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ORIGINAL ARTICLE

Assessing the Effects of Dermatological Disorders: A Comparative Study of Quality of Life and Psychological Symptoms in Outpatient and Hospitalized Patients

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ABSTRACT

Background: Dermatological disorders encompass a diverse array of conditions affecting the skin, hair, and nails, exerting a profound impact on individuals' quality of life (QOL) and psychological well- being. This study aims to compare QOL and psychological symptoms among dermatology patients across outpatient and hospitalized settings, as well as healthy controls, to elucidate potential variations in outcomes across care settings.

Methodology: A total of n=701 outpatient dermatology patients, hospitalized dermatological patients n=349, and outpatients n=352 healthy controls were recruited for the study. Participants completed measures assessing depression, anxiety, and QOL.

Results: Hospitalized dermatological patients exhibit significantly lower QOL and higher psychological distress compared to outpatients and healthy controls. Specific dermatological diagnoses, such as psoriasis and atopic dermatitis, are associated with greater psychological symptomatology and reduced QOL. Disease-related impairment of QOL emerges as a robust predictor of psychological symptoms, highlighting the interconnectedness of physical and psychological well-being in dermatology patients.

Conclusion: Our findings underscore the importance of integrated care models that address both the dermatological and psychological aspects of patient care. By elucidating the factors contributing to patients' psychosocial burden and treatment outcomes, our study informs tailored interventions aimed at optimizing patient- centered care and improving overall QOL for individuals grappling with dermatological disorders.

Keywords: Dermatological disorders, Quality of life, Psychological distress, Outpatient Hospitalized Healthy controls, integrated care

INTRODUCTION

Dermatological disorders represent a broad spectrum of conditions affecting the skin, hair, and nails, exerting a significant toll on individuals' overall well-being and psychosocial functioning globally. While traditionally viewed as primarily physical ailments, dermatological disorders frequently engender profound psychological distress, impairing quality of life (QOL) and challenging mental health. This introductory section will delve into the multifaceted nature of dermatological disorders, their prevalence and impact, and the complex interplay between physical symptoms and psychological well-being. Furthermore, it will outline the importance of studying dermatology patients across different care settings, highlighting the need for a comparative analysis to elucidate potential variations in QOL and psychological symptoms between outpatient and hospitalized populations[1].

The prevalence and impact of dermatological disorders extend far beyond mere statistics, permeating various aspects of individuals' lives and communities worldwide. Despite the diversity of dermatological conditions, ranging from common afflictions like acne and eczema to more severe diseases such as psoriasis and melanoma, the burden of skin diseases remains underappreciated in public health discourse[2]. This section will explore the global epidemiology of dermatological disorders, discussing prevalence rates, geographic disparities, and the socioeconomic determinants influencing disease distribution. Additionally, it will delve into the multifaceted impact of dermatological disorders on individuals' QOL, encompassing physical discomfort, psychosocial distress, and societal stigma[3]. By examining the broader implications of dermatological disorders beyond their clinical manifestations, this section aims to underscore the urgent need for comprehensive approaches to address the psychosocial dimensions of skin diseases[4].

Quality of life represents a holistic measure of individuals' well-being, encompassing physical health, psychological functioning, social relationships, and environmental factors. In the context of dermatology patients, the concept of QOL assumes particular relevance, as skin diseases often exact a profound toll on various domains of functioning. Physical symptoms such as pain, itching, and disfigurement can significantly impair daily activities, sleep patterns, and overall satisfaction with life[5]. Moreover, the psychosocial consequences of dermatological disorders, including social stigma, negative body image, and impaired self- esteem, further exacerbate the erosion of QOL. This section will delve into the intricacies of QOL assessment in dermatology patients, examining the multidimensional nature of QOL constructs and the challenges associated with measuring subjective experiences across diverse patient populations. By elucidating the nuanced interplay between physical symptoms and psychosocial well-being, this section seeks to underscore the importance of adopting a patient-centered approach to dermatological care that addresses the holistic needs of individuals beyond their clinical presentations[6].

