

**IMPACT OF VITILIGO ON QUALITY OF LIFE: A MULTI-CENTERED, CROSS-SECTIONAL, OBSERVATIONAL STUDY****Dr. Mustakim M. Mansuri\*, Yesha M. Trivedi and Abhi Antala**

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**ABSTRACT**

Vitiligo, a chronic skin condition characterized by depigmented patches, which affects patients' quality of life (QoL). The present study was conducted to assess the QoL of vitiligo patients was conducted in a total of 131 patients, with a nearly equal gender distribution (54.20% male, 45.80% female), predominantly from Gujarat (74.81%). The study used a "Vitiligo Life Check" questionnaire to evaluate the social and mental impact of vitiligo, comparing patients' initial and present QoL. The results revealed that 61.8 percentage of patients initially experienced a moderate impact on QoL, and which was reduced to 25.95% with treatment, indicating some improvement over time. However, female patients reported significantly worse scores in mental and social domains compared to male patients, suggesting gender differences in coping with the condition. Additionally, 22.9% of patients reported depression, underscoring the psychological burden of vitiligo. The study concludes that while some patients have experienced improvements in their QoL, vitiligo continues to have a significant psychosocial impact, especially among women. Addressing both the physical and emotional aspects of vitiligo is crucial for improving patient well-being. Effective treatment should include not only dermatological interventions but also psychological support to reduce the stigma and enhance coping mechanisms. This study highlights the importance of ongoing QoL assessments in vitiligo patients and advocates for integrated care involving both dermatologists and mental health professionals to improve the overall well-being of individuals affected by the condition.

**KEYWORDS:** Vitiligo, Quality of Life, Vitiligo life check questionnaire.**INTRODUCTION**

Vitiligo is a skin condition marked by a gradual reduction in skin pigmentation, leading to the development of white patches. It is characterized by the insufficient production of melanin, a pigment produced by melanocytes in the epidermis. It is estimated that 0.5% to 2% of people worldwide suffer with vitiligo.<sup>[1]</sup> In India, Gujarat and Rajasthan has the highest prevalence of up to 8.8%.<sup>[2]</sup> While vitiligo itself does not impact life expectancy, the noticeable contrast in skin color can significantly affect patients' quality of life and mental well-being. Individuals with vitiligo often experience stigmatization and social isolation due to the visible white patches on their skin. The psychological impact is notable, with affected individuals being more susceptible to psychiatric morbidities.<sup>[3,4]</sup>

The etiology of vitiligo is not yet fully understood. Multiple theories have been proposed regarding the causes of the disorder like that: genetic, oxidative stress, autoimmune, autoinflammatory, neurogenic, melanocyte detachment, apoptotic and multifactorial.<sup>[5]</sup> Vitiligo

commonly manifests as non-symptomatic depigmented macules and patches, exhibiting a milky or chalk-white coloration, devoid of observable signs of inflammation. The onset of the condition may be preceded by factors such as intense sun exposure, pregnancy, skin injuries, or emotional stress.<sup>[6]</sup>

Different scoring systems are utilized to evaluate the severity of vitiligo, some of them are: Affected body surface area (BSA), Vitiligo Disease Activity (VIDA) Score, Vitiligo Area Scoring Index (VASI), The Vitiligo Extent Score (VES), Vitiligo Disease Activity (VIDA) score.<sup>[7]</sup> Treatment of vitiligo is undoubtedly the most challenging dermatological issue. Treatment options for vitiligo include phototherapy, surgery, multivitamins and topical medications such as vitamin D, calcineurin inhibitors, immunosuppressive drugs, Corticosteroids and so more.<sup>[8]</sup> Psychosocial interventions play a crucial role in addressing the emotional and social impact of vitiligo.<sup>[2]</sup>

The appearance of white patches on the skin has the potential to evoke a spectrum of emotional reactions, including diminished self-confidence, heightened anxiety and in some cases even depression. Such emotional responses can markedly reduce an individual's overall well-being, affecting not only the person directly but also those in their immediate social circle.<sup>[9]</sup> Patients may feel emotionally stressed, especially if their faces or other visible body parts become vitiligo. Some experience depression, anxiety, humiliation (which lowers their self-confidence), or embarrassment over how people will respond.<sup>[9,2]</sup> Vitiligo patients experience notable declines in quality of life, particularly evident in females and those dealing with depression. A comprehensive evaluation is essential, addressing both the physical and psychological aspects of the condition. Effective collaboration between dermatologists and psychiatrists is crucial for enhancing the well-being of vitiligo patients.<sup>[2]</sup>

### MATERIALS AND METHODS

The study involved all vitiligo patients who visited the clinic in Ahmedabad and the camp (Manav Seva Trust of Matar, Kheda) in Gujarat. It was multicentered, cross-sectional, and observational study which lasted six months. The formula yielded an estimated sample size of 114. A total of 131 patients were recruited for the study after screening them at the designated location and those who satisfy the inclusion and exclusion criteria were enrolled in the study. Case Record Form (CRF) and Informed consent form along with Quality Of Life questionnaire (vitiligo life check) were filled. Patients' consent along with signatures were taken initially before the study.

