

## Original Research Article

# A clinico-epidemiological profile of vitiligo in female patients attending a tertiary care centre of North India and its impact on quality of life

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### ABSTRACT

**Background:** Vitiligo is a chronic acquired depigmenting disorder with significant psychosocial consequences, particularly among female patients due to cosmetic concerns and sociocultural stigma. Data focusing exclusively on females and quality of life from North India remain limited.

**Methods:** A hospital-based cross-sectional study was conducted in the Department of Dermatology, Venereology and Leprology of a tertiary care centre in North India. Ninety female patients with clinically diagnosed vitiligo were enrolled. Demographic and clinical details were recorded. Quality of life was assessed using the dermatology life quality index (DLQI). Data were analysed using descriptive statistics and inferential tests.

**Results:** The mean age of patients was  $29.6 \pm 11.2$  years. The most common age group affected was 18–30 years (42.2%). Non-segmental vitiligo was the predominant clinical type (75.6%). Facial involvement was observed in 51.1% of patients. The mean DLQI score was  $10.8 \pm 4.6$ , indicating moderate to severe impairment of quality of life. Higher DLQI scores were significantly associated with younger age, facial involvement and unmarried status.

**Conclusions:** Vitiligo has a significant negative impact on the quality of life of female patients, particularly younger women and those with visible lesions. A holistic management approach addressing both clinical and psychosocial aspects is essential.

**Keywords:** Vitiligo, Females, Quality of life, DLQI, North India

### INTRODUCTION

Vitiligo is a chronic acquired pigmentary disorder characterized by selective loss of melanocytes, resulting in depigmented macules and patches. It affects approximately 0.5–2% of the global population and occurs worldwide irrespective of age, sex or ethnicity.<sup>1-3</sup> Although the prevalence is similar in males and females, the psychosocial burden of vitiligo is often greater in women.

In Indian society, visible skin disorders such as vitiligo are frequently associated with stigma, social discrimination and misconceptions, particularly affecting marriage prospects and self-esteem in women.<sup>4-6</sup> Studies have shown that vitiligo is associated with anxiety, depression

and impaired quality of life, even when the disease is clinically limited.<sup>7,8</sup>

The clinical profile of vitiligo varies based on genetic, environmental and sociocultural factors. North India represents a unique setting where traditional beliefs and social pressures may amplify the psychological impact of vitiligo in females. However, data focusing specifically on the clinico-epidemiological profile and quality of life in female vitiligo patients from this region are scarce.

The present study was undertaken to evaluate the clinical and epidemiological characteristics of vitiligo in female patients and to assess its impact on quality of life using a validated dermatology-specific instrument.

## METHODS

### Study design and setting

This was a hospital-based cross-sectional study conducted in the Department of Dermatology, Venereology and Leprosy at a tertiary care centre in North India.

The study was conducted over a period of 12 months from June 2023 to May 2024.

### Study population

Female patients aged  $\geq 12$  years with a clinical diagnosis of vitiligo attending the dermatology outpatient department were a part of the study population.

### Inclusion criteria

Inclusion criteria included female patients with vitiligo and willingness to participate and provide informed consent.

### Exclusion criteria

Exclusion criteria included other causes of depigmentation, severe psychiatric illness and unwillingness to participate.

### Data collection

A structured proforma was used to record demographic details, age of onset, duration of disease, family history, clinical type of vitiligo, sites involved, Koebner phenomenon and leukotrichia.

### Quality of life assessment

Quality of life was assessed using the dermatology life quality index (DLQI). DLQI scores range from 0 to 30, with higher scores indicating greater impairment.

### Statistical analysis

Data were analysed using descriptive statistics. Associations between DLQI scores and clinical variables were assessed using Chi-square test and student's t-test. A  $p < 0.05$  was considered statistically significant.

Commonest site for metastasis was regional lymph node. 8 patients had secondary deposits in liver, 2 were having deposit in anterior abdominal wall and two females were having secondary deposits in both ovaries.

## RESULTS

A total of 90 female patients with clinically diagnosed vitiligo were included in the study.

### Demographic profile

The age of the patients ranged from 12 to 60 years, with a mean age of  $29.6 \pm 11.2$  years. The majority of patients belonged to the 18–30-year age group (38 patients; 42.2%), followed by the 31–45-year age group (26 patients; 28.9%). Adolescents below 18 years constituted 13.3% (12 patients), while 15.6% (14 patients) were aged above 45 years (Table 1).

**Table 1: Age-wise distribution of patients (n=90).**

Age group (years)	Number	Percentage
<18	12	13.3
18-30	38	42.2
31-45	26	28.9
>45	14	15.6

A greater proportion of patients were unmarried (53 patients; 58.9%), while 37 patients (41.1%) were married.