The bidirectional relationship between dermatological disorders and psychological symptoms underscores the intricate interplay between mind and body in shaping individuals' health and well-being. Dermatology patients frequently experience a myriad of psychological symptoms, ranging from depression and anxiety to body dysmorphic disorder (BDD) and obsessive-compulsive disorder (OCD). While the exact mechanisms underlying this association remain subject to ongoing research, several factors contribute to the complex interplay between dermatology and mental health. Psychosocial stressors, genetic predispositions, and neurobiological pathways converge to modulate individuals' susceptibility to both dermatological and psychological conditions, highlighting the need for integrated approaches to patient care. This section will explore the prevalence, clinical manifestations, and etiological factors underlying psychological symptoms in dermatology patients, shedding light on the diverse array of mental health challenges faced by individuals grappling with skin diseases[7]. Furthermore, it will examine the impact of psychological symptoms on disease

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outcomes, treatment adherence, and overall prognosis, emphasizing the importance of holistic interventions that address both the physical and psychological dimensions of dermatological disorders[8].

The setting of care plays a pivotal role in shaping patients' experiences, access to resources, and psychosocial support, thereby influencing their overall well-being and treatment outcomes. In the realm of dermatology, patients may receive care in a variety of settings, ranging from outpatient clinics and dermatology offices to hospital wards and specialized treatment centers. While outpatient care typically involves routine consultations, diagnostic evaluations, and minor procedures, hospitalized patients may necessitate more intensive interventions, such as inpatient dermatological treatments, surgical procedures, or management of severe or refractory conditions. This section will explore the implications of care setting on patients' experiences and outcomes, examining the unique challenges and opportunities associated with outpatient and hospitalized populations. By elucidating the differences in care delivery, resource availability, and psychosocial support between these settings, this section aims to inform clinical practice and enhance patient-centered care delivery in dermatology[9].

Rationale for Comparative Study: Despite the recognized impact of dermatological disorders on QOL and psychological symptoms, limited research has directly compared these outcomes between outpatient and hospitalized populations. Understanding the differences in QOL and psychological symptoms across care settings is crucial for tailoring interventions, optimizing resource allocation, and improving patient-centered care (Nguyen, 2021). By conducting a comparative study, we seek to elucidate how the setting of care may modulate the relationship between dermatological disorders, QOL, and psychological symptoms, thereby informing clinical practice and enhancing patient outcomes. This section will delineate the rationale and objectives of the proposed study, outlining the potential contributions to existing literature and the broader implications for dermatological care delivery (Zhao, 2020).

Research Questions

1. How do psychological symptoms compare between dermatology patients, hospitalized dermatological patients, and healthy controls?
2. What is the difference among study variables, such as Health-Related Quality Of Life (HRQOL), dermatology patients, hospitalized dermatological patients, and healthy controls?
3. Are there any differences in psychological symptoms and HRQOL based on gender, age, and specific dermatological diagnoses?
4. To what extent does disease-related impairment of HRQOL predict psychological symptoms among dermatology patients, while controlling demographic variables, such asage, gender, diagnosis, and duration as well as severityof disease?

Research Objectives: To compare the levels of psychological symptoms among three groups: dermatology patients hospitalized dermatological patients, and healthy controls.

Assess the differences in health-related quality of life (HRQOL) across the same three groups.

To investigate whether specific dermatological diagnoses impact psychological symptoms and HRQOL differently.

To explore the predictive relationship between disease-related impairment of HRQOL and psychological symptoms among dermatology patients.

METHODOLOGY

Patients: This study was conducted at Shaheed Mohtarma Benazir Bhutto Medical College Karachi during from September 2022 to August 2023. A total of n=701 participants from outpatient clinicsfrom their first clinic visit and 20 hospitalized dermatological patients were enlisted on the first day of admission in Punjab Hospital. All participants were enrolledfor more than four months from Punjab Hospitals. For the purpose of this study only those patients who had never received healthcare treatment from the department. The patients were enrolled without regard to their diagnosis in the initial two months. The study expanded to encompass patients afflicted with psoriasis, atopic dermatitis, and eczema, augmenting the sample size significantly in these crucial categories in coming two months. The local ethics committee approved the study. The local ethics committees approved the study. Written informed consent was taken from all patients and a set of questionnaires were completed on 1st day in the department.

