

Original article

Mental Health in Visible Skin Disorders: Assessing Anxiety and Depression in vitiligo and alopecia areata patients compared to Healthy Peers

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Vitiligo, Alopecia Areata, Anxiety & Depression.

ABSTRACT

Alopecia areata is characterized by non-scarring scalp complete terminal hair loss, and vitiligo is characterized by skin pigment loss. Alopecia and vitiligo are distinct, heterogeneous, and complex diseases, in most cases resistance to treatment. The current study aimed to evaluate and compare the Anxiety and Depression levels within patients who were diagnosed with Vitiligo and Alopecia-areata against the control group of healthy individuals. A total of 150 participants were recruited: 50 with vitiligo, 50 with alopecia areata, and 50 healthy controls. Patients who visited the outpatient dermatology clinic at Medical Centre at Al-Bayda City from January to December 2023 have been included in this Study. The Hospital Anxiety and Depression Scale (HADS) was used to evaluate "Depression and Anxiety". The findings showed that elevated anxiety and despair scores in both patient groups relative to the healthy control group ($p < 0.001$). However, current results showed that no significant difference was observed between the vitiligo and alopecia areata groups ($p > 0.05$). These findings highlight the psychological burden associated with chronic dermatological conditions and emphasize the need for integrated mental health support in dermatological care.

Introduction

Vitiligo (white patches) and alopecia areata (patchy hair loss) are chronic dermatological conditions characterized by visible changes in skin pigmentation and hair loss, respectively [1]. Don't just affect appearance- they deeply impact mental health, these conditions causing psychological distress, including anxiety and depression, due to their Impact on self-esteem, body image, and social interactions [2]. These visible conditions make patients anxious and depressed, especially in our Libyan community, where skin and hair are closely tied to identity. Previous studies have explored the psychological effects of these conditions individually. Previous research shows that these conditions affect 0.5-2% of the general population, with significant variations across ethnic groups [3]. 60% of alopecia patients report significant anxiety about their changing appearance [4]. Vitiligo patients show 2-3x higher depression rates than the general population [5]. Both groups frequently experience workplace discrimination and social isolation [6]. In review analysis found that the psychosocial effects of these chronic cutaneous conditions on children and their families were highly significant, and it is important to recognize the best interventions that may minimize their long-term consequences [7].

Moreover, vitiligo and alopecia areata cause a disfigurement of the self-image of affected patients. Both conditions are marked by increased appearance of lesions and deformity, and because they are chronic, there are fewer treatment choices available. These factors have a detrimental effect on patients' mental health and place them among psychosomatic skin disorders [8,9]. It has already been discovered that individuals with vitiligo and alopecia areata are more likely to experience anxiety and sadness [10-12]. Another study showed that the level of anxiety and depression among alopecia areata patients was compared to that of vitiligo patients [13]. However, several researchers discovered that there are no statistically significant differences in anxiety and sadness between vitiligo and alopecia areata [14,15].

Generally, both skin conditions cause significant mental distress, but they may affect patients differently. Understanding these differences may help to provide better, more targeted care. Therefore, the present study aims to fill these gaps by comparing anxiety and depression levels in patients with vitiligo and alopecia areata against a control group of healthy individuals.

Methods

This study was approved by the Libyan Authority for Scientific Research - General Commission for Bioethics and Biosafety - Biomedical Ethics Committee of Al-Bayda Campus, University of Omar Al-Mukhtar – Libya.

(NBC: 007.H. 25. 45.) From January to December 2023, our team at Al Bida Medical Centre's Dermatology Department conducted a study examining the psychological impact of two common skin conditions. The study worked with 150 participants- 50 vitiligo patients, 50 alopecia areata patients, and 50 healthy volunteers- to understand how these visible conditions affect mental health.

Study Design

Case-control Study Design with 150 participants included in three separate groups: Vitiligo Group: 50 patients diagnosed with vitiligo. Alopecia Areata Group: 50 patients diagnosed with alopecia areata. Control Group: 50 healthy individuals matched for age, gender, and socioeconomic status.

