



Published by  
Department of Dermatology and  
Venereology, Universitas Udayana

# Factors affecting quality of life in vitiligo patients at Dermatology and Venereology Polyclinic Bali Mandara General Hospital



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## ABSTRACT

**Introduction:** Vitiligo is a chronic and asymptomatic skin depigmentation disorder due to progressive loss of melanocytes. Vitiligo can affect a patient's psychological condition that causes disturbances in the quality of life. This study aims to identify factors affecting the quality of life (QoL) in vitiligo patients at Dermatology and Venereology Polyclinic Bali Mandara General Hospital.

**Research Methods:** Cross-sectional study was conducted using Dermatology Life Quality Index (DLQI) questionnaire given to vitiligo patients who came to the Dermatology and Venereology Polyclinic at Bali Mandara General Hospital Denpasar in January 2022.

**Results:** Among the 71 respondents, seven respondents felt no impact, 33 respondents had a small impact, 18 respondents had a moderate impact, and 13 respondents had a very large impact on quality of life. There was a significant relationship between occupation and location of vitiligo with quality of life ( $p \leq 0.05$ ), and partially the location of vitiligo lesions had a significant effect on the quality of life ( $p \leq 0.05$ ).

**Conclusion:** This study shows that vitiligo has a significant impact on quality of life. Relevant counseling and supportive therapy play an important role in the management of vitiligo patients.

**Keywords:** Vitiligo, DLQI, quality of life, QoL.

**Cite This Article:** Phinari, H., Nadeak, B.Y., Wahyuni, L.P.D. 2022. Factors affecting quality of life in vitiligo patients at Dermatology and Venereology Polyclinic Bali Mandara General Hospital. *Bali Dermatology and Venereology Journal* 5(1): 13-16. DOI: 10.15562/bdv.v5i1.88

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Submit: 2022-03-15  
Accepted: 2022-03-28  
Publish: 2022-07-31

## INTRODUCTION

Vitiligo is an acquired skin depigmentation disorder that results from the progressive loss of melanocytes. Vitiligo is clinically characterized by clear white macules and may be accompanied by white hairs or poliosis. The prevalence of vitiligo is estimated to occur in 0.5% to 2% of the world population.<sup>1</sup> The major cause of vitiligo is currently unknown, but genetic, autoimmune, neurogenic, and autotoxic factors are considered to be involved in the mechanism of vitiligo. Vitiligo is classified into three types based on the extent and distribution of lesions such as localized (focal, segmental, mucosal), generalized (acrofacial, vulgaris or mixed), and universal.<sup>2</sup>

Vitiligo can affect any age group but usually begins before the third decade of life, with nearly half of patients presenting before age 20 and one-third

before age 12. Vitiligo is more common in women.<sup>2</sup> Vitiligo has a negative impact on the patient's quality of life because it is associated with social stigma. In addition, it has a major influence on the quality of life because it is related to cosmetic aspects, chronic diseases and long-term treatment that is often ineffective.<sup>3,4</sup>

The management of vitiligo is still a challenge due to the unpredictable development of the disease because depigmented lesions may persist, expand or stimulate repigmentation. Repigmentation initially occurs in a perifollicular pattern or begins at the margins of the lesion, with treatment and evaluation lasting at least 2-3 months. Various treatment modalities of vitiligo with the principle of triggering repigmentation, such as phototherapy, topical and systemic immunosuppressants, and surgical techniques, give varying results. Currently, vitiligo patients are

starting to use camouflage techniques using a concealer to increase their self-confidence.<sup>1,5,6</sup>

Vitiligo disease affects the individual's perception of body image, self-esteem, affects psychological health and social functioning, perceived stigmatization, and impaired quality of life. Vitiligo patients feel they have a bad body image that affects them emotionally and psychologically. Feelings of having poor body image are associated with depression, low self-esteem, eating disorders, and even suicidal ideation. This condition can have a significant impact on social relationships. By knowing the factors that affect the QoL in vitiligo patients, anticipation can be done with holistic management, such as providing appropriate guidance and counseling.<sup>3,7</sup> This study aims to identify factors affecting the quality of life (QoL) in vitiligo patients at Dermatology and

Venereology Polyclinic Bali Mandara General Hospital. By knowing the factors that affect the QoL in vitiligo patients, anticipation can be done with holistic management such as providing appropriate guidance and counseling.