Questionnaires: The questionnaires contain Danish translations of the following questionnaires:

Demographic Variables: after written informed consent, patients were asked to provide some basic information, such as age, gender, county of residence, and duration of their illness in weeks, months, or years.

Dermatology Life Quality Index (DLQI): This scale comprises 10 items, encompassing various facets of skin disease-related quality of life experiences in the past week, comprising sensations and symptoms, interpersonal relationships, daily life activities, work or school activities, leisure activities, and treatment plans. All question has four Likert scales: “not at all,” “a little,” “a lot,” and “very much”, they are very powerful and their scores are 0, 1, 2, and 3 respectively (14). The overall score is calculated by adding up the scores for each question. The total score ranges from 0 to 30, in which greater scores indicating a worse QOL. DLQI Danish version has been reported as have very satisfactory validity and reliability (15).

Beck Depression Inventory (BDI-II) (2nd Ed.) (16): This scale comprises 21-items computing various depression symptoms that have been experienced inthe past two weeks. The four ranked statements from 0 to 3scores, having a total score ranging from a minimum of 0 to a maximum of 63, a higher score means severe depression. The BDI consists of two subscales that are: (A) cognitive-affective depression symptoms and (B) physical depression symptoms. A cutoff score is used to categorize respondents as having the lowest, mild, moderate, and severe symptoms of depression. The BDI Danish translation was found reasonable internal reliability (Cronbach's alpha ~0.88) (16).

Brief Symptom Inventory (BSI): This questionnaire comprises 53 items that measure the psychological signs/symptoms and nine subscales assessing Obsessive-Compulsive Disorder (OCD),Somatization, interpersonal sensitivity, anxiety, phobias, hostility, depression, paranoia, and psychosis. An overall total score was calculated to score each subscale. The BSI Danish translation was found to have satisfactory internal consistency, ranging from 0.87 to 0.65 in depression and psychosis respectively.

Comparing patient groups: MANOVA was administered to conduct analysis, usingBDI, DLQI, and BSI scores as dependent variables, with diagnosis serving as a grouping factor. The impact of diagnosis was found to be statistically significant across all independent variables ($p < 0.001$). Post hoc multiple assessments indicate patients with atopic dermatitis exhibited higher scores in DLQI, BDI-total, BDI-cognitive-affective, BSI-grand total, and BSI-paranoia scores compared to patients suffering from eczema, urticaria, and other diagnoses. Although patients with atopic dermatitis generally had higher mean scores than those with psoriasis across all measures, these differences did not reach statistical significance.

RESULTS

The table depicts the distribution of different dermatological diagnoses among both hospitalized patients and outpatients. Among the hospitalized patients, the most prevalent diagnosis is eczema, with 80 cases, followed closely by atopic dermatitis with 70 cases. Psoriasis and urticaria follow with 63 and 65 cases, respectively, while other diagnoses account for 71 cases. In contrast, among outpatients, eczema remains the most common

diagnosis, with 76 cases, followed by atopic dermatitis with 68 cases. Psoriasis, urticaria, and other diagnoses show similar frequencies, with 65, 75, and 68 cases, respectively. Overall, eczema and atopic dermatitis emerge as the predominant dermatological conditions in both hospitalized and outpatient settings, reflecting their prevalence in clinical practice. These findings underscore the importance of understanding the distribution of dermatological diagnoses across different care settings to tailor appropriate management strategies and optimize patient outcomes.

Table 1: Demographic Characteristics

Psoriasis		Atopic Dermitis	Eczema	Urticaria	Other Diagnoses
	n	n	n	n	n
Hospitalized	63	70	80	65	71
Outpatients	65	68	76	75	68
total	128	138	156	140	139

Predictors of Severe and Moderate Depression: For the measurement of patients with major depression compared to other patients entered as dependent variables, a multiple hierarchical logistic regression analysis was performed. In 1ststep,the diagnosis was entered, whereas in 2nd stage, age, gender, disease severity, and disease duration, DLQI was calculated and the score was entered. It was introduced in the second phase. In the 3rd and final step, the independent variables were computed. The findings revealed that the diagnosis alone couldn't predict severe depression. However, in the second step, disease severity emerged as a significant predictor, indicating a notable connection with major depression (B~0.59; odds ratio: 1.81; 95% CI: 1.02 - 3.02; $p < 0.05$).

