

## **Assessment of Quality of Life among Vitiligo Patients Attending Dermatology Clinics in Public Hospitals in Sana'a**

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### **تقييم جودة الحياة لدى مرضى البهاق المراجعين لعيادات الجلدية في المستشفيات العامة بمدينة صنعاء**

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**Abstract: Introduction:** Vitiligo is a chronic skin disorder characterized by depigmented patches with significant psychosocial impact. Patients often experience stigma, anxiety, and reduced quality of life. **Objectives:** This study aimed to evaluate the impact of vitiligo on quality of life among patients attending dermatology outpatient clinics in public hospitals in Sana'a. **Methods:** A prospective cross-sectional study was conducted among individuals diagnosed with vitiligo at three dermatology clinics in public hospitals (Republican Teaching Hospital Authority, Al-Thwara General Hospital, and a third referral hospital). Eligible patients were enrolled and assessed using a structured data sheet, the Arabic version of the Dermatology Life Quality Index (DLQI), and the DASS-8 questionnaire. Data were analyzed using SPSS version 26. **Results:** A total of 118 respondents participated (50.8% females, 49.2% males). Quality of life was affected in 91.5% of patients, ranging from a slight to an extremely large impact. Depression was reported in 33.1% of patients, anxiety in 33.9%, and stress in 38.1%, with most cases falling in the moderate to severe categories. **Conclusion:** Vitiligo moderately affects the quality of life of Yemeni patients. Addressing both medical and psychological aspects is essential, supporting the establishment of psychodermatology clinics in referral hospitals to improve outcomes.

**Keywords: Vitiligo, Quality of Life, Psychosocial, Yemen.**

**المخلص: المقدمة:** البهاق اضطراب جلدي مزمن يتميز بظهور بقع فاقدة للصبغة، وله تأثيرات نفسية واجتماعية كبيرة. غالبًا ما يعاني المرضى من وصمة اجتماعية، قلق، وانخفاض في جودة الحياة. **الأهداف:** هدفت هذه الدراسة إلى تقييم أثر البهاق على جودة الحياة لدى المرضى المراجعين لعيادات الجلدية الخارجية في المستشفيات العامة بمدينة صنعاء. **المنهجية:** أجريت دراسة مستقبلية مقطعية شملت جميع الأفراد المشخصين بالبهاق في ثلاث عيادات جلدية بالمستشفيات العامة (هيئة مستشفى الجمهوري التعليمي، مستشفى الثورة العام، ومستشفى إحالة ثالث). تم إشراك المرضى المستوفين لمعايير الإدراج، وجمعت البيانات باستخدام استمارة مخصصة، النسخة العربية من مقياس جودة الحياة للأمراض الجلدية (DLQI)، واستبيان DASS-8. جرى تحليل البيانات باستخدام برنامج SPSS الإصدار 26. **النتائج:** بلغ عدد المشاركين 118 مريضاً (50,8% إناث، 49,2% ذكور). أظهرت النتائج أن جودة الحياة تأثرت لدى 91,5% من المرضى بدرجات تراوحت بين تأثير طفيف وتأثير بالغ جداً. كما تبين أن 33,1% من المرضى يعانون من الاكتئاب، 33,9% من القلق، و38,1% من الضغط النفسي، وكانت معظم الحالات ضمن المستويات المتوسطة إلى الشديدة. **الاستنتاج:** أظهرت الدراسة أن البهاق يؤثر بشكل معتدل على جودة حياة المرضى اليمنيين. لذا ينبغي أن تُوجّه التدابير العلاجية نحو الجوانب الطبية والنفسية معاً، مما يدعم إنشاء عيادات متخصصة في الطب النفسي-الجلدي في المستشفيات المرجعية لتحسين النتائج العلاجية وجودة الحياة.

**الكلمات المفتاحية: البهاق، جودة الحياة، نفسي اجتماعي، اليمن.**

## **Introduction**

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**V**itiligo is a chronic depigment disorder that can markedly impair patients' quality of life (QoL) despite being medically under-recognized in countries like Yemen, where social awareness and psychosocial services are limited. Patients often face stigma, misconceptions about contagion or "evil eye," and negative comments, which intensify feelings of shame and social withdrawal [1, 2].

Economic hardship and restricted access to dermatological care in many Yemeni regions may delay diagnosis and limit the use of newer therapies, reinforcing a sense of hopelessness and chronic burden. Regional evidence from the Middle East shows that vitiligo patients frequently report embarrassment, avoidance of social gatherings, and difficulties in marriage prospects, especially women and young adults, which is likely similar or even more pronounced in the Yemeni sociocultural context [2, 3].

Assessment of QoL among Yemeni vitiligo patients would reasonably rely on validated dermatology instruments such as the Dermatology Life Quality Index (DLQI) and vitiligo-specific scales like VitiQoL, which have been widely used in nearby Middle Eastern and North African populations [4, 5].

