

DEPRESSION AND QUALITY OF LIFE IN PATIENTS WITH PEMPHIGUS: A CROSS-SECTIONAL STUDY

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ABSTRACT

Objective: The objective of the study is (1) to analyze the prevalence and severity of depression in cases of pemphigus and (2) to study the association of demographic factors with the presence of depression in cases with pemphigus.

Methods: A cross-sectional single-interview study was carried out on 100 consecutively selected patients with pemphigus attending the dermatology out-patient department in a tertiary care hospital. The assessment was done with semi-structured pro forma, Beck depression inventory (BDI), and quality of life (QoL) measure – Skindex-16. The Statistical Package for the Social Sciences 24.0 was used for statistical analysis and $p < 0.05$ was taken as statistically significant.

Results: Out of 100 cases, there were 60 (60%) males and 40 (40%) were females with M: F ratio of 1:0.66. The mean age of male and female patients was found to be comparable with no statistically significant difference ($p = 0.6061$). The majority were married, employed, and from rural backgrounds. 22% satisfied the Diagnostic and Statistical Manual for Mental Disorders 5th edition criteria for major depressive disorder. Assessment using BDI in these patients for severity of depression showed mild depression in 12%, moderate depression in 7%, and severe depression in 3%. Patients having a longer duration of illness and a history of frequent hospitalization were found to have significantly high scores on the subscale for depressive symptoms. QoL assessment using the Skindex-16 scale among these patients showed that they experienced more severe emotional and symptomatic effects due to skin disease compared to functional effects, especially during relapse. Those who had poor QoL showed significantly high scores on the subscale for depressive symptoms.

Conclusion: More than 20% of patients of pemphigus had diagnosable depression with significant effects on QoL. Therefore, regular screening for depression is important in pemphigus patients as it will help in planning early intervention.

Keywords: Pemphigus, Depression, Quality of life, Hospitalization.

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INTRODUCTION

Pemphigus encompasses a group of serious autoimmune conditions characterized by the development of painful blisters on the skin and/or mucous membranes, which tend to rupture easily, leading to erosions. Research indicates that the global incidence of pemphigus ranges from 0.6 to 32 cases/million person-years, with onset typically occurring between the ages of 45 and 65 years [1].

The initial clinical presentation often involves oral mucosal lesions that can precede skin involvement for several weeks to months. These oral lesions manifest as painful ulcers that can affect eating and speaking. Cutaneous lesions typically appear as superficial blisters that easily rupture, leading to widespread, nonhealing erosions. The Nikolsky's sign, where gentle pressure on the skin results in the separation of the epidermis, is often positive and indicative of the disease. Patients may also experience symptoms such as itching, burning, or pain at the affected sites, significantly impacting their quality of life (QoL) [2].

Managing pemphigus poses considerable challenges, often necessitating prolonged treatment with high doses of systemic corticosteroids and other immunosuppressants. Despite advancements in treatment, pemphigus profoundly affects patients both physically and psychologically. The chronic nature of the disease, its impact on appearance, social stigma, and the significant side effects associated with treatment contribute to its substantial psychological burden on affected individuals [3].

The psychological impact of pemphigus can be profound, significantly affecting patients' mental and emotional well-being [4]. The chronic and relapsing nature of the disease, coupled with the visibility of the skin and mucosal lesions, often leads to feelings of embarrassment, social isolation, and reduced self-esteem [5]. Persistent pain and discomfort, along with the burden of long-term treatment, can contribute to anxiety and depression. The unpredictability of flare-ups and the potential for severe complications further exacerbate stress and mental health challenges [6]. Patients may struggle with body image issues and face difficulties in maintaining personal and professional relationships, leading to a diminished QoL. Effective management of pemphigus, therefore, necessitates a comprehensive approach that includes psychological support and counseling alongside medical treatment. Pemphigus, like any other chronic dermatological condition, not only disrupts social activities, interpersonal connections, and self-esteem but also impacts aspects like sexual intimacy. Moreover, these conditions have a bidirectional relationship with psychological problems. Depression can worsen the severity of pemphigus by hampering patients' ability to manage their symptoms effectively, creating a detrimental cycle and deteriorating the QoL [7].

