ORIGINAL ARTICLE

Assessment of quality of life and depression in generalized and localized vitiligo patients

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Abstract

Background: Vitiligo is an acquired, chronic, depigmented skin condition characterized by white patches or macules. Globally, the reported prevalence of vitiligo ranges from 0.1 to more than 8%. *Aim and Objectives:* This study aimed to evaluate and compare the difference in the Quality of Life (QoL) and depression between generalized and localized vitiligo. *Material and Methods:* A cross-sectional study was conducted at the Rajiv Gandhi Institute of Medical Sciences (RIMS), Andhra Pradesh, India. The study was conducted from November 2020 to December 2021. The quality of life and depression were assessed using the Dermatology Life Quality Index (DLQI) and Hamilton Depression Rating Scale (HAM-D), respectively. The SPSS software was used to perform the data analysis. *Results:* A total of 200 patients were included in the study, of which 84 had generalized vitiligo, and 116 had localized vitiligo. In generalized vitiligo, 24 (12%) patients had an extremely large effect, and 17 (8.5%) had a very large effect on the QoL. Whereas in localized vitiligo, 16 (8%) patients had an extremely large effect, and 13 (6.5%) had a very large effect on the QoL. Very severe depression was observed in 15.5% of patients with generalized vitiligo and 1.5% in localized vitiligo patients. Insomnia and feeling of guilt were the predominant depressive symptoms observed among generalized and localized vitiligo patients. *Conclusion:* Impairment of quality of life and depression were experienced by both types of vitiligo patients. Therefore, dermatologists may consider psychological interventions to reduce depressive symptoms and improve the quality of life in this population.

Keywords: Depression, Quality of life, Vitiligo

Introduction

Vitiligo is a dermatological condition characterized by loss of pigment, which appears as white macules and patches on the skin. The extent of involvement is hugely diverse, from focal to generalized, and the onset might start promptly or progressively [1]. It can develop at any age, and both genders are equally affected. In India, vitiligo prevalence often ranges between 0.09-8% [2]. Vitiligo is categorized into generalized or localized forms by the distribution and degree of lesions. The localized form is further classified as focal, segmental, or unilateral, and mucosal, while the generalized type is classified as acrofacial, vulgaris, and universal. The 'mixed form' can be defined as an overlap between different forms [3]. Numerous mechanisms are involved in the pathogenesis of vitiligo. Among them, oxidative stress is a popularly accepted mechanism that plays a substantial role in losing melanocytes. Increased production of Reactive Oxygen Species

(ROS) results in ROS-mediated chemotactic signals that promote innate and adaptive immune cell activities in the lesional areas of vitiligo [4].

Skin color is a component of a body's image and may reduce a patient's self-esteem if pathological changes happen [5]. Vitiligo patients often suffer from significant stigma caused by a disfigured appearance. Stigma is thought to be more among young unmarried females; besides, they face difficulties arranging their marriage. Vitiligo greatly impacts patients' lives, and many patients experience humiliation and embarrassment, low self-esteem, and social withdrawal [6-9]. This ultimately affects the day-to-day relationships with friends and relatives, and patients may go into hiding. Lesions on visible areas, especially on the face, may cause more embarrassment and frustration than other body parts [10]. Vitiligo is considered as a punishment of God due to sins in many parts of the world, including India. According to reports, approximately 75% of vitiligo patients suffer from psychiatric morbidities [11]. A meta-analysis study reported that depression was 4.96 times more likely than controls [12]. Anxiety, depression, obsessive-compulsive disorder, and suicidal ideation are some of the psychological problems experienced by vitiligo patients [13]. In India, few studies have been conducted on the quality of life and depression in vitiligo patients. Therefore, this study aimed to assess and compare the quality of life and depression among generalized and localized vitiligo patients. The findings may also help plan appropriate interventions for vitiligo patients, such as psychosocial counseling or behavioral therapy, depending on their severity.

Material and Methods

Study setting and study design

A cross-sectional study was conducted in the Dermatology Outpatient Department (DOPD) of Rajiv Gandhi Institute of Medical Science (RIMS), a tertiary care hospital in Andhra Pradesh, India, from November 2020 to December 2021.