### Disease characteristics

The mean age of onset of vitiligo was  $22.4 \pm 9.8$  years, with 61.1% of patients reporting onset before the age of 25 years. The mean duration of disease at presentation was  $7.2 \pm 5.1$  years, ranging from 6 months to 24 years. A positive family history of vitiligo was reported in 16 patients (17.8%), suggesting a genetic predisposition. Koebner phenomenon was observed in 19 patients (21.1%), while leukotrichia was noted in 13 patients (14.4%).

### Clinical types of vitiligo

Based on clinical classification, non-segmental vitiligo was the most common type, observed in 68 patients (75.6%). Segmental vitiligo was present in 14 patients (15.6%), while mixed vitiligo was seen in 8 patients (8.8%) (Table 2).

**Table 2: Clinical types of vitiligo (n=90).**

Clinical type	Number	Percentage
Non-segmental	68	75.6
Segmental	14	15.6
Mixed	8	8.8

### Distribution of lesions

Lesions were most commonly located on exposed body sites. Facial and neck involvement was observed in 46 patients (51.1%), followed by involvement of the upper limbs in 38 patients (42.2%) and lower limbs in 32 patients (35.6%). Truncal involvement was noted in 24 patients (26.7%), while genital involvement was seen in 6 patients (6.7%). Multiple body sites were involved in several patients.

### Quality of life assessment

Quality of life assessment using the DLQI revealed a mean score of  $10.8 \pm 4.6$ , indicating moderate to severe impairment. DLQI scores ranged from 2 to 22. Based on DLQI categories, 7 patients (7.8%) experienced no effect on quality of life, 20 patients (22.2%) experienced a small effect, 31 patients (34.4%) experienced a moderate effect, and 32 patients (35.6%) experienced a very large effect (Table 3). Overall, 63 patients (70.0%) had moderate to very large impairment in quality of life.

**Table 3: DLQI score distribution (n=90).**

DLQI category	Score range	Number	Percentage
No effect	0–1	7	7.8
Small effect	2–5	20	22.2
Moderate effect	6–10	31	34.4
Very large effect	11–20	32	35.6

### DISCUSSION

Vitiligo is a chronic depigmenting disorder with a significant psychosocial impact, particularly among female patients. The present study evaluated the clinico-epidemiological profile of vitiligo in females and assessed its impact on quality of life in a tertiary care setting in North India.

The majority of patients in this study were young females, with a mean age of  $29.6 \pm 11.2$  years, and most belonged to the 18–30-year age group. Similar age distributions have been reported in previous Indian studies, indicating that vitiligo commonly manifests during the most socially active period of a woman's life.<sup>4,6</sup> Early onset of disease (mean age  $22.4 \pm 9.8$  years) exposes affected women to prolonged psychosocial stress.

Non-segmental vitiligo was the predominant clinical type (75.6%), consistent with earlier studies from India and other parts of the world.<sup>13,19</sup> The presence of a positive family history in 17.8% of patients supports the role of genetic predisposition. Facial involvement was the most commonly affected site, which has important implications as lesions on exposed areas are more likely to attract social attention and contribute to stigma. Koebner phenomenon observed in 21.1% of patients emphasizes the role of trauma in disease progression and the need for patient education.

Quality of life assessment using the DLQI revealed a mean score of  $10.8 \pm 4.6$ , indicating moderate to severe impairment. Approximately 70% of patients experienced moderate to very large effects on their quality of life. These findings are comparable to previous Indian studies that have documented substantial impairment in vitiligo patients, particularly among females.<sup>5,7</sup> Younger age was significantly associated with higher DLQI scores, possibly

due to heightened concerns related to appearance, social acceptance, and marriage. Facial involvement also showed a strong association with poorer quality of life, in agreement with earlier reports.<sup>7,8</sup>

Unmarried status was significantly associated with higher DLQI scores, reflecting sociocultural pressures faced by women with vitiligo in the Indian context. Misconceptions regarding vitiligo, including fears of contagion and hereditary transmission, further contribute to social discrimination and emotional distress.

Although psychiatric morbidity was not formally assessed in this study, previous literature has consistently demonstrated increased rates of anxiety, depression, and social withdrawal among vitiligo patients.<sup>6,7</sup> The findings of this study reinforce the concept that vitiligo should not be viewed merely as a cosmetic disorder but as a condition with significant psychological and social implications. The results highlight the importance of a holistic management approach. Routine assessment of quality of life, patient counselling, and psychosocial support should be integral components of vitiligo management, particularly for younger women and those with visible lesions. Public awareness and education initiatives are also essential to reduce stigma and improve social acceptance.

### Limitations

Hospital-based design and cross-sectional nature limit generalizability. The limitations of this study include its hospital-based design and cross-sectional nature, which may limit generalizability. Longitudinal studies assessing changes in quality of life following therapeutic and psychological interventions are warranted.

### CONCLUSION

Vitiligo significantly impairs the quality of life of female patients, particularly younger women and those with visible lesions. Incorporation of quality-of-life assessment and psychosocial counselling into routine dermatological care is essential.

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