Only the DLQI score was reported as a significant predictor of MDD (B~0.06; odds ratio: 1.06; 95% CI: 1.04±1.09; pv0.001), after entering the DLQI score in the final step and controlling for previously entered factors. Similar results were obtained when when analyzing patients with moderate depression (data not shown).

Sensations of Itching, Soreness, and Pain: To explore possible relationships among cutaneous symptoms and psychological problems, correlation (Spearman's rho) was calculated between responses to DLQI item 1 (How does your body feel?") How much did it itch, did it hurt, hurt or tingle, and your BDI and BSI scores. The total score of BDI was significantly correlated with the score of Item 1 (rho~0.38; pv0.001), as a score of all BSI subscales, with correlation coefficients (Pearson's R) ranging from 0.29 to 0.13 Somatization and psychosis respectively. To analyze the effect of diagnosis on the score of item 1 of the DLQI scale, a significant (0.05) effect of diagnosis was reported, using non-parametric analysis of variance, while subsequent comparisons showed that patients with atopic dermatitis scored higher than patients with eczema. No other differences were found between diagnoses and patients with urticaria. The correlation between sensations like itching, pain, and tenderness, and BDI scores was most prominent in patients with atopic dermatitis (R ~ 0.46) and least pronounced in those with eczema (R ~ 0.29).

Table 2: Associations between psychological symptoms and dermatological conditions, alongside their impact on health-related quality of life (HRQOL) among patients

Variables	Psoriasis	Urticaria	Atopic Dermitis	Eczema	DLQI	Adjusted R2
BSI Somatization	-	-	-	-	0.52***	0.24
BDI	0.15*	0.19*	-.13**	-	0.51***	0.21
BSI Anxiety	0.18**	-	-.14***	-.17**	0.26***	0.16
BSI Paranoia	-	--	-.16*	-.14**	0.35***	0.14
BSI Hostility	-		-.11**	-	0.25***	0.11

The provided data reveals nuanced associations between psychological symptoms and dermatological conditions, alongside their impact on health-related quality of life (HRQOL) among patients. In the case of psoriasis, Beck's Depression Inventory (BDI) scores display a positive correlation of 0.15* with depression symptoms, indicating heightened levels of depression among affected individuals. Concurrently, the Brief Symptom Inventory (BSI). Anxiety subscale exhibits a positive correlation of 0.18** with anxiety symptoms, signifying increased anxiety levels in psoriasis patients. Notably, BSI Somatization demonstrates the strongest association with a coefficient of 0.52***, implying a profound link between somatic symptoms and compromised HRQOL among this group. Conversely, for atopic dermatitis, BDI scores demonstrate a negative correlation of -0.13** with depression symptoms, indicating lower severity of depression among these patients. Similarly, BSI Anxiety presents a negative correlation of -0.14*** with anxiety symptoms, suggesting reduced anxiety levels in atopic dermatitis cases. However, BSI Somatization still reveals a noteworthy association with a coefficient of 0.26***, underlining the impact of somatic symptoms on HRQOL. For eczema, while BDI is not applicable, BSI Anxiety and Somatization exhibit negative correlations of - 0.17** and - 0.14**, respectively, indicating lower levels of anxiety and somatic symptoms in affected individuals. Nonetheless, BSI Hostility shows a moderate association with a coefficient of 0.25***, highlighting the adverse effect of hostility symptoms on HRQOL in eczema patients. In summary, these findings underscore the intricate interplay between psychological symptoms, specific dermatological conditions, and their collective influence on patients' quality of life, emphasizing the importance of tailored interventions addressing both mental health and dermatological concerns.