Study participants

The study included patients of both sexes, aged ⩾ 18 years, and diagnosed with vitiligo. Patients with diabetes, thyroid problems, rheumatoid arthritis, psoriasis, pityriasis, leprosy, or other co-morbidities were excluded. All participants were instructed to complete the questionnaires by themselves. A face-to-face interview was conducted with illiterate patients.

Data collection

Three different questionnaires were used to collect data. The first questionnaire included questions related to clinical and demographic parameters. The second questionnaire was the Dermatology Life Quality Index (DLQI) for measuring QoL, and the third was the Hamilton Depression Rating Scale (HAM-D) for assessing depression.

DLQI

DLQI consists of six domains: "symptoms and feelings" (items 1 and 2), "daily activities" (items 3 and 4), "leisure" (items 5 and 6), and "personal relationships" (items 8 and 9), each with a maximum score of 6; "work or study" (item 7) and "treatment" (item 10), all with highest scores of 3. The DLQI is calculated by summing the scores of each item, yielding a minimum of 0 and a maximum of 30. Higher the score, poorer the QoL [14].

HAM-D

We also used a self-administered, 17-item version of the HAM-D for measuring depression. The total score of HAM-D is obtained by summing each item. Scores of 0–7 indicate normal, 8–16 is considered mild depression, 17–23 represent moderate depression, and scores greater than or equal to 24 indicate severe depression with the maximum score being 52 [15].

Ethical statement

Institutional Ethics Committee of RIMS had approved the study protocol (Ref no: RIMS/IEC/2019/12/19). All patients provided their written informed consent before participating in the study.

Sample size

The number of patients required for this study was calculated with the formula, n = z2 p (1-p) / d2 where z= 1.96 for a confidence level of 95%, p= proportion (8%), taken from the previous study [2], d = margin of error. The required sample size was 177. To increase the power of the study, a total of 200 patients were included.

Data analysis

Microsoft Excel and Statistical Package for Social Sciences (SPSS version 21) software were used to analyze the data. For numerical data, frequency, and percentages, and for qualitative data, mean and standard deviation were used. Student's t-test was used to compare the mean between the continuous variables. A value of p less than 0.05 was considered statistically significant.

Results

A total of 200 patients were included in the study, of which 84 had generalized vitiligo and 116 had localized vitiligo. Generalized vitiligo group had 36 males and 48 females, and localized vitiligo group comprised 56 males and 60 females. Mean ± SD of age of the generalized and localized vitiligo patients was 49.53 ± 13.1 years and 47.83 ± 13.8 years, respectively. Mean ± SD of duration of the disease for generalized and localized vitiligo was 8.21 ± 2.9 and 7.50 ± 4.3 years, respectively.

Generalized vitiligo had significantly ($p < 0.05$) lower QoL [(Mean ± SD) DLQI scores (12.2 ± 1.3)] than localized vitiligo [(Mean ± SD) DLQI scores (7.9 ± 1.6)]. Apart from item 4 of the DLQI questionnaire, all other domains of QoL showed significantly higher ($p<0.05$) DLQI scores in generalized vitiligo compared to localized type. Among various domains of QoL, the treatment domain (Item 10) had the highest impact on QoL in both types of vitiligo. The mean DLQI scores of different domains are shown in Table 1. In generalized vitiligo, 12% of patients experienced an extremely large effect, and 8.5% had a very large effect on the QoL. Whereas in localized vitiligo, the proportion of an extremely large effect and a very large effect was experienced by 8% and 6.5% of patients, respectively (Fig. 1).

In our study, the prevalence of depression was 89.5% (n = 179) in vitiligo patients. Severe and very severe depression was observed among 11.5% and 15.5% of generalized vitiligo patients, respectively, whereas the proportion of severe and very severe depression among localized vitiligo patients was 10.5% and 1.5%, respectively. The prevalence of depression based on severity is presented in Table 2. The most common depressive symptoms observed among localized vitiligo patients were feeling of guilt (13%), followed by insomnia (12%), anxiety (7.5%), sexual problems (5%), etc. In generalized vitiligo, the most common depressive symptoms were insomnia (24%), followed by anxiety (10.5%), feeling of

guilt (8%), sexual problems (7.5%), etc. The overall prevalence of depressive symptoms in localized and generalized vitiligo is presented in Table 3.