Inclusion and exclusion criteria

Inclusion criteria were participants aged 18–65 years with a confirmed diagnosis of vitiligo or alopecia areata and willingness to participate. We excluded individuals with a history of psychiatric disorders or those using psychotropic medications.

Data collection

The Hospital Anxiety and Depression Scale (HADS) was used to measure anxiety and depression levels. Participants completed the HADS and provided demographic information, including age, gender, disease duration, and severity.

Statistical analysis

using SPSS version 25 to analyze data. Descriptive statistics, independent t-tests, one-way ANOVA, and Pearson/Spearman correlations were employed. A p-value of less than 0.05 was considered statistically significant.

Results

Demographic and clinical characteristics

The mean age of participants was 34.5 ± 9.7 years, with no significant differences between groups ($p > 0.05$). The mean disease duration was 8.5 ± 4.2 years for vitiligo and 7.8 ± 3.9 years for alopecia areata (Table 1).

Table 1. Demographic and Clinical Characteristics

Variable	Vitiligo (n=50)	Alopecia Areata (n=50)	Healthy Controls (n=50)	P-value
Age (years), Mean \pm SD	35.2 ± 10.5	33.8 ± 9.7	34.5 ± 8.9	0.72
Gender, n (%)				0.45
Male	22 (44%)	20 (40%)	25 (50%)	
Female	28 (56%)	30 (60%)	25 (50%)	
Disease Duration (years), Mean \pm SD	8.5 ± 4.2	7.8 ± 3.9	-	0.38

(Table 2) showed that, in comparison to healthy controls, patients with vitiligo and alopecia areata had noticeably higher anxiety and sadness scores ($p < 0.001$). Meanwhile, no significant difference was found between the vitiligo and alopecia areata groups ($p > 0.05$). In Vitiligo group: Anxiety = 10.5 ± 3.2 ; Depression = 9.8 ± 2.9 . In Alopecia Areata Group: Anxiety = 11.2 ± 3.5 ; Depression = 10.1 ± 3.1 . Comparison to Control Group: Anxiety = 5.3 ± 2.1 ; Depression = 4.7 ± 1.8 .

Table 2: Anxiety and Depression Scores

Group	Anxiety Score (Mean \pm SD)	Depression Score (Mean \pm SD)	p-value
Vitiligo Patients	10.5 ± 3.2	9.8 ± 2.9	<0.001
Alopecia Patients	11.2 ± 3.5	10.1 ± 3.1	<0.001
Healthy Controls	5.3 ± 2.1	4.7 ± 1.8	-

Results in (Table 3) show that patients with vitiligo had significantly higher anxiety and depression scores compared to healthy controls ($p < 0.001$). The effect sizes (Cohen's d) were large, indicating a substantial difference in psychological distress between the two groups. Meanwhile, in (Table 4): Patients with alopecia areata also had significantly higher anxiety and depression scores compared to healthy controls ($p < 0.001$).

Table 3: Vitiligo vs. Healthy Controls

Variable	Vitiligo (n=50)	Healthy Controls (n=50)	p-value	Effect Size (Cohen's d)
Anxiety Score, Mean \pm SD	10.5 \pm 3.2	5.3 \pm 2.1	<0.001	1.85
Depression Score, Mean \pm SD	9.8 \pm 2.9	4.7 \pm 1.8	<0.001	1.92

Table 4: Alopecia Areata vs. Healthy Controls

Variable	Alopecia Areata (n=50)	Healthy Controls (n=50)	p-value	Effect Size (Cohen's d)
Anxiety Score, Mean \pm SD	11.2 \pm 3.5	5.3 \pm 2.1	<0.001	1.92
Depression Score, Mean \pm SD	10.1 \pm 3.1	4.7 \pm 1.8	<0.001	1.98

The effect sizes were similarly large, suggesting a comparable level of psychological distress in alopecia areata patients as in vitiligo patients. In terms of comparison between both despises there was no significant difference in anxiety or depression scores between vitiligo and alopecia areata patients ($p > 0.05$). The effect sizes were small, indicating minimal differences in psychological distress between the two patient groups, as shown in (Table 5).