Despite the significant impact on the mental health of individuals with pemphigus, this aspect of the disease has received limited attention, likely due to its rarity. Population-based studies from Israel and Taiwan have indicated that individuals with pemphigus face increased risks of depression (1.19–1.98 times) and bipolar disorders (1.7 times) compared to healthy counterparts. In addition, questionnaire and

interview-based studies across diverse populations have revealed high prevalence rates of depression and anxiety (ranging from 39.7% to 77.5%), which can persist even after achieving complete remission. However, in India, only a few studies have explored these psychological challenges in pemphigus patients and their effect on the quality of QoL [8]. Therefore, the objective of this study was to assess depressive disorders and QoL among individuals diagnosed with pemphigus.

METHODS

This cross-sectional study was performed in the Department of Dermatology at Tertiary Care Hospital over the period of 1 year. The Institutional Ethics Committee approved the study and informed written consent was obtained from all the patients enrolled in this study. The sample size was calculated on the basis of pilot studies done on the subject of psychiatric comorbidities in patients with chronic dermatological disorders. Assuming 90% power and a 95% confidence interval, the sample size required was 90 patients. Based on the central limit theorem, the sample size was calculated to be sufficient if it was more than 90; thus, we included that 100 consecutive patients with pemphigus vulgaris (PV) and pemphigus foliaceus (PF), the two common subtypes of pemphigus, were enrolled on the basis of a predefined inclusion and exclusion criteria. The diagnosis of pemphigus was made by a dermatologist based on clinical presentation and appropriate investigations. Patients under the age of 18 years, those with a diagnosis of anxiety or depression before the onset of pemphigus, and those with severe cognitive impairment were excluded from the study. The study protocol was approved by the Institutional Ethics Committee.

The demographic details of all the patients such as age, gender, and socioeconomic status of the patients were noted. A detailed medical history was obtained, focusing on any chronic conditions, history of dermatological issues other than pemphigus, and any previous treatments. Family history of similar illness or history of depression in any of the family members was asked and noted. Prescriptions of all the patients were analyzed. Patients were requested to respond to the Becks Depression Inventory (BDI) [9] and Skindex-16 [10]. Diagnosis of depression was done using a diagnostic and statistical manual for mental disorders 5th edition (DSM V) criteria [11] while BDI was used to assess the severity of depression. Skindex-16 is a brief QoL measure for patients with skin diseases.

Depending on data distribution, continuous variables were shown as mean and standard deviation (SD) while categorical variables were reported as numbers and percentages (n, %). Analysis of categorical variables was performed with the χ^2 (chi) test. Correlations were evaluated by Spearman’s rank correlation coefficient.

Inclusion criteria

- Confirmed diagnosis of PV or PF
- Adults aged 18 years and older
- Ready to give informed and written consent to be part of the study
- Minimum disease duration of 6 months.

Exclusion criteria

- Those who refused consent to be part of the study
- Age <18 years
- Other significant dermatological or systemic diseases
- History of severe psychiatric disorders (other than depression)
- Currently undergoing treatment for another major illness
- Pregnant or breastfeeding women.

RESULTS

In this study of 100 cases, the analysis of gender distribution showed that out of 100 cases, there were 60 (60%) males and 40 (40%) females with M: F ratio of 1:0.66 (Fig. 1).

The analysis of the age groups of the patients showed that the majority of the male patients were within the 41–50-year age group

(22 cases, 22%), followed by the 18–30-year group (16 cases, 16%). The mean age for male patients was 40.20 years with a SD of 12.34 years. Female patients are most commonly found in the 18–30 years and 51–60-year age groups (both 12 cases, 12% and 10 cases, 10%, respectively). The mean age for female patients was slightly lower at 38.92 years, with a SD of 11.78 years. The mean age of male and female patients was found to be comparable with no statistically significant difference (p=0.6061) (Table 1).