This study included participants both male and female above 18 years of age, Patients diagnosed with vitiligo

more than 6 months ago and Patients with any type of chronic diseases. Pregnant women, lactating mothers, Patients having any communication deficits were excluded from the study. The goal of this study was to assess the quality of life of vitiligo patients based on questionnaire in terms of social and mental aspects as there is impairment in the patient's QOL due to their skin condition. Secondary objective was to assess and compare the quality of life in patients at the time of initial vitiligo diagnosis and their current status.

### STATISTICAL ANALYSIS

The study involved collection of all relevant data from patients including demographics, disease duration, medical history, other co-morbidities and the collected data was entered in separate excel sheets and results were concluded according to the respective parameter. Data were analyzed through Graph Pad Prism 8.0.1 trial version. Frequencies and percentages were used for categorical variables. Mean and standard deviation and N (%) were calculated for continuous variables. For categorical data, the Chi-square test was used to analyze differences across groups. Appropriate statistical tests were selected for analysis, majority of tests used were T-test, One-way ANOVA, chi-square.

### RESULTS

In the present study was conducted with 131 vitiligo patients, out of which 71 (54.20%) were male and 60 (45.80%) were female. The highest percentage of patients were seen in age group of 18-28 years with percentage 30.53. Most patient's geographical location was in Gujarat, accounting for 98 patients (74.81%), followed by Maharashtra with 25 patients (19.08%). Only a small number of patients were from Madhya Pradesh (7 patients, 5.34%) and Rajasthan (1 patient, 0.76%).

**Table 1: Sociodemographic variables of patients with vitiligo.**

Total number of patients (n=131)		
Variables	Category	Number (%)
Gender	Male	71 (54.20)
	Female	60 (45.80)
Age	All Patients	131 (100.00)
	18-28	40 (30.53)
	29-38	35 (26.72)
	39-48	31 (23.66)
	≥49	25 (19.08)
State	Gujarat	98 (74.81)
	Maharashtra	25 (19.08)
	Madhya Pradesh	7 (5.34)
	Rajasthan	1 (0.76)
Education	University Education	78 (59.54)
	Grade 1-10	15 (11.45)
	Grade 11-12	30 (22.90)
	Illiterate	8 (6.11)

**Table 2: Vitiligo patient's history.**

Total no of patients (n=131)		
Variables	Category	Number (%)
Family history	Vitiligo	34 (25.95)
	Diabetes	34 (25.95)
	Thyroid	8 (6.11)
	Others	7 (5.34)
	None	64 (48.85)
Chronic diseases	Thyroid	18 (13.74)
	Hypertension	12 (9.16)
	Diabetes	4 (3.05)
	Others	2 (1.53)
	None	97 (74.05)
Previous & current depression	Yes	30 (22.90)
	No	101 (77.10)
Past medication history	Ayurvedic	68 (51.91)
	Allopathy	47 (35.88)
	Homeopathy	23 (17.56)
	Others (Unani + Phototherapy)	2 (1.53)
	None	26 (19.85)

Table 2 shows the medical histories of vitiligo patients. Vitiligo and diabetes had the largest family history (34%), followed by thyroid (8%). Thirteen of the 131 patients (27.48%) had chronic illnesses, with thyroid disease accounting for the largest percentage

(13.74%). Thirty patients (22.90%) in our study reported depression in the past or present. Previous medication histories included allopathic, homeopathic, and ayurveda therapy, with the majority of patients (51.91%) having received ayurvedic treatment first.

**Table 3: Comparison between initially and present quality of life in vitiligo patients.**

N=131	No Effect	Small Effect	Moderate Effect	Large and Extremely Large Effect	Chic Square value, df	P Value
Initial QOL Score	1(0.76)	29(22.1)	81(61.8)	20(15.26)	60.64	<0.0001*
Present QOL Score	9(6.87)	83(63.3)	34(25.95)	5(3.81)		
* Represents Statistically Significantly Difference At 95%CI, P<0.05						

The table compares the impact of vitiligo on patients' quality of life initially and at present, categorized into four levels. The percentage of patients reporting no impact on their quality of life increased from 1 initially to 9 at present while the majority of patients (83 at

present) continue to experience a small impact on their quality of life. There was a decrease in the percentage of patients experiencing a large or extremely large impact, from 20 initially to 5 at present. This indicates an improvement in the quality of life for some individuals.