Table 5: Vitiligo vs. Alopecia Areata

Variable	Vitiligo (n=50)	Alopecia Areata (n=50)	p-value	Effect Size (Cohen's d)
Anxiety Score, Mean \pm SD	10.5 \pm 3.2	11.2 \pm 3.5	0.32	0.21
Depression Score, Mean \pm SD	9.8 \pm 2.9	10.1 \pm 3.1	0.45	0.18

Discussion

The significantly higher anxiety and depression scores in vitiligo patients highlight the psychological burden of the condition. This is consistent with previous studies showing that visible skin conditions like vitiligo are associated with social stigma and reduced quality of life [16]. Similarly, alopecia areata patients exhibited elevated anxiety and depression scores, reflecting the emotional impact of hair loss. Alopecia areata has been linked to social disengagement and feelings of humiliation, according to a previous study [4]. The lack of significant differences between vitiligo and alopecia areata patients suggests that both conditions have a comparable psychological impact. This finding underscores the need for psychological support in managing chronic dermatological conditions, regardless of the specific diagnosis. The findings of this study demonstrate that both vitiligo and alopecia areata are associated with significantly higher levels of anxiety and depression compared to healthy individuals. This aligns with previous research highlighting the psychological burden of chronic dermatological conditions [16]. Another study highlighted the psychological burden of vitiligo and reported increased depression in alopecia areata patients [17]. The necessity for mental health support in dermatological care is highlighted by the lack of substantial differences between the two patient groups, which implies that the psychological effects of both illnesses are identical. Reinforcing the well-documented psychological burden of chronic dermatological conditions [6,18]. As results show psychological impact of visible dermatological conditions: Current results align with prior research showing that visible skin disorders are strongly associated with mental health challenges. vitiligo patients in our study scored 10.5 \pm 3.2 (anxiety) and 9.8 \pm 2.9 (depression) on the HADS, consistent with findings from a study that reported a 2-3x higher risk of depression in vitiligo patients compared to the general population [18]. Alopecia areata patients scored 11.2 \pm 3.5 (anxiety) and 10.1 \pm 3.1 (depression), mirroring results from Hunt and McHale, who noted that hair loss significantly impacts self-esteem and social functioning [4].

The lack of significant difference between vitiligo and alopecia groups ($p > 0.05$) suggests the visible disfigurement itself- regardless of the specific diagnosis- may be the primary driver of psychological distress [6]. To explain the mechanisms linking skin conditions and mental health. Patients with visible skin conditions often face social rejection, bullying, or workplace discrimination, exacerbating anxiety and

depression [16]. In the current study, qualitative feedback (not systematically collected) revealed that 40% of vitiligo patients avoided social gatherings, while 35% of alopecia patients wore wigs or hats compulsively—findings consistent with a study in 2003 [17]. Emerging evidence suggests that chronic inflammation in vitiligo (e.g., elevated TNF- α) and alopecia areata (e.g., IFN- γ) may directly affect mood-regulating neurotransmitters (Kruger & Schallreuter, 2012). And this could explain why both groups in our study scored similarly on the HADS, despite differing clinical presentations. These observations advocate for mandatory HADS screening in dermatology clinics, as early detection of anxiety\depression can improve outcomes p19]. The next table explains that

Table 6: Targeted interventions:

Condition	Recommended intervention	Evidence Base
Vitiligo	Cognitive-behavioral therapy (CBT) for body image + camouflage techniques	Papadopoulos et al. (1998)
Alopecia	Support groups+ camouflage techniques	Hunt & McHale (2005)

Limitations

Single-centre study: participants were recruited from one Libyan hospital; cultural attitudes toward skin \ hair loss may vary globally.
 Cross-sectional design: cannot establish causality (e.g., whether depression preceded or resulted from the skin condition).
 Unmeasured confounders: Stressors like financial burden or family support were not assessed but may influence outcomes [6].

Conclusion

Vitiligo and Alopecia areata Patients experience significantly increased levels of Anxiety and Depression compared to healthy individuals. Integrating & early psychological interventions should be considered as part of the management plan for these conditions is essential to improve patients' overall well-being.

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Conflicts of Interest

The authors declare no conflicts of interest

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