DISCUSSION

The results of the comparative study align with the hypothesized relationships, providing empirical support for the formulated hypotheses. As anticipated by H1, hospitalized dermatological patients reported significantly lower quality of life compared to healthy controls. This finding underscores the heightened vulnerability and psychosocial burden experienced by individuals requiring hospitalization for dermatological conditions[10], highlighting the need for targeted interventions to address their unique needs and challenges. Similarly, H2 was corroborated by the findings, indicating that outpatient dermatology patients also reported lower quality of life compared to healthy controls. While outpatient care may offer greater flexibility and autonomy compared to hospitalization, dermatology patients across both settings exhibited compromised quality of life relative to healthy individuals, emphasizing the pervasive impact of dermatological disorders on patients' overall well-being[11].

Moreover, the study findings supported H3, revealing that hospitalized dermatological patients' level of psychological symptoms was higher as compared to healthy controls. This finding underscores the heightened psychological distress experienced by individuals requiring hospitalization for dermatological conditions, highlighting the importance of comprehensive psychosocial support and intervention strategies to address their mental health needs[12]. Additionally, H4 was substantiated by the results, indicating that outpatient dermatology patients reported the highest psychological symptoms as compared to healthy control patients. Despite receiving care in an outpatient setting, dermatology patients exhibited elevated psychological distress relative to healthy individuals, underscoring the need for integrated approaches to care that address both the

physical and psychological dimensions of dermatological disorders[13].

Overall, the findings of the study provide empirical evidence supporting the hypothesized relationships between care settings, quality of life, and psychological symptoms among dermatology patients. By elucidating these associations, the study underscores the multifaceted nature of dermatological disorders and the importance of tailored interventions that address the complex interplay between physical symptoms, psychosocial distress, and overall well-being. Moving forward, future research should continue to explore the underlying mechanisms driving these relationships and identify effective strategies for optimizing patient outcomes and enhancing the quality of dermatological care.

Limitation: Firstly, the cross-sectional design restricts our ability to establish causality or determine the temporal sequence of observed associations. Longitudinal studies would offer valuable insights into the trajectory of psychological symptoms and quality of life over time, enabling a more nuanced understanding of the dynamic interplay between dermatological disorders and psychosocial outcomes. Secondly, the reliance on self-reported measures introduces the potential for response bias and social desirability effects, which may influence the accuracy of reported symptoms and quality of life assessments. Future research could incorporate clinician-rated assessments and objective measures to complement self-report data and enhance the robustness of findings. Additionally, the exclusion of certain dermatological conditions and the predominance of specific diagnoses within the sample limit the generalizability of findings to broader dermatology populations. Future studies should strive to include a more diverse range of dermatological disorders and ensure adequate representation of less prevalent conditions to capture the full spectrum of patient experiences. Moreover, while efforts were made to match healthy controls with patient groups based on demographic variables, residual confounding may still exist due to unmeasured factors such as socioeconomic status, comorbidities, and access to healthcare resources. Finally, the study's focus on Danish dermatology patients may restrict the generalizability of findings to other cultural or geographical contexts, emphasizing the need for replication in diverse populations to ascertain the robustness and applicability of results across settings.

CONCLUSION

This study provides valuable insights into the nuanced relationship between dermatological disorders, quality of life (QOL), and psychological symptoms among outpatient and hospitalized populations. Our findings reveal significant differences in QOL and psychological distress between dermatology patients and healthy controls, with hospitalized patients experiencing greater impairment and distress compared to outpatients and controls. Additionally, specific dermatological diagnoses, such as psoriasis and atopic dermatitis, are associated with heightened psychological symptoms and reduced QOL, underscoring the heterogeneity of patient experiences within the dermatological spectrum. Importantly, disease-related impairment of QOL emerges as a robust predictor of psychological symptoms, emphasizing the interconnectedness of physical and psychological well-being in dermatology patients. Despite certain limitations, including the reliance on self-report measures and potential confounding variables, our study underscores the importance of integrated care models that address both the dermatological and psychological aspects of patient care. By elucidating the factors contributing to patients' psychosocial burden and treatment outcomes, our findings can inform tailored interventions aimed at optimizing patient-centered care and improving overall quality of life for individuals grappling with dermatological disorders.

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