Patients were assessed for the presence of depression by DSM V criteria [12] while BDI was used to assess the severity of depression. Among the studied cases mild and moderate depression was seen in 17% and 9% patients respectively. Severe depression was seen in only 3 (3%) cases (Fig. 2).

The present study shows a 29% prevalence of depression among pemphigus patients out of which 17% had mild depression. We have found that at ages <40 years, females and married individuals with pemphigus were significantly more prone to depression while residence and occupation had no role (Table 2).

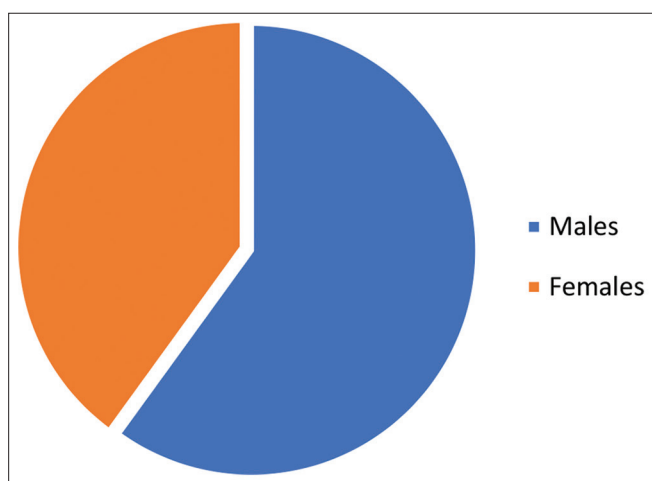


Fig. 1: Gender distribution of studied cases

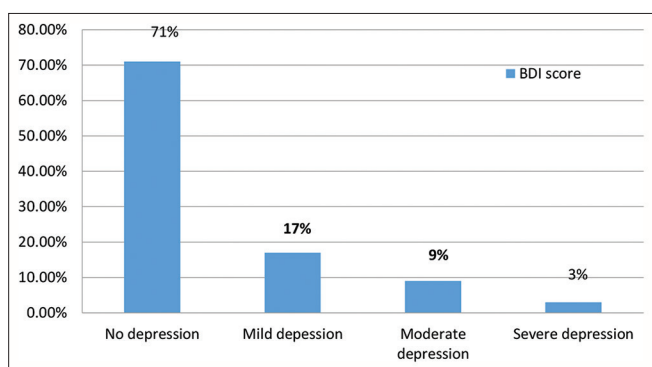


Fig. 2: Prevalence and severity of depression

Table 1: Gender-wise age distribution of studied cases

Age Groups	Male		Female	
	No of cases	Percentage	No of cases	Percentage
18–30 years	16	16	12	12
31–40 years	12	12	10	10
41–50 years	22	22	8	8
51–60 years	10	10	10	10
Mean age	40.20±12.34 years		38.92±11.78 years	

p=0.6061 (not significant)

Overall, QoL deteriorated among patients with pemphigus affecting all domains of Skindex-16. Mean scores for the symptom domain of Skindex-16 were significantly high in the present study (Table 3).

Table 2: Association of demographic factors with presence of depression

Demographic factors	Depressed	Nondepressed	p-value
Age (years)			
20-40	20	30	0.01
41-60	9	41	
Gender			
Female	22	38	0.03
Male	7	33	
Marital status			
Married	21	34	0.02
Unmarried	8	37	
Residence			
Urban	19	39	0.3
Rural	10	32	
Occupation			
Employed	18	42	0.7
Unemployed	11	29	

Table 3 : Mean scores for Skindex-16

Skindex-16 (domains)	Mean score (n=100)	Standard deviation
Symptom	21.59	6.12
Emotion	14.78	3.08
Function	11.32	3.68

