

# The psychological impact of vitiligo in adult Sudanese patients

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## Abstract

**Objective:** Vitiligo is a chronic skin disease that causes loss of pigment, resulting in irregular pale patches of skin. The disease has profound psychological consequences. These effects range from mild embarrassment to a severe loss of self-confidence and social anxiety, especially for those who have lesions on exposed skin. The study sought to determine the psychological impact of vitiligo in Sudanese patients. **Method:** This study is a cross-sectional, clinical-epidemiological and hospital-based study, undertaken in Khartoum Dermatologic Hospital (KDH). The data was collected between June 2007 and November 2007. 111 adult patients were enrolled sequentially during the study period and they were tested using the 12-item General Health Questionnaire (GHQ-12). **Results:** Psychological disturbances as a consequence of vitiligo were found in 36 (31 %) adult patients. Patients with mild psychological disturbances were found in 20 of these patients and severe disturbances in 16. **Conclusion:** Psychological consequences are common in patients with vitiligo

**Key words:** Vitiligo; Stress; Psychological; Sudan

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## Introduction

Vitiligo is the most common pigmentary disorder worldwide affecting 0.1-2% of the world's population, irrespective of race and gender.<sup>1</sup> It is an acquired chronic skin condition that causes loss of pigment, resulting in irregular pale patches of skin. The precise cause of vitiligo is complex and not fully understood. There is some evidence suggesting it is caused by a combination of auto-immune, genetic, and environmental factors. Vitiligo is characterized by the appearance of patchy discoloration evident in the form of typical chalky-white or milky macule(s). The macules are round and / or oval in shape, often with scalloped margins.<sup>2,3</sup> The size of the macules may vary from a few millimeters to several centimeters with the lesions affecting the skin and / or mucous membranes. Generally, the lesions are asymptomatic, although itching / burning may precede or accompany the onset of the lesions in a few patients.<sup>3,4</sup> Vitiligo is a slow and progressive disease and may have remissions and exacerbations correlating with triggering events.<sup>3,5</sup> Occasionally, the lesions of vitiligo may begin to form around a pigmented nevus [Sutton's nevus,

leukoderma aquisitum centrifugum] and then go on to affect distant regions.<sup>6,7,8</sup>

Although any part of the skin and / or mucous membranes may be affected, the disease has a predilection for normal hyperpigmented regions such as the face, groin, axillae, aerolae and genitalia. Furthermore, lesions may develop in other areas like the ankles, elbows, knees, which are subjected to repeated trauma / friction, an outcome of Koebner's phenomenon.<sup>9</sup> Poliosis circumscripta, as well as canities and premature graying, can be observed; mucosae are rarely involved. In the event of extensive disease, the lesions are symmetrically distributed with an exclusive dermatomal distribution or mucous membrane involvement.<sup>10</sup> Lip-tip syndrome, another variant of vitiligo is characterized by depigmentation of the terminal phalanges and the lips. Vitiligo may show morphological variations in the form of: trichrome, quadri-chrome, penta-chrome or blue vitiligo.

The psychological impact of vitiligo varies greatly from person to person, depending on their condition, their social and occupational situation and their psychological wellbeing. Vitiligo is often most obvious in darkly pigmented individuals, in whom the disease can have profound psychological consequences. These effects range from mild embarrassment to a severe loss of self-confidence and social anxiety, especially for those who have lesions on exposed skin.<sup>11,12</sup>

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## Method

### Site

Participants were enrolled from Khartoum Dermatologic Hospital (KDH), between July and November 2007. KDH is the biggest dermatological hospital in Sudan. It provides medical care for patients coming from all states of the country. The number of patients daily attending the out-patient clinic of this hospital ranges from 200 to 300 patients.

### Study population

Participants were adults (> 13yrs) with vitiligo attending the hospital during the mentioned period of study. All patients were included regardless of gender, race, religion, social status or occupation.

### Inclusion criteria:

1. Sudanese patients.
2. Adult patients of either gender.
3. Patients with depigmentation due to vitiligo.

### Exclusion criteria:

1. Foreign (= not Sudanese) patients.
2. Children (<13).
3. Patients with depigmentation caused by chemicals, burns or other disease/s.

### Sampling & data collection

All patients with vitiligo were sequentially included in this study. Consent was obtained from the patient before they were enrolled. The diagnosis of vitiligo was made by experienced dermatologists and was essentially clinical. All patients were examined clinically to exclude other associated autoimmune diseases like Graves disease, Hashimotos thyroiditis, Lupus Erythematosus, Type 1 Diabetes Melitus, etc.

Psychological consequences of vitiligo were assessed by using the 12-item General Health Questionnaire (GHQ12). The General Health Questionnaire is a widely used screening instrument. It was used because it is simple & easy for the patient to complete. There are that other such questionnaires. The GHQ 12 detects a wide range of psychological problems, mainly within the anxiety/depression spectrum, and has been shown to be a valid and reliable instrument across cultures.<sup>13</sup> It is valid only for adults and was translated into Arabic. The score of the questionnaire ranges from 0 to 36. Scores  $\leq 15$  suggests no psychological disturbances. A score > 15 suggests mild psychological disturbances or evidence of distress. A score >20 suggests severe problems and severe psychological distress.