Studies from the region indicate that darker skin phototypes, facial and hand involvement, and active or extensive disease are strongly associated with worse DLQI scores, suggesting that Yemeni patients with visible lesions, particularly women of marriageable age, are at high psychosocial risk [3, 6].

Global and regional meta-analyses estimate vitiligo prevalence around 0.4–1%, with West Asia (including parts of the Arab world) among the areas with higher reported rates, implying a substantial but under-recognized burden in Yemen [2, 7].

In such a setting, integrating QoL assessment into routine dermatology visits, offering brief psychological support, and providing community education to dispel myths about vitiligo are crucial steps to reduce stigma and improve overall well-being [3].

Our study aims to evaluate and detect the incidence of the impact of vitiligo on quality of life.

## **Methods**

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

All vitiligo patients aged 13–40 years who met the inclusion criteria were recruited through purposeful sampling. A total of 118 patients participated, all providing informed consent. Demographic and clinical data were collected using a structured sheet, while quality of life and psychological impact were assessed using the Arabic versions of the Dermatology Life Quality Index (DLQI) and DASS-8 questionnaires.

Data entry was performed in Microsoft Excel for cleaning and coding, then transferred to SPSS version 26 for statistical analysis. Descriptive statistics were used for demographic variables, while Chi-square and

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ANOVA tests assessed associations between patient characteristics and QoL.

Ethical approval was obtained from the Faculty of Medicine, University of 21 September, and permissions were secured from hospital authorities.

## Results

Out of 118 participants, the socio-demographic characteristics of vitiligo patients revealed a nearly equal gender distribution (49.2% male, 50.8% female), with a predominance of young adults aged 14–24

years (38.1%) and individuals over 34 years (36.4%). The majority of patients were married (55.1%), while a substantial proportion were single (41.5%). Educational attainment varied, with most participants having completed high school (29.7%) or middle school (23.7%), and 17.8% holding university degrees. In terms of occupation, half of the cohort were non-working (50.0%), followed by students (33.1%) and employees (16.9%). These demographic insights provide a foundational context for interpreting the quality of life and psychological outcomes observed in the study population.

Table 1: Socio-Demographic Characteristics of the Study Participants

Variable	Category	Frequency <i>n</i> = 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

Clinical profiling of the same cohort revealed that the majority had no family history of vitiligo (75.4%) and no chronic conditions, diabetes mellitus (25%), hypertension (21.8%), and other systemic

illnesses (50%) were commonly reported. Regarding disease duration, most patients had either 1–3 years (35.6%) or more than 6 years (35.6%) of illness, indicating a chronic course. Coexisting skin diseases were present in 19.5% of cases, predominantly non-psoriatic.

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Disease distribution was primarily localized (83.1%), with generalized vitiligo observed in 16.9% of patients. These findings provide essential clinical context for interpreting the dermatological and psychological burden associated with vitiligo.

**Table 2: Clinical Characteristics of Vitiligo Patients**

<i>Variable</i>	<i>Category</i>	<i>Frequency</i> <i>n= 118</i>	<i>%</i>
<i>Family history</i>	No	89	75.4
	Yes	29	24.6
<i>Chronic disease</i>	No	86	72.9
	Yes	32	27.1
<i>Duration of disease</i>	<1 year	15	12.7
	1–3 years	42	35.6
	4–6 years	19	16.1
	>6 years	42	35.6
<i>Other skin disease</i>	No	95	80.5
	Yes	23	19.5
<i>Disease distribution</i>	Localized	98	83.1
	Generalized	20	16.9

In assessing the impact of vitiligo on patients' quality of life, the Dermatology Life Quality Index (DLQI) revealed that 91.5% of participants were affected (DLQI  $\geq 2$ ), while only 8.5% reported no impact (DLQI 0–1). The mean DLQI score was  $8.35 \pm 6.23$ , with scores ranging from 2 to 30, indicating a wide variability in perceived burden. These results suggest that vitiligo significantly impairs quality of life in the majority of patients, with many experiencing moderate to severe psychosocial effects.

**Table 3: Distribution and Descriptive Statistics of DLQI**

<i>Measure</i>	<i>Value</i>
<i>Affected (DLQI <math>\geq 2</math>)</i>	108 (91.5%)
<i>Not affected (DLQI 0–1)</i>	10 (8.5%)
<i>Mean <math>\pm</math> SD</i>	8.35 $\pm$ 6.23
<i>Range</i>	2–30

Psychological assessment using the DASS-21 scale revealed that a considerable proportion of vitiligo patients experienced mental health symptoms. Depression was present in 33.1% of participants, anxiety in 33.9%, and stress in 38.1%, while the overall psychological burden (total DASS score above cutoff) was observed in 35.0% of the cohort. These findings highlight that more than one-third of patients suffer from clinically relevant psychological distress, underscoring the significant psychosocial impact of vitiligo and the importance of integrating psychological support into dermatological care.