## METHODS

This is a cross-sectional study using Dermatology Life Quality Index (DLQI) questionnaire given to vitiligo patients aged 16 years and over who visited the Dermatology and Venereology Polyclinic Bali Mandara General Hospital Denpasar in January 2022. Sampling method in this study was approached through consecutive sampling. Inclusion criteria were patients age 16 years and above with diagnosis of vitiligo confirmed by a dermatologist who are willing to participate. The exclusion criteria are refused to participate, diagnosis of skin disease other than vitiligo, other chronic disease or condition that might affect QoL, and marked disability. Data analysis using non-parametric test chi-squared and logistic regression test with Statistical Package for The Social Sciences (SPSS) software. In this study, the diagnosis of vitiligo was made by a dermatologist. Dermatology Life Quality Index is used as an instrument to assess the quality of life in patients with skin diseases. This parameter is made for the age 16 and over. The questionnaire contains ten questions, with each question having four answer options with a value of 0 to 3. The final score is obtained from the total with a minimum score of 0 and a maximum of 30 (Table 1). The higher the DLQI value indicates, the greater the impact of vitiligo on the QoL. The interpretation of the DLQI assessment includes:<sup>8</sup>

## RESULTS

In this study, 71 vitiligo respondents aged over 16 years who came to Dermatology and Venereology Polyclinic Bali Mandara General Hospital Denpasar were collected. The location of vitiligo was differentiated based on the lesions in the visible and invisible areas. Lesions on the visible areas include the face, neck, arms, fingers and other areas of the body that are not covered by clothes, while the lesions that are not visible are on body parts that are

**Table 1. Interpretation of DLQI.**

DLQI	Interpretation
0-1	No impact on QoL
2-5	Small impact on QoL
6-10	Moderate impact on QoL
11-20	Very large impact on QoL
21-31	Extremely large impact on QoL

**Table 2. Characteristics of Respondents.**

Characteristics	Frequency (n)	Percentage (%)
Age		
< 25 years	24	33.8
≥ 25 years	47	66.2
Sex		
Male	27	38
Female	44	62
Marital status		
Single	27	38
Married	44	62
Occupation		
Does not work	17	23.9
Work/student	54	76.1
Location of vitiligo		
Visible	45	63.4
Not visible	26	36.6
Long-Suffering		
<1 year	12	16.9
≥1 year	59	83.1

**Table 3. Distribution of Respondents Based on QoL.**

Quality of life	Frequency	Percentage (%)
No impact	7	9.9
Small impact	33	46.5
Moderate impact	18	25.4
Very large impact	13	18.3
Extremely large impact	0	0
Total	71	100

covered with clothes such as the abdomen, chest, back, and genitalia. The duration of vitiligo was grouped into suffering from vitiligo for less than 1 year and 1 year and above. Based on the characteristics of the respondents in this study (Table 2), it was found that the number of respondents aged 25 years and over (66.2%) was more than respondents aged under 25 years (33.8%). Based on their marital status, the number of patients who are married (62%) is greater than unmarried patients (38%). The number of workers or students (76.1%) are more than those who do not work (23.9%). In this study, respondents with visible vitiligo locations (63.4%) are found to be more than those with invisible locations (36.6%). Patients suffering

vitiligo for more than 1 year (83.1%) is higher than patients suffering vitiligo less than a year (16.9%).

The distribution of respondents based on the quality of life shows that vitiligo had a little impact on quality of life (46.5%), followed by moderate impact (25.4%) and very large impact (18.3%) (Table 3). Logistic regression result presented in Table 5.

## DISCUSSION

From the Chi-Square analysis, we concluded that there was no significant correlation between age and QoL in vitiligo patients ( $p > 0.05$ ). These findings are consistent with studies conducted by

**Table 4. Correlation Between Age, Sex, Marital Status, Occupation, Location of Vitiligo, and Long-Suffering with QoL in Vitiligo Patients.**

	Quality of life (QoL) in vitiligo patients										p-value
	No Impact		Small Impact		Moderate impact		Very large impact				
	n	%	n	%	n	%	n	%			
Age											
<25 years	2	33.3	11	32.4	9	33.3	2	33.3			0.249
≥25 years	4	66.7	23	67.6	9	66.7	11	66.7			
Sex											
Male	2	33.3	14	41.2	9	33.3	2	33.3			0.294
Female	4	66.7	20	58.8	9	66.7	11	66.7			
Marital status											0.368
Single	2	33.3	11	32.4	10	55.6	4	30.8			
Married	4	66.7	23	67.6	8	44.4	9	69.2			
Occupation											0.032*
Does not work	2	33.3	5	14.7	3	16.7	7	53.8			
Work/student	4	66.7	29	85.3	15	83.3	6	46.2			
Location of vitiligo											0.040*
Visible	1	16.7	18	52.9	16	88.9	10	76.9			
Not visible	5	83.3	16	47.1	2	11.1	3	23.1			
Long-suffering											0.490
<1 year	1	16.7	4	11.8	3	16.7	4	30.8			
≥1 year	5	83.3	30	88.2	15	83.3	9	69.2			