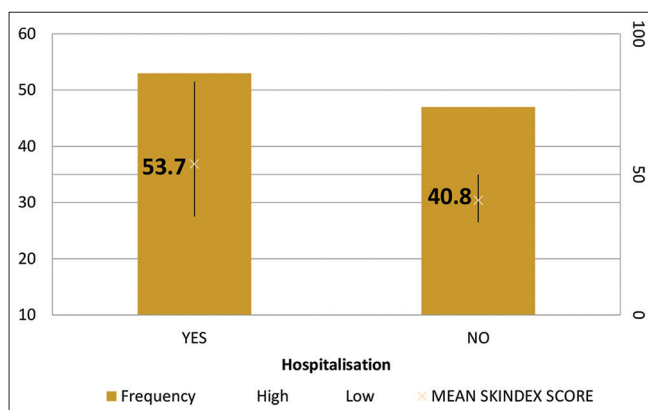


Fig. 3: Association between quality of life and frequency of hospitalization

The analysis of QoL in patients with pemphigus showed that the increased frequency of hospitalization among pemphigus patients was significantly associated ($p < 0.01$) with poor QoL. It was also found that depression was significantly correlated with poor QoL (Figs. 3 and 4).

DISCUSSION

Previous research revealed that dermatologists often underestimated the occurrence of depression in individuals with significant skin conditions [13]. There is an increased risk of depression among patients with various dermatological disorders, including psoriasis, alopecia areata, and atopic dermatitis [14]. Similarly, pemphigus also increases the risk of depression due to its potential impact on body image and the tendency for frequent recurrence and challenging treatment [15]. Our study similarly found an increased prevalence of depression among pemphigus patients. Depression can profoundly diminish QoL and, in severe cases, escalate into a serious condition. Nevertheless, depression is manageable with appropriate treatment. Hence, in addition to addressing pemphigus itself, physicians should also prioritize recognizing and addressing the potential development of depression in affected individuals.

Hsu *et al.* conducted a nationwide cohort study to investigate the risk of depression in patients with pemphigus [16]. The study utilized data from the National Health Insurance Research Database of Taiwan, covering the period from 2000 to 2010. Multivariate Cox proportional hazards regression models were employed to adjust for demographic characteristics and comorbidities. The results indicated that patients with pemphigus had a 1.98 times higher likelihood of developing depression compared to the control group (adjusted HR: 1.99, 95% CI=1.37-2.86). In addition, female patients showed a higher incidence of depression than males (female, adjusted HR: 2.09; male, adjusted HR: 1.87). Upon the basis of these findings, the authors concluded that pemphigus significantly increases the risk of depression, particularly among female patients. A similar increased risk of depression in patients with pemphigus was also reported by authors, such as Layegh *et al.* [12] and Matthews *et al.* [4].

Wohl *et al.* conducted a case-control study to assess the comorbidity of depression in patients with pemphigus [17]. In this study, data from 1998 to 2010 were used. 13 adult pemphigus patients were compared with age- and gender-matched controls. The primary outcome was the prevalence of psychiatric disorders. The study included 255 pemphigus patients and 509 controls. Results showed that depression was significantly higher among pemphigus patients (OR=1.19, 95% CI: 1.12-1.27, $p < 0.001$). Upon the basis of these findings, the authors concluded that depression is a significant comorbidity in pemphigus patients, necessitating psychiatric assessment and intervention. Similar findings were also reported by Picardi *et al.* [18] and Caccavale *et al.* [19].