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**Table 4: Prevalence of psychological symptoms according to DASS-21**

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

To further explore the determinants of quality-of-life impairment, the association between socio-demographic characteristics and DLQI severity was examined in 108 patients. Statistically significant relationships

were found with marital status ( $\chi^2 = 20.233$ ,  $p = 0.017$ ) and education level ( $\chi^2 = 25.576$ ,  $p = 0.012$ ), indicating that individuals who were single or had lower educational attainment tended to report greater impairment in quality of life. In contrast, no significant associations were found with age group ( $p = 0.502$ ), sex ( $p = 0.650$ ), or occupational status ( $p = 0.647$ ). These findings suggest that social and educational factors may play a more influential role in shaping the psychosocial burden of vitiligo than biological or employment-related variables.

**Table 5: . Association between Socio-Demographic Characteristics and DLQI Severity (N=108)**

<i>Variable</i>	<i>Chi-square (<math>\chi^2</math>)</i>	<i>p-value</i>
<b>Age group</b>	8.323	0.502
<b>Sex</b>	1.640	0.650
<b>Marital status</b>	20.233	<b>0.017*</b>
<b>Education level</b>	25.576	<b>0.012*</b>
<b>Occupation</b>	4.223	0.647

\*Statistically significant at  $p < 0.05$ .

The relationship between socio-demographic characteristics and depression severity was also investigated among 39 patients. Statistically significant associations were observed with marital status ( $\chi^2 = 4.744$ ,  $p = 0.029$ ) and occupation ( $\chi^2 = 6.660$ ,  $p = 0.040$ ), indicating that unmarried individuals and students were more likely to report severe depressive symptoms. Age showed a

borderline trend toward significance ( $p = 0.063$ ), while sex ( $p = 0.270$ ) and education level ( $p = 0.598$ ) were not significantly associated with depression severity. These findings suggest that social context and employment status may influence psychological vulnerability in this patient population.

**Table 6: Association between Socio-Demographic Characteristics and Depression Severity (N = 39)**

<i>Variable</i>	<i>Chi-square (<math>\chi^2</math>)</i>	<i>p-value</i>
<b>Age group</b>	7.295	0.063
<b>Sex</b>	1.242	0.270
<b>Marital status</b>	4.744	<b>0.029*</b>
<b>Education level</b>	2.765	0.598
<b>Occupation</b>	6.660	<b>0.040*</b>

\*Statistically significant at  $p < 0.05$ .

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Similarly, the association between socio-demographic characteristics and anxiety severity was explored among 40 patients. Statistically significant associations were found with sex ( $\chi^2 = 6.220$ ,  $p = 0.013$ ) and marital status ( $\chi^2 = 5.350$ ,  $p = 0.020$ ), indicating that female and unmarried patients were more likely to experience heightened

anxiety symptoms. Age group showed a borderline trend toward significance ( $p = 0.063$ ), while education level ( $p = 0.708$ ) and occupation ( $p = 0.052$ ) did not reach statistical significance. These findings suggest that gender and social status may be key determinants of anxiety vulnerability in this population.

Table 7: Association between Socio-Demographic Characteristics and Anxiety Severity (N = 40)

Variable	Chi-square ( $\chi^2$ )	p-value
Age group	5.540	0.063
Sex	6.220	0.013*
Marital status	5.350	0.020*
Education level	2.150	0.708
Occupation	5.930	0.052

\*Statistically significant at  $p < 0.05$ .

## Discussion

In this study, vitiligo was more common among patients aged 14-24 years (38.1%), consistent with [8-10], though differing from [11], who reported higher prevalence in ages 30-39.

Females (50.8%) were slightly more affected than males, aligning with (58%) [12], (66.5% females) [9], (66.12%) [10], (60.1%) [5], and (53.9%) [8]. Married patients formed 55.1%, like [10, 11].

Most patients had secondary education (29.7%), consistent with [10]. Non-workers comprised 50%, differing from [11], but aligning with [8, 10]. Disease duration was 1-3 years in 35.6%, consistent with [10, 11]. Family history was reported in 24.6%, similar to [9, 11].

Mean DLQI score was  $8.36 \pm 6.23$ , comparable to [9], and higher than [13, 14], but lower than [15, 16]. Partial vitiligo was most common (83%), consistent with [17].

Quality of life was affected in 91.5% of patients, similar to [1, 17-20]. Depression

(33.1%), anxiety (33.9%), and stress (38.1%) were prevalent, consistent with [21-24].

Significant associations were found between education and marital status with QoL, and between marital status/occupation with depression and anxiety, consistent with [18, 25], but differing from [26, 27].

## Conclusion and Recommendations

Vitiligo is the most common form of skin depigmentation and significantly affects patients' quality of life. Partial vitiligo was the most frequent type observed. The mean DLQI score was  $8.36 \pm 6.23$ , 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

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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.

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