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Original Research Article

Quality of Life and Psychological Distress among Vitiligo Patients Attending Public Dermatology Clinics in Sana'a, Yemen

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Abstract

Introduction: Vitiligo is a chronic depigmenting disorder associated with a significant psychosocial burden. Beyond cosmetic disfigurement, vitiligo may negatively influence quality of life (QoL), treatment adherence, and psychological well-being, particularly in low-resource settings such as Yemen.

Objectives: This study aimed to assess the quality of life and psychological distress among patients with vitiligo attending public dermatology clinics in Sana'a, Yemen.

Methods: A hospital-based cross-sectional study was conducted between November 2023 and May 2024 in three public hospitals in Sana'a. Patients with vitiligo aged 13-40 years were consecutively recruited. Data were collected using a structured questionnaire, the Arabic version of the Dermatology Life Quality Index (DLQI), and the Depression, Anxiety, and Stress Scale (DASS-21). Statistical analysis was performed using SPSS version 26.

Results: A total of 118 patients participated. Quality of life impairment (DLQI ≥2) was observed in 91.5% of patients, with a mean DLQI score of 8.35 ± 6.23. Depression, anxiety, and stress were reported in 33.1%, 33.9%, and 38.1% of patients, respectively. Marital status and education level were significantly associated with QoL impairment.

Conclusion: Vitiligo imposes a substantial psychosocial burden on Yemeni patients. Integrating psychological assessment and support into dermatological care is essential to improve patient outcomes.

Keywords: Vitiligo, Quality of Life, Psychological Distress, DLQI, Yemen.

Introduction

Vitiligo is a chronic autoimmune depigmenting disorder characterized by well-defined white macules and patches due to loss of functional melanocytes. Although vitiligo is not life-threatening, it can substantially impair patients' quality of life, particularly in populations with darker skin phototypes suchas those in the Middle East [1]. Global and regional data suggest a prevalence of about 0.4–1%, with West Asia, including parts of the Arab world, among the regions with relatively higher reported rates, indicating a considerable yet often under-recognized burden [2, 3].

Beyond the cutaneous manifestations, vitiligo carries a marked psychosocial and psychological burden, as affected individuals commonly experience stigma, misconceptions about contagion or "evil eye", negative social reactions, and difficulties in education, employment, and marriage, which can lead to embarrassment, low self-esteem, social withdrawal, and emotional distress, including depression, anxiety, and stress [4].

These psychosocial consequences may reduce adherence to long-term topical therapies, phototherapy, or other regimens that require sustained commitment before improvement is visible, thereby potentially worsening disease control and prolonging the course of illness [5].

International and regional studies using generic and disease-specific instruments, such as the DLQI and vitiligo-focused scales, have consistently shown that higher disease severity, involvement of exposed areas in the face and hands, extensive body surface area, and darker skin types are associated with greater impairment in health-related quality of life and increased psychological distress, particularly among women and young adults in conservative societies [6, 7].

However, in Yemen, available research has largely concentrated on the clinical and epidemiological aspects of vitiligo, with scarce information on quality of life, depression, anxiety, and stress, and limited exploration of how socio-demographic factors shape these outcomes, which constrains the development of culturally sensitive psychodermatology services and targeted interventions [8].

Therefore, this study aims to assess the impact of vitiligo on health-related quality of life using the DLQI and to determine the severity of depression, anxiety, and stress among patients attending public dermatology clinics in Sana'a, Yemen.

Methods

Study Design and Setting:

A hospital-based cross-sectional study was conducted from November 2023 to May 2024 in three public dermatology outpatient clinics in Sana'a: Republican Teaching Hospital Authority, Al-Thawra General Hospital, and Al-Kuwait University Hospital.

Participants and Sampling:

All patients diagnosed with vitiligo aged 13-40 years who attended the clinics during the study period were consecutively approached for participation. Patients who declined participation or had incomplete questionnaires were excluded, resulting in a total of 118 patients who completed the study.

Data Collection Tools:

Data were collected using a structured socio-demographic and clinical questionnaire. Quality of life was assessed using the Dermatology Life Quality Index (DLQI), a validated 10-item questionnaire. Psychological distress was measured using the Arabic version of the Depression Anxiety Stress Scale (DASS-21). Both instruments have been previously validated in Arabic-speaking populations.