The present study suggested that females with pemphigus are at an increased risk of depression. Similar findings were seen in a cohort

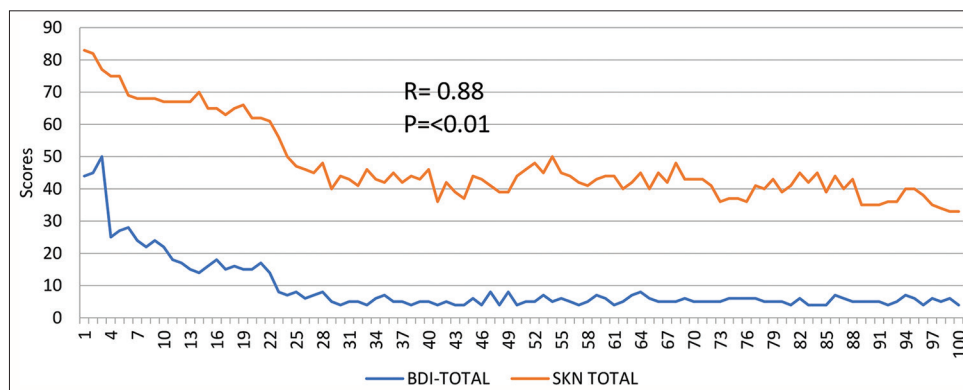


Fig. 4: Correlation between depression and quality-of-life

study done in Iran [20]. Married individuals were having more risk of depression as compared to unmarried. Place of residence and occupation had no role in the risk of depression. Increased frequency of hospitalization due to pemphigus also increases the risk of depression among patients significantly affecting their mental health [21].

Pemphigus is a severe condition that significantly impacts QoL and overall health status due to the presence and spread of unattractive lesions, functional limitations, the chronic nature of the disease, and the necessity for treatments that often carry substantial adverse effects. The present study demonstrated overall deterioration of QoL among patients with pemphigus significantly affecting the symptom domain of Skindex-16. To date, only a limited number of studies have investigated the QoL outcomes in individuals with pemphigus, employing various assessment tools. Terrab *et al.* discovered a notably diminished health-related QoL among 30 pemphigus patients compared to the general population, utilizing the SF-36 instrument [22]. Similarly, in another study utilizing the German version of the Dermatology QoL index, a dermatology-specific QoL measurement tool, patients with pemphigus exhibited significantly higher overall scores compared to those with other skin conditions, such as psoriasis and rosacea. These studies agreed with the findings of our study [5].

The presence of depression among pemphigus patients and deterioration of QoL go hand in hand. There was a significant correlation between BDI scores and Skindex-16 scores among pemphigus patients indicating depression significantly affects the QoL among pemphigus patients. Arbabi *et al.* conducted a cross-sectional study to evaluate mental health status and QoL in newly diagnosed pemphigus patients. 23 patients were given the General Health Questionnaires (GHQ)-28 and Dermatology Life Quality Index (DLQI) questionnaires at a dermatological outpatient clinic. Of the 212 completed forms, the bimodal GHQ scores ranged from 0 to 26 (Mean=9.4), and Likert GHQ scores ranged from 6 to 68 (Mean=31.9). The DLQI scores ranged between 0 and 30 (Mean=13.8). A significant correlation was found between DLQI and GHQ scores, with 73.7% of patients identified as possible cases of mental disorders based on GHQ-28 bimodal scores. Upon the basis of these findings, the authors concluded that psychiatric comorbidity is highly prevalent in pemphigus patients, highlighting the need for physicians to recognize and address these issues [23].

This study has several limitations, including the single-center design, sample size, single assessment based, and ignorance of other socioeconomic factors that may be associated with depression. More research with follow-up needs to be conducted to validate our findings.

Despite these limitations, this study highlighted the heavy mental burden on pemphigus patients and the importance of screening for depression and life quality using BDI and Skindex-16 as practical tools. Given that pemphigus is a chronic and recurring condition requiring prolonged monitoring, it's crucial for clinicians to exercise patience and provide enhanced disease education to patients with mental health. This approach increases confidence and adherence among patients, ultimately contributing to more effective overall disease management and enhancing QoL.

CONCLUSION

This study highlights the high prevalence of depression among pemphigus patients, particularly in younger, female, and married individuals. The findings emphasize the need for comprehensive management strategies addressing both the physical and psychological aspects of pemphigus to improve the overall QoL for these patients.

CONFLICT OF INTEREST

None.

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