## Results

Of the patients screened and examined 31% (n=36) had responses in keeping with a psychological disturbance associated with a diagnosis of vitiligo, whilst 62% (n=75) had responses that were psychologically normal. There were 20 of the 36 with mild psychological disturbances (17.5 % of the total sample screened). There were 16 of the 36 (13.5 %) with severe disturbances (Table I).

Based on results in Tables II,III and IV it was concluded that the GHQ 12 scores were normally distributed. All calculated statistical values did not reveal any single factor (e.g. age, sex, disease duration, severity) that contributed to the psychological state. The mean GHQ-12 score was 13.31 (SD=

**Table I: Numbers and frequency of adult patients by GHQ-12 score**

Factor	Level	Frequency	N
Psychological score	Normal ( $\leq 15$ )	67.2 %	75
	Mild (16-20)	17.5 %	20
	Severe ( $\geq 21$ )	13.5 %	16
	Total	98.2 %	111

**Table II: Goodness-of-Fit Tests for Psychological score normal distribution**

Test	Statistic	P-value
Kolmogorov-Smirnov	D 0.08858315	Pr > D >0.150
Cramer-von Mises	W-Sq 0.08084385	Pr > W-Sq 0.206
Anderson-Darling	A-Sq 0.50681999	Pr > A-Sq 0.203

**Table III: Mean GHQ-12 score by age, gender, percentage of skin affected and disease activity factors.**

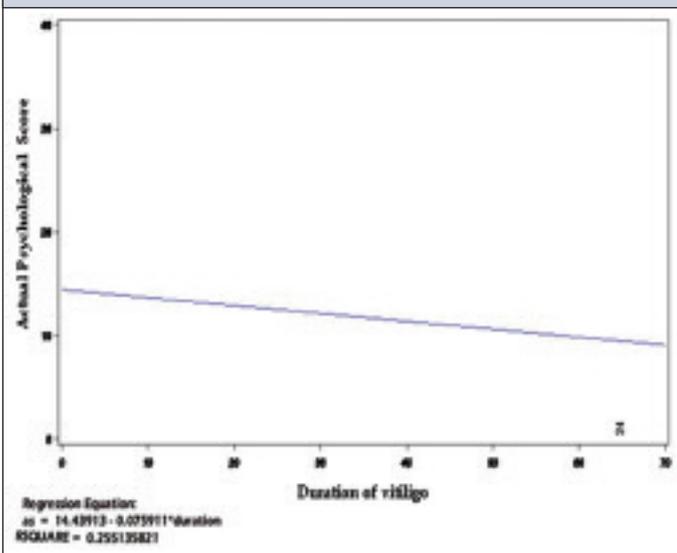
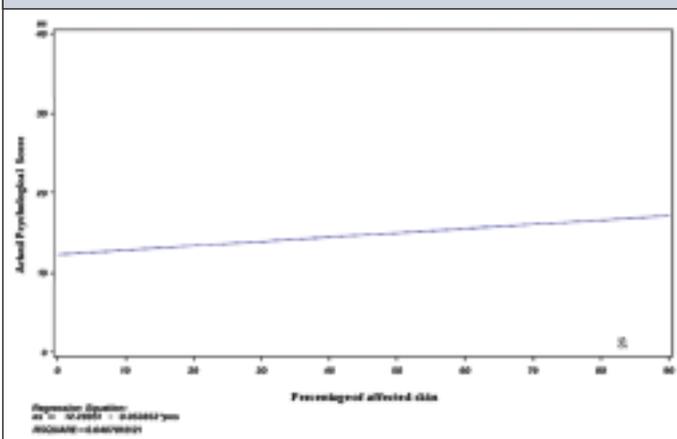
Factor	Level	Mean GHQ-12 score	N
Age-group	13-59 yrs	13.271	90
	> 60 yrs	13.286	21
Gender	male	12.033	46
	female	14.238	65
Percentage of skin affected	>10	13.357	66
	<10	13.267	45
Disease activity	active	12.735	52
	static	13.842	59

**Table IV: Tests for Location:  $\mu = 0$**

Test	Statistic	P-value
Student's t	16.97955	Pr > t < .0001
Sign M	36	Pr >= M < .0001
Signed Rank S	1314	Pr >= S < .0001

6.65). The distribution tends to show normality. Test for location of the means (Table IV) revealed goodness of fit for normal distribution (p values are less than 0.0001) i.e, the distribution was a normal one.