Statistical Analysis:

Data were analyzed using SPSS version 26. Descriptive statistics were used to summarize variables. Chi-square tests were applied to examine associations between categorical variables. Statistical significance was set at $p < 0.05$.

Ethical Considerations:

Ethical approval was obtained from the Faculty of Medicine, 21 September University. Written informed consent was obtained from all participants.

Results

A total of 118 patients with vitiligo were enrolled in the study. Socio-demographic and clinical characteristics are summarized in **Table 1**. The study population was predominantly young, with the highest proportion in the 14–24-year age group. Females were slightly more represented than males. More than half of the participants were married, and secondary education was the most frequently reported educational level. Localized (partial) vitiligo was the most common clinical pattern, and approximately one quarter of patients reported a positive family history of vitiligo.

Table1: Socio-Demographic and Clinical Characteristics of Vitiligo Patients

Variable	Category	Frequency n= 118	%
Sex	Male	58	49.2
	Female	60	50.8
Age	13 years	5	4.2
	14–24 years	45	38.1
	25–34 years	25	21.2
	>34 years	43	36.4
Marital status	Single	49	41.5
	Married	65	55.1
	Divorced	3	2.5
	Widowed	1	0.8
Education	Primary school	22	18.6
	Middle school	28	23.7
	High school	35	29.7
	University	21	17.8
	Other	12	10.2
Occupation	Student	39	33.1
	Employee	20	16.9
	Other	59	50
Family history	No	89	75.4
	Yes	29	24.6
Chronic disease	No	86	72.9
	Yes	32	27.1
Duration of disease	<1 year	15	12.7
	1–3 years	42	35.6
	4–6 years	19	16.1
	>6 years	42	35.6
Other skin diseases	No	95	80.5
	Yes	23	19.5
Disease distribution	Localized	98	83.1
	Generalized	20	16.9

Quality of life was assessed using the Dermatology Life Quality Index (DLQI). The mean DLQI score was 8.36 ± 6.23, indicating a moderate overall impact on patients' quality of life. As shown in Table 2, 108 patients (91.5%) had DLQI scores of 2 or higher, indicating some degree of quality-of-life impairment. Most patients reported mild to moderate impairment, while a smaller proportion experienced severe or very severe effects. The distribution of DLQI scores demonstrated considerable variability, suggesting heterogeneity in individual perceptions of disease burden.

Table 2: Distribution and Descriptive Statistics of DLQI

Measure	Value
Affected (DLQI ≥2)	108 (91.5%)
Not affected (DLQI 0–1)	10 (8.5%)
Mean ± SD	8.35 ± 6.23
Range	2–30

Psychological status was evaluated using the Depression, Anxiety, and Stress Scale (DASS-21). Due to incomplete responses in some questionnaires, the number of patients analyzed for depression, anxiety, and stress was slightly lower than the total sample size; only participants with complete responses for each subscale were included in the respective analyses.

Table 3: Prevalence of psychological symptoms according to DASS-21

Symptom	Yes n (%)	No n (%)
Depression	39 (33.1)	79 (66.9)
Anxiety	40 (33.9)	78 (66.1)
Stress	45 (38.1)	73 (61.9)
Total DASS Score	41 (35.0)	77 (65.0)

Depressive symptoms were identified in 39 patients (33.1%), anxiety symptoms in 40 patients (33.9%), and stress symptoms in 45 patients (38.1%) (Table 3).

Most affected patients fell within the mild to moderate severity categories, while fewer participants reported symptoms of severe or extremely severe severity. These findings indicate that psychological distress is common among vitiligo patients, even in the absence of life-threatening disease.

Associations between socio-demographic variables and quality of life and psychological outcomes are presented in Table 4.

A statistically significant association was observed between DLQI severity and both marital status and educational level.