\*Significant if p<0.05

**Table 5. Logistic Regression of Occupation and Location of Vitiligo.**

Variable	Sig.	Exp (B)
Occupation	0.21	0.465
The location of vitiligo	0.03*	0.177

Al-Shammari, et al. (2021), who found that there is no significant correlation between age and quality of life in vitiligo patients. Vitiligo has a social and psychological impact regardless of age group.<sup>9</sup>

In this research, we found that there is no significant correlation between gender and quality of life ( $p > 0.05$ ). Research conducted by Al-Dabbagh (2019) and Silpa-archa, et al. (2020) also stated that there is no significant correlation between gender and QoL in vitiligo patients. According to the previous studies, female vitiligo patients had a higher level of concern for skin health, so they had a greater desire for treatment. A greater impact was found in female patients due to their more emotional and sensitive nature regarding appearance and a potential impact on marital status.<sup>3,10,11</sup>

Based on the data analysis, there is no significant correlation between marital status and QoL in vitiligo patients ( $p > 0.05$ ). This result contradicts the research conducted by Al-Shammari, et al. (2021), who found that there is a

significant correlation between marital status and quality of life in vitiligo patients. The correlation between marital status and quality of life in vitiligo patients remains controversial. Several multivariate studies have shown that marital status does not have a significant relationship with quality of life in vitiligo patients, but several studies have found that there is a significant relationship between marital status and quality of life in vitiligo patients.<sup>10,12</sup>

This study found a significant correlation between work and QoL in vitiligo patients ( $p \leq 0.05$ ). The results of this study are in line with the research of Trivedi, et al. (2017), which stated that there is a significant correlation between work and quality of life in vitiligo patients. A previous study stated that vitiligo patients felt that this disease takes time for regular treatments, causes financial loss, and sacrifices time spent on hobbies and with family.<sup>13</sup>

Based on the data analysis, there is a significant correlation between vitiligo location with the QoL ( $p \leq 0.05$ ). Research

conducted by Bae et al. (2017) and Florez-Pollack (2017) also stated that there was a significant correlation between the location of vitiligo and the quality of life. The location of vitiligo in visible areas makes the patient feel embarrassed and can cause emotions and feelings of disappointment.<sup>12,14</sup>

In this study, we found that there was no significant correlation between long-suffering and QoL in vitiligo patients ( $p > 0.05$ ). This result is also consistent with Jusuf et al. (2017), which found that there is no significant correlation between the length of suffering and the quality of life in vitiligo patients. Vitiligo is a chronic disease that requires long-term treatment with variable responses. Long duration and partial response to therapy trigger stressor resulting in psychological disturbances. Appropriate management for this disease can improve the quality of life in vitiligo patients.<sup>3,15</sup>

The logistic regression in this study divided DLQI into two groups by combining the category of no impact with small impact and moderate impact with a very large impact. Significance value of the occupation variable is 0.21 ( $p > 0.05$ ), so it can be concluded that partially work does not have a significant effect on the quality

of life in vitiligo patients. The Sig. value of the location of the vitiligo variable is 0.03 ( $p \leq 0.05$ ).

The limitation of the study in this research is the short research duration which causes the number of samples to be small. The research instrument we used (DLQI) only provided a broad overview of QoL impairment in vitiligo patients, but did not detect subtle differences in the way patients with vitiligo handled the overall disease burden. Variables in this study can be added, such as education level and response to therapy. Therefore, these should be added in the future researches to see their correlation on quality of life. Some respondents who do not seriously participate in the survey can be a potential bias in this study, so that it can reduce the strength of this research.

## CONCLUSION

Based on the data analysis, there is no significant correlation between age, gender, marital status and long-suffering with quality of life in vitiligo patients, but there is a significant correlation between occupation and location of vitiligo with quality of life in vitiligo patients. From the logistic regression analysis, it can be concluded that partially the location of vitiligo lesions has a significant effect on the quality of life. Vitiligo can affect the patient's quality of life because it has been shown to have a significant impact on social relationships. Counseling is a crucial part of treatment that can be provided to improve the patient's quality of life.

## ETHICS IN PUBLICATION

This research was accepted by.

## AUTHORS CONTRIBUTION

All authors have contributed from data collection, data analysis, reference finding, manuscript preparation, and publication.

## CONFLICT OF INTEREST

None.

## FUNDING

None.

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