When the actual GHQ-12 score was plotted with the duration of vitiligo, the resultant curve demonstrated a negative correlation (Figure 1). This means that – despite statistical insignificance (R square <1) – psychological distress is more likely when the disease is in the acute stages. Moreover, when the actual GHQ-12 score is plotted with the percentage of the skin affected, the correlation is positive and therefore psychological distress is more likely amongst those with severe disease (Figure 2). Again, the correlation is statistically insignificant (R square <1).

**Figure 1: Relationship between actual psychological score & duration of Vitiligo****Figure 2: Relationship between actual psychological score & percentage of affected skin**

## Discussion

Dermatological patients quite commonly experience psychiatric morbidity. Vitiligo, a common pigmentary disorder, is particularly recognized to be associated with high psychiatric consequences. In an Indian study of psychiatric morbidity associated with vitiligo, 25% of his patients were found to have psychiatric morbidity which was significantly correlated with dysfunction arising from vitiligo.<sup>11</sup> It is well established that emotional factors impact on skin disease with stress being related to flare ups of skin conditions.<sup>12</sup> A further Indian study assessed the nature and extent of the social and psychological difficulties associated with vitiligo and its impact on treatment by using the dermatology life quality index (DLQI).<sup>14</sup> The mean score of DLQI in this study (10.67) was relatively high, and the findings of the study demonstrated that patients with a higher DLQI score had a less favourable outcome of their vitiligo suggesting the need for additional psychological intervention as part of the intervention.<sup>14</sup>

The current study confirmed that psychological distress as measured by the GHQ-12 occurs in a sufficiently large number of vitiligo sufferers, within an African setting to warrant attention. It must however be noted that a number of limitations

existed i.e. the sample was recruited from a hospital setting, therefore it is difficult to generalize the results; the duration of the study was relatively short and a different picture may have emerged over a longer period; the inclusion of individuals over the age of 12 as part of an adult sample may be questionable in other settings. In addition, as there are no similar studies in Sudan- comparison of data is not possible.

## Conclusion

A considerable number of patients with vitiligo were found to be psychologically troubled. Therefore patients with vitiligo should be managed & followed-up with the cooperation of not only dermatologists but also psychiatrists and clinical psychologists. Psychiatric intervention is strongly recommended, especially during the early stages of the disease, because psychological consequences of vitiligo were found to be more common in the acute stages of the disease. Further studies on the scope of psychopathology associated with vitiligo are recommended in order to define and hence manage the specific psychiatric diseases that are more common in patients with vitiligo. Educational programs aimed at increasing dermatologists' awareness of mental health issues and promoting the use of psychiatric screening questionnaires might help & increase recognition of psychiatric morbidity in patients with skin disease. Such programs are strongly recommended.

## References

- Hann SK, Kim YS, Yoo JH, Chun YS. Clinical and histological characteristic of trichrome vitiligo. *J Am Acad Dermatol* 2000;42:589-96.
- Shwartz RA, Janniger CK. Vitiligo. *Cutis* 1997;60:239-44.
- Behl PN, Aggarwal A, Srivastava G. Vitiligo. *Practice of Dermatology*. 9th ed. CBS Publishers: New Delhi; 2003. p. 238-41.
- Arata J, Abe-Matsuura Y. Generalized vitiligo preceded by a generalized figurate erythematous eruption. *J Dermatol* 1994;21:438-41.
- Abdel-Naser MB, Ludwig WD, Gollnick H, Orfanos CE. Non segmental vitiligo decrease of the CD45RA+ T-cell subset and evidence for peripheral T-cell activation. *Int J Dermatol* 1992;31:321-6.
- Wayne DM, Helwig EB. Halo nevi. *Cancer* 1968;22:69-90.
- Handa S, Dogra S. Epidemiology of childhood vitiligo: A study of 625 patients from North India. *Pediatr Dermatol* 2003;20:207-10.
- Fisher AA. Differential diagnosis of idiopathic vitiligo: Part III: Occupational leukoderma. *Cutis* 1994;53:278-80.
- Pegum JS. Vitiligo. *Br J Dermatol* 1996;134:373.
- Wee TA. A case report of extensive vitiligo. *Hawaii Med J* 1997;56:37-40.
- Mattoo SK, Handa S, Kaur I, Gupta N, Malhotra R. Psychiatric morbidity in vitiligo: prevalence and correlates in India. *J Eur Acad Dermatol Venereol*. 2002; 16:573-578.
- Locala JA. Current concepts in psychodermatology. *Curr Psychiatry Rep*. 2009 ;11:211-8.
- Kilic C, Rezaki M, Rezaki B, Kaplan I, Ozgen G, Sa duyu A, Oztürk MO. General Health Questionnaire (GHQ12 & GHQ28): psychometric properties and factor structure of the scales in a Turkish primary care sample. *Soc Psychiatry Psychiatr Epidemiol* 1997, 32:327-331.
- Parsad D, Pandhi R, Dogra S, Kanwar AJ, Kumar B. Dermatology Life Quality Index score in vitiligo and its impact on the treatment outcome. *Br J Dermatol*. 2003;148:373-374.