**Table 4: Comparison between gender and QOL of vitiligo patients.**

Gender	No Impact	Mild Impact	Moderate Impact	Severe Impact	Chic Square Value, df	P Value
Male (N=71)	7(9.86)	47(66.20)	17(23.94)	0(0)	8.371, 3	0.0389*
Female(N=60)	2(3.33)	36(60)	17(28.33)	5(8.33)		
* Represents Statistically Significantly Difference At 95%CI, P<0.05						

The provided data categorizes the perceived impact of vitiligo on the quality of life of male and female into different categories. The data suggests some differences in the noticed impact of vitiligo on the quality of life between male and female patients. Male patients appear to have a higher proportion reporting a small impact compared to female patients (47 vs. 36), indicating

potentially different coping mechanisms or experiences between genders.

Female patients, on the other hand, have a higher proportion reporting a large impact or extremely large impact compared to male patients (5 vs. 0), suggesting that females may face more significant social, mental

domain, and emotional distress or limitations in daily functioning due to vitiligo.

**Table 5: Comparison between gender and different QOL domains.**

Quality of life domains	Median (IQR)		P-Value
	MALE (N=71)	FEMALE (N=60)	
Social Domain	2(1-3)	2(1.5-4)	0.0364*
Mental domain	7(5-10)	9(7- 14.5)	0.0113*
Limitation domain	4(3-7)	6(4-8)	0.0455*

\* Represents Statistically Significantly Difference At 95%CI, P<0.05

The provided table compares the scores of different quality of life (QOL) domains between male and female vitiligo patients, with higher values indicating worse quality of life. Female patients have significantly worse mental domain scores compared to male patients. Also, female patients tend to report more limitations in daily activities due to vitiligo compared to male patients, as reflected by their worse scores in this domain.

## DISCUSSION

Vitiligo is a chronic skin disorder characterized by depigmented patches on the skin, which can significantly impact the quality of life (QoL) of affected individuals. Anxiety, depression, and notable psychosocial repercussions are common among individuals dealing with this condition.

The impact of vitiligo on QoL extends beyond physical appearance, affecting emotional well-being, social interactions, and also in the limitation's domain. By addressing both the physical and emotional aspects of skin health, psychodermatology plays a crucial role in comprehensive care for individuals with dermatological conditions. Initially, the major patients had a moderate impact which changes to a small impact was assessed on the quality of life in vitiligo patients at present with our developed questionnaire. So, the improvements in QoL are achievable through a combination of effective treatment options, psychological support, education, self-acceptance, social support, and integrated care.

In our study, females exhibited significantly higher initial and present QOL scores compared to males. This difference suggests that gender may influence how individuals perceive and cope with vitiligo, with males potentially demonstrating better adaptation and psychological resilience. Different studies suggested that compared to male patients, female vitiligo sufferers are more prone to experience depression and have impairment in QOL.<sup>[10]</sup> A possible reason might be that women's perceptions of attractiveness are influenced by their strong associations with skin tone.

The present study concluded that there was an association between disease severity and the perceived quality of life among vitiligo patients but the exposed area involvement doesn't connect with a worse quality of life. Numerous research shown that when lesions were present in conspicuous locations, patients' quality of life scores increased. A larger affected body surface area and

the participation of visible body parts were consistently linked to a worse quality of life.<sup>[11]</sup> This finding suggests that as the severity of vitiligo increases, there is a corresponding change in the distribution of QOL effects.

Improvements in quality of life (QoL) for individuals with vitiligo can occur through effective treatments, leading to visible regimentation and enhanced self-esteem. Psychological support, education, and social acceptance also play crucial roles, in fostering resilience, reducing stigma, and promoting positive body image. Our study highlights the significance of conducting initial assessments and continuously monitoring the quality of life (QOL) in patients with vitiligo.

## CONCLUSION

In conclusion, vitiligo has a profound impact on the quality of life of affected individuals, encompassing psychological, social, mental and limitation dimensions. The results of study clearly support the notion that treatment of vitiligo patients should address the emotional effects and include tools for psychological intervention, which may ultimately lead to better adaptation to the disease and coping, thus improving the patient's overall quality of life.

## CONFLICT OF INTEREST

There is no conflict of interest in our study.

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