be of 2 years from May 2021 to May 2023.

2.3 Study Group

Patients between the ages of 15 to 25 years with acne vulgaris attending the outpatient department (OPD) of the Department of Dermatology in TSHRC, Nerul, Navi Mumbai that fulfil the given diagnostic criteria.

2.4 Inclusion Criteria

- Age between 15 to 25 years of both genders
- Clinically diagnosed cases of acne vulgaris
- Patients who are willing to participate in the study

2.5 Exclusion Criteria

- Patients having acne due to underlying systemic conditions such as Polycystic Ovarian disease, Cushing's syndrome, congenital adrenal hyperplasia will be excluded.

- Patients with hormonal acne due to pregnancy, menstruation, increased androgen levels, menopausal acne will be excluded from the study.

2.6 Study Design

Observational study.

2.7 Methods

Patients are diagnosed and after taking consent are then graded according to clinical grading of acne. Following that answers regarding the impact that acne has on their life and their feelings towards it will be noted. The clinical grading of acne vulgaris will be done as follows in fig. 1.

Following clinical grading of acne and taking the patient's consent the patient will be evaluated by the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) by the American Psychiatric Association.

3. RESULTS AND DISCUSSION

Purvis D et al. A cross-sectional study of 9,567 New Zealand secondary school students found that 14.1% of pupils had "problem acne," which was linked to an elevated likelihood of depressive symptoms (odds ratio [OR], 2.04) and anxiety (OR, 2.3). 14.1% and 4.8% of students, respectively, experienced clinically relevant sadness and anxiety symptoms. An increase in the number of people with acne problems was linked to an increase in the number of people with acne. It was thus concluded that acne-prone teenagers are more likely to suffer from depression, anxiety, and even attempt suicide. Their mental health should be prioritised, and the significance of asking directly about suicide is emphasized [24].

Grade	Severity	Clinical findings
I	Mild	Comedones, both open and closed, with a few inflammatory papules
II	Moderate	Papules, comedones, few pustules.
III	Moderately severe	Predominant pustules, nodules, abscesses.
IV	Severe	Cysts, abscesses, and excessive scarring

Fig. 1. The clinical grading of acne vulgaris

Golchai J et al. It is a cross-sectional study in which anxiety was present in 68.3% of the patients, whereas depression was present in 25.6%. Between the patients and the control groups, there was a significant difference in anxiety prevalence ($P < 0.001$). The mean anxiety and depression scores were 9.26 0.382 and 7.10 0.339, respectively, and the mean anxiety score was higher in the patients group than in the control group ($P = 0.001$). Because of the high prevalence of anxiety in acne vulgaris patients, a simple questionnaire such as the HADS should be used to examine their mental condition [25].

Do JE et al. It's a cross-sectional study in South Korea in which acne was found in 78.9% of the study samples, with 10.2 percent of students suffering from moderate-to-severe acne. Boys had more acne and it was more severe than girls. Girls and those with severe acne exhibited higher degrees of emotional and social problems. The more stressed the students were as the acne worsened. The extent of self-image degradation and the degree of stress were both measured. Acne is a prevalent adolescent problem in Korea, and it appears to have a significant impact on mental health. In the treatment of acne, dermatologists should be aware of the need of basic psychological treatment in conjunction with early medical and educational intervention [26].

Uhlenhake E et al. conducted a retrospective examination in which clinical depression was found to be two to three times more common in acne patients than in the general population, with 8.8% of acne patients reporting clinical depression. Acne patients aged 18 and above accounted for the majority of cases of depression and antidepressant medication use, with the 36-64 age group accounting for the largest percentage. Female acne patients made up around 65.2 percent of the total population. Acne is a physical and psychological illness that affects people of all ages. There is a link between acne patients and clinical depression [27].

Samuels D Vetol. A meta-analytic review was done in which acne vulgaris was found to have a substantial link to depression ($r = 0.22$ [95 percent confidence interval 0.17-0.26, $P.00001$]) and anxiety ($r = 0.25$ [95 percent confidence interval 0.19-0.31, $P.00001$]). Age, research setting, and geographic region all had moderating effects, according to subgroup

analyses and comparisons. Clinicians should treat acne aggressively and consider psychiatric screening or referrals because of the elevated risk of depression and anxiety [28].

Studies on Acne were reported by Hagone et al. [29] and Morey et al. [30] Other related studies were also reviewed [31-35].

4. CONCLUSION

Though a common condition, the psychological effects it causes are the least understood in the Indian population. Even though it is a self-limiting disease, it tends to cause psychological effects like anger, depression, low self-esteem, and anxiety. Thus, this study is done to get a deeper look at the psyche of the people suffering from it and what can be done to manage it better.

CONSENT

Following identification, after taking the patient's consent, the patient will be evaluated based on the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) questionnaire by the American Psychiatric Association.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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