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Research Article

Relationship between Vitiligo Disease and Quality of Life of Patients at Sanjiwani Gianyar Regional General Hospital

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ABSTRACT

Background: Vitiligo is an idiopathic skin disorder of acquired depigmentation that burdens patients' lives. This disorder often causes problems that can affect the psychological and social well-being of patients and ultimately affect their quality of life. **Purposes:** This study aims to determine the relationship between vitiligo disease and patients' quality of life at Sanjiwani Gianyar Hospital. **Methods:** This type of research is analytically observational with a cross-sectional approach. Data were collected by filling out the DLQI questionnaire. All data collected was analyzed using univariate and bivariate analysis. The research results are declared significant if the p-value is <0.05 and not significant if the p-value is >0.05. **Results:** The results showed that most vitiligo patients were in the age range of 30-39 years (30%), female (26%), high school education level (28%), unmarried (38%), self-employed and traders (20%), and generalized vitiligo classification (80%). The PR value of 3.33 (95% CI: 1.614-6.879) indicates vitiligo patients have at least a moderate to considerable influence on their quality of life by three times and at most six times. Based on the results of bivariate statistical tests using chi-square, the p-value = 0.000 ($p < 0.05$), which means the result is significant. **Conclusion:** Vitiligo disease is significantly related to patients' quality of life at Sanjiwani Gianyar Regional General Hospital.

Keywords: quality of life, vitiligo

INTRODUCTION

Skin is an essential body organ, which reflects our overall health and life. Most skin diseases affect the patient's life in various aspects, such as physical, emotional and functional aspects. Changes in skin color are one form of abnormality that often occurs when the skin experiences pathological disorders. These color changes can appear reddish (erythema), brownish (hyperpigmentation), hypopigmentation, and depigmentation, namely changes in skin color that appear white (1). Vitiligo is an idiopathic disorder of acquired depigmentation, characterized by the appearance of white, non-scaly and well-demarcated macules with various shapes, due to selective destruction of skin melanocytes (2). The incidence of vitiligo varies from 0.1% to 2% worldwide and can affect all ages, races and genders. Indonesia has around 0.5 – 2.0% of vitiligo cases (3). A study conducted at the Skin and Venereology Polyclinic at

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Sanglah Central General Hospital from 2013 to December 2015 found that the percentage of vitiligo patients was 58.1% in men and 41.9% in women (4).

Gunawan & Rakhmawati (2021) stated that vitiligo therapy takes quite a long time and is complex, between 3 and 24 months (5). NB-UVB therapy has a repigmentation response that is not the same in everyone. Some experience repigmentation after the third therapy, but almost 50% of patients experience repigmentation after the sixth to tenth therapy (6). This causes most vitiligo patients to feel worried and afraid of the disease worsening, have direct limitations in social relationships, feelings of shame and low self-esteem, feel stressed, depressed, and stigmatized by their condition, which ultimately affects the quality of life of vitiligo patients (7). A person's quality and psychosocial stress are low because of an individual's environmental factors. One of them can be found in patients with vitiligo (3). Many vitiligo patients feel distressed and stigmatized by their condition. They attract attention from the general public and sometimes whisper comments, antagonism and ostracism. The image of vitiligo patients drops considerably and may lead to depression. These patients often develop negative feelings about it, which are reinforced by their experiences over a number of years. Most patients of vitiligo report feelings of embarrassment. Particularly in teenagers, mood disturbances including irritability and depression are common. Sometimes, strangers and even close friends can make extremely hurtful and humiliating comments. And it has the possibility of causing severe depression (8).

Several previous studies that linked vitiligo to the quality of life of patients gave varying results. Research by Masykurin (2021) shows that there is a significant relationship between vitiligo and quality of life (p = 0.007) (3). David R, et al. (2024) shows that the patient in their study who has vitiligo with more than 5% BSA affected had higher mean in VitiQoL scores. It causes vitiligo on the face or greater than 5% BSA affected relation with their inability performance in daily activities (p=0.029) (9). The study who conducted by Moraled, et al. (2017) has similar result with study from Masykurin and David. The result shows the impact of vitiligo on quality of life was slightly significant in their cohort study (p=<0.001) (10). Romadhona (2019) reported that there was no significant relationship between vitiligo and the quality of life of patients based on the degree of severity (p > 0.05) (8). Handelia, et al. (2022) explain there is no correlation between vitiligo and quality of life based on gender (P<0.05) (12). It has similar with the study by Al-Dabbagh (2019) and Silpa-arca, et al. (2020). There is controversy regarding the discrepancy between research results regarding vitiligo and quality of life based on variety like gender, location of vitiligo and the degree of severity. Beside there are not many studies have reported on the characteristics of vitiligo patients based on age, gender, education level, marital status, occupation, and vitiligo classification. Information about these characteristics is important to explain how the distribution of vitiligo patients varies based on these characteristics. So to further ensure the strength of the relationship between vitiligo and the quality of life of patients, it is deemed necessary to conduct conclusive research on the relationship between vitiligo and the quality of life of patients based on age, gender, education level, marital status, occupation and vitiligo classification, especially at Sanjiwani Hospital, Gianyar.