Table 4: Association between Socio-Demographic Variables and Severity of DLQI, Depression, and Anxiety Among Participants

Demographic Variable	DLQI Severity (N=108)	p-value	Depression Severity (N=39)	p-value	Anxiety Severity (N=40)	p-value
Age Group	8.323	0.502	7.295	0.063	5.54	0.063
Sex	1.64	0.65	1.242	0.27	6.22	**0.013***
Marital Status	20.233	**0.017***	4.744	**0.029***	5.35	**0.020***
Education Level	25.576	**0.012***	2.765	0.598	2.15	0.708
Occupation	4.223	0.647	6.66	**0.040***	5.93	0.052

*Statistically significant at $p < 0.05$. Unmarried and less-educated patients reported greater quality-of-life impairment. Depression severity was significantly associated with marital status and occupation, whereas anxiety severity showed significant associations with sex, marital status, and occupation. No significant associations were found between age group and DLQI, depression, anxiety, or stress severity.

Discussion

This study highlights the substantial psychosocial burden of vitiligo among patients attending public dermatology clinics in Sana'a, Yemen. Vitiligo was most common among young adults aged 14–24 years, consistent with previous regional studies [8-10]. This age distribution may reflect heightened psychosocial sensitivity during adolescence and early adulthood, when concerns related to physical appearance, social acceptance, and future marital prospects are particularly pronounced, potentially amplifying the psychological impact of the disease.

A slight female predominance was observed, in agreement with earlier studies from the region and other settings [7-11]. Although vitiligo affects both sexes, women may be more likely to seek medical care due to greater cosmetic concerns and stronger sociocultural pressures regarding appearance, especially in conservative societies.

Similarly, the predominance of married individuals in the study population is consistent with previous reports [10, 12], and may reflect the broader age distribution of clinic attendees rather than a true difference in disease occurrence. Nevertheless, marital status emerged as an important determinant of quality of life and psychological outcomes, underscoring the influence of social and relational factors on disease burden.

Educational level and employment status were significantly associated with quality of life and mental health outcomes. Patients with lower educational attainment and those who were unemployed reported greater impairment, findings that are consistent with earlier studies [9, 10, 12].

Limited education may restrict access to health information and effective coping strategies, while unemployment may increase financial stress and social isolation, thereby intensifying psychological distress in individuals with visible chronic skin diseases [10, 12].

A positive family history of vitiligo was reported in 24.6% of patients, comparable to previous findings [8, 12].

The mean DLQI score of 8.36 ± 6.23 indicated a moderate impact on quality of life, comparable to earlier regional reports [8], higher than those reported in some studies [13, 14], but lower than in other studies [15, 16]. Partial vitiligo was the most common clinical type (83%), in line with previous findings [17].

Overall, quality of life was affected in 91.5% of patients, consistent with reports from different populations [17-21]. Symptoms of depression, anxiety, and stress were prevalent, affecting approximately one-third of patients, which aligns with previous studies demonstrating a strong association between vitiligo and psychological distress [4, 22-24].

Significant associations were identified between educational level and marital status with quality of life, as well as between marital status and occupation with depression and anxiety. These findings are consistent with earlier reports highlighting the role of socioeconomic and social factors in shaping psychosocial outcomes among vitiligo patients [18, 25], although some studies have reported differing results [26].

Conclusion

Vitiligo is the most common form of skin depigmentation, which significantly affects patients' quality of life. Partial vitiligo was the most observed type. The mean DLQI score was 8.36 ± 6.23, with 91.5% of patients reporting an impact, mostly small to moderate. One-third of patients experienced depression, anxiety, or stress, predominantly at moderate levels. Significant associations were found between education and marital status with quality of life, while sex, age, and work type showed no effect. Depression correlated with marital status and occupation, and anxiety with sex, marital status, and occupation, but stress showed no significant associations.

We recommend integrating modern medical and psychological approaches, emphasizing the psychosocial burden of vitiligo, and promoting awareness that the disease is non-contagious and not a stigma. Management should consider educational and social factors, and further research is needed to address health and economic burdens on patients, families, and the healthcare system.

Strengths and Limitations

The strengths of this study include the use of validated Arabic versions of the DLQI and DASS instruments, recruitment from multiple public hospitals, and addressing a significant evidence gap regarding the psychosocial impact of vitiligo in Yemen. On the other hand, the study's cross-sectional, hospital-based design limits its causal inference and generalizability. In addition, reliance on self-reported measures may introduce reporting bias, and disease severity was not assessed using objective clinical scoring systems.

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