Several vitiligo patients from various districts in Bali Province routinely undergo vitiligo treatment at Sanjiwani Gianyar Regional Hospital because phototherapy facilities are available for vitiligo patients. Based on registration data obtained from Sanjiwani Gianyar Regional Hospital, the number of vitiligo patients who routinely underwent phototherapy in 2020 was 45; this number increased in 2021 to 59 patients. Until now, there has been no research regarding the relationship between vitiligo and the quality of life of patients at Sanjiwani Hospital, Gianyar. Therefore, the author considers it necessary to carry out this research to provide a more comprehensive view of the patient's condition so that it can be used to determine specific and optimal therapy.

METHODS

This research uses an analytical observational research design with a cross-sectional approach. The research was conducted from July to September 2023 at the Skin and Venereology Polyclinic at Sanjiwani Hospital, Gianyar. The samples for this study were patients who came for treatment at the Skin and Venereology Polyclinic at Sanjiwani General Hospital Gianyar for the period July to September 2023. Sampling was carried out using a consecutive sampling technique, namely taking 50 patients who visited the Polyclinic who met the inclusion and exclusion criteria. Inclusion criteria were patients aged 20-39 years old and above confirmation diagnosis with vitiligo and non vitiligo confirmed by dermatologist at Skin and Venereology Polyclinic at Sanjiwani General Hospital Gianyar. The exclusion criteria are refused to participate and not cooperative in answering the dermatology life quality index questionnaire.

The data is primary data that will be obtained by filling in the DLQI/ Dermatology Life Quality Index questionnaire for patients who come for treatment at the Skin and Venereology Polyclinic at Sanjiwani Hospital, Gianyar. 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. The higher the DLQI value indicates, the greater the impact of vitiligo on the QoL (Table 1). All data collected was analyzed using univariate and bivariate analysis. Univariate analysis is used to describe and analyze the characteristics of research subjects in the form of percentages and frequency distribution. Bivariate analysis was used with the Chi-square ($\chi 2$) test method to identify the relationship between vitiligo disease and the quality of life of patients at Sanjiwani Hospital, Gianyar. The research results are declared significant if the p value is <0.05 and declared not significant if the p value is >0.05. We confirm that the research has been approved by the Health Research Ethics Committee of Sanjiwani Gianyar Regional General Hospital with reference number: 72/PEPK/VII/2023.

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

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RESULTS

This study was conducted at the Skin and Gender Polyclinic of Sanjiwani Gianyar Hospital from July 2023 to September 2023. The research data were collected using questionnaires to respondents who met the inclusion criteria, namely vitiligo and non-vitiligo patients aged 20-39 years and willing to become research respondents. The number of respondents involved in this study was 50, consisting of 25 vitiligo groups and 25 non-vitiligo groups. The results of the research obtained are as follows.

Table 2. Characteristics of Vitiligo Patients

Characteristics	Vitiligo	
	Yes	No
Age		
20-29 years	10 (20%)	9 (18%)
30-39 years	15 (30%)	16 (32%)
Gender		
Woman	13 (26%)	11 (22%)
Man	12 (24%)	14 (28%)
Level of Education		
No school	0 (0%)	0 (0%)
Elementary school	2 (4%)	1 (2%)
Junior high school	2 (4%)	1 (2%)
Senior high school	14 (28%)	8 (16%)
College	7 (14%)	15 (30%)
Marital Status		
Unmarried	19 (38%)	7 (14%)
Married	6 (12%)	18 (36%)
Occupational		
Self-employed	5 (10%)	2 (4%)
Private employees	3 (6%)	7 (14%)
Government employees	4 (8%)	7 (14%)
Farmer	1 (2%)	1 (2%)
Housewife	1 (2%)	1 (2%)
Trader	5 (10%)	3 (6%)
Laborer	2 (4%)	1 (2%)
Student	3 (6%)	3 (6%)

The results in Table 2 show that the most vitiligo and non-vitiligo age groups are in the same range, namely 30-39 years, respectively, 15 people (30%) and 16 people (32%). In the vitiligo group, there were 13 women (26%) and 12 men (24%). Meanwhile, 11 women (22%) and 14 men (28%) were in the non-vitiligo group. The highest number of respondents in the education level category in the vitiligo group was high school level, 14 people (28%) and the lowest number of respondents was elementary and middle school level, two people each (4%). Meanwhile, in the non-vitiligo group, the largest number of respondents was at the tertiary level, 15 people (30%). The lowest number was at the elementary and middle school level, one person each (2%). There were no patients who had no education.

Most respondents in the vitiligo group were unmarried, namely 19 people (38%) and six respondents who were married (12%). Meanwhile, in the non-vitiligo group, most respondents were married, namely 18 people (36%) and unmarried respondents were seven people (14%). Most respondents in the vitiligo group worked as entrepreneurs and traders, five people each

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(10%). In the non-vitiligo group, most respondents worked as private employees and civil servants, namely seven people each (14%), followed by traders and students with three people each (6%), entrepreneurs with two people (4%).

Table 3. Frequency Distribution Based on Vitiligo Classification

Vitiligo Classification	Frequency	Proportion (%)
Generalized	20	80
Localized	5	20

Based on Table 3 above, vitiligo respondents with generalized vitiligo type had the highest frequency of 80%, totaling 20 people. On the other hand, vitiligo respondents with localized type were fewer, namely five people (20%).

Table 4. Analysis of the Relationship between Vitiligo Disease and Patients Quality of Life Before Combining Categories

Vitiligo (n=50)	Quality of Life					
	No influence n (%)	Small influence n (%)	Moderate influence n (%)	Large influence n (%)	Very large influence n (%)	*p*
No	3 (6)	16 (32)	3 (6)	3 (6)	0	0.000
Yes	2 (4)	3 (6)	3 (6)	17 (34)	0	
Total	5 (10)	19 (38)	6 (12)	20 (40)	0	

Based on Table 4 above, the statistical tests with SPSS obtained results that did not meet the requirements of the chi-square test. Bivariate analysis using the chi-square test does not allow each cell's expected or expected frequency to have a value <5. Because of these limitations in the chi-square test at this stage, one alternative that can be done is merging several categories to increase the expected frequency of these cells (9). After combining the categories, the chi-square test was repeated, and the following results were obtained.

Table 5. Analysis of the Relationship between Vitiligo Disease and Patients Quality of Life after Combining Categories

Vitiligo (n=50)	Quality of Life		PR	95% CI	*p*
	Moderate – very large influence (n=26)	No influence – small influence (n=24)			
Yes	20 (40%)	5 (10%)	3.33	(1.615-6.879)	0.000
No	6 12%)	19 (38%)			

Data in Table 5 shows the distribution of respondents based on quality of life (QoL), showing that vitiligo had a moderate to significant influence in the vitiligo group, as many as 20 people (40%), while in the non-vitiligo group, as many as six people (12%). The prevalence ratio (PR) was used to analyze how much the risk of vitiligo patients significantly influenced their quality of life. The PR value = 3.33 means that vitiligo patients have about three times higher risk of moderate to huge influence on their quality of life. The PR value of 3.33 (95% CI: 1.614-6.879) indicates vitiligo patients have at least a moderate to considerable influence on their quality of life by three times and at most six times. Based on the results of bivariate statistical tests using chi-square, the p-value = 0.000 ($p < 0.05$) indicated the QOLs of the two groups after combining categories were significant. It can be concluded that there is a relationship between vitiligo disease and patients' quality of life at Sanjiwani Gianyar Hospital.

DISCUSSION

Vitiligo is a skin disorder due to the progressive loss of melanocytes, which is clinically characterized by the appearance of well-defined depigmented patches (10). Most vitiligo patients feel worried and afraid of the worsening of the disease and have limited direct social relationships, feelings of shame, and low self-esteem. Stressed, depressed, and stigmatized by their condition, which ultimately affects the quality of life of vitiligo patients (7).

Based on research that has been conducted related to gender, in the vitiligo group who are more dominant in patients from vitiligo are women, as many as 13 people (52%), and men as many as 12 people (48%). The research of (11) obtained similar results. From 10 vitiligo patients, 9 were women (90%) and one man (10%). The total number of female patients visits is determined by research conducted at Mangusada Badung Hospital, which states that vitiligo can appear equally in both women and men. Still, the cosmetic impact of this disease lesion makes female patients have a greater tendency to seek treatment than male patients (12). According to Saiboo *et al* (2022), women tend to pay more attention to changes in their skin pigmentation, especially when vitiligo lesions appear on the face (13). Another similar study conducted at Dr. Hasan Sadikin Hospital Bandung found female dominance due to higher cosmetic concerns in women. At the same time, men are considered breadwinners in society, and they must work every day, so they do not have time to treat vitiligo (14).

Based on the results of the research that has been done, in the vitiligo group, there are more unmarried respondents, namely 19 people (76%), compared to married respondents, as many as six people (24%). This result is in line with previous research, which reports that vitiligo patients who are unmarried or do not have a life partner will feel embarrassed to meet new people when going for treatment at the hospital (15). Whereas, vitiligo patients who are generally married and have a life partner prioritize healing compared to feeling embarrassed when meeting new people in the hospital during treatment. The results of another study in Saudi Arabia with 234 patients showed that 46.2% were married and 53.8% were not. Among those who were unmarried, 41% thought that vitiligo was not why they were not (16). However, research in India states that even after marriage, patients with vitiligo will continue to influence personal relationships with in-laws, cause sexual discomfort, and cause divorce (17).

Based on the research that has been done, of the 25 vitiligo people, the highest frequency is in the generalized type, which is 80% in line with the results of research by Chauhan *et al* (2020), obtained generalized type (56.7%), localized type (27.3%), and acrofacial type (6.4%) (18). It is possible that patients who initially have focal vitiligo can develop into a generalized type and involve a wider body, especially in areas prone to trauma and friction. These more extensive lesions cause patients to feel their appearance tends to be poor overall, so patients seek treatment (23).

Based on the chi-square analysis test results in this study, a p-value = 0.000 was obtained, which means a significant relationship exists between vitiligo disease and patients quality of life at Sanjiwani Gianyar Hospital. Based on the reality in the field after the research, PR = 3.33 was obtained, which means that vitiligo patients have about three times the risk of having a moderate to very large influence on quality of life compared to non-vitiligo patients. The result of QoL show two groups in combination categories with moderate to very large influence and no influence-small influence. The moderate to very large influence on QoL means the people with vitiligo have a higher possibility of disturbing their QoL compared with no influence until small influence. In the study's results Masykurin *et al* (2021), a statistically significant relationship was found between vitiligo and quality of life (p=0.007) (3). David R, et al. (2024) shows that the patient in their study who has vitiligo with more than 5% BSA affected had higher mean in VitiQoL scores. It causes vitiligo on the face or greater than 5% BSA affected relation with their inability performance in daily activities (P=0.029) (9). The study who conducted by Moraled , et al. (2017) has similar result with study from Masykurin and David. The result shows the impact of vitiligo on quality of life was slightly significant in their cohort study (p=<0.001) (10). Vitiligo patients tend to have excessive anxiety with the possibility of the spread of lesions in other parts of the body. In addition, vitiligo lesions, especially on visible parts of the body such as the face and neck, can reduce patients' self-confidence so that patients are more closed in social interactions and impact social activities and daily routines (24).

The low quality of life of vitiligo patients is caused by the impact on daily life, one of which is the sexual life of patients. The results of research by Liang *et al* (2023) show that vitiligo patients have a greater risk of experiencing sexual dysfunction, especially in female patients (21). This is caused by shyness and low self-esteem of the patients towards their partner, so it has an impact on the sexual desire and satisfaction of the patients.

Certain groups of vitiligo patients, such as women, unmarried people with lesions on the face and neck, and patients with a disease duration of less than five years, are at a greater risk of experiencing low social acceptance (22). This impacts the patients efforts to cover the lesions, especially on visible body parts, such as clothing and camouflage in the lesion area (23).

Marty *et al* (2024) reported that 75% of vitiligo patients find their condition intolerable. The effect on quality of life is related to psychological problems, such as lack of self-confidence, unpleasant body appearance, limited social relationships, and lower quality of marital relationships (24). It can end up with depression (3). This is supported by the research of Thompson *et al* (2023), which states that people with vitiligo have a significantly higher risk of depression, or depressive symptoms compared to those without depigmentation disease (25).

From the explanation above, a multidisciplinary approach between dermatologists, psychiatrists, and related specialized personnel plays a vital role in detecting patients' quality of life early to prevent the development of mild conditions into severe psychiatric disorders. This approach is helpful in avoiding depression and improving the patients' ability to use coping mechanisms to improve their quality of life (20).

CONCLUSION

Vitiligo disease has a significant relationship with patients' quality of life at Sanjiwani Gianyar Hospital with a p-value = 0.000 ($p < 0.05$); RP = 3.33; 95% CI = 1.614-6.879. Vitiligo can affect the patient's quality of life because it has been shown to impact social relationships significantly. Counseling is a crucial part of treatment that can be provided to improve the patient's quality of life. The limitation of this research study is the short research duration, which causes the sample size 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 how patients with vitiligo handled the overall disease burden. Variables in this study can be added, such as therapy and responses to treatment. Therefore, these should be added in future research to see their correlation to quality of life.

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CONFLICT OF INTEREST

The authors declare that they do not have a conflict of interest, affiliations, or relationships with any organization or entity that could raise biased questions or statements in the discussion and conclusion sections of the paper.

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