Table 1: Comparison between localized vitiligo and generalized vitiligo for different items of the DLQI scale

DLQI Items	Mean ± SD		Total	p LV vs. GV
	Localized vitiligo (n=116)	Generalized vitiligo (n= 84)		
Item 1	0.8 ± 1.1	1.4 ± 1.3	1.1 ± 1.2	<0.001**
Item 2	1.1 ± 1.2	1.6 ± 1.3	1.3 ± 1.2	0.001*
Item 3	0.4 ± 0.6	0.7 ± 0.8	0.5 ± 0.7	0.002*
Item 4	0.6 ± 0.7	0.7 ± 0.7	0.6 ± 0.7	0.06
Item 5	0.3 ± 0.6	0.6 ± 0.7	0.5 ± 0.6	0.002*
Item 6	0.4 ± 0.6	0.6 ± 0.7	0.5 ± 0.6	0.006*
Item 7	0.6 ± 0.8	1.0 ± 1.0	0.8 ± 0.9	0.001*
Item 8	1.0 ± 0.9	1.3 ± 1.1	1.1 ± 1.0	0.01*
Item 9	1.2 ± 1.2	1.4 ± 1.3	1.3 ± 1.3	0.09
Item 10	1.5 ± 1.1	1.9 ± 1.0	1.7 ± 1.1	0.003*

*LV-Localized vitiligo; GV-Generalized vitiligo; SD- Standard deviation; *statistically significant; ** highly significant (p⩽ 0.01).*

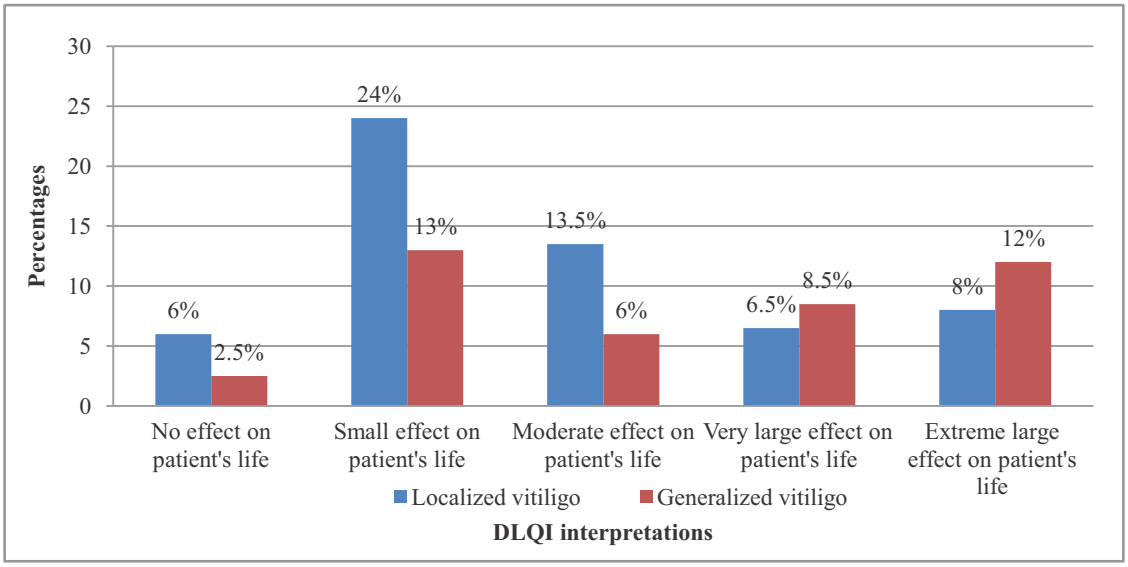

Figure 1: DLQI interpretations in localized and generalized vitiligo

Table 2: Comparison the severity of depression between localized and generalized vitiligo

Severity of depression	Localized vitiligo (n=116)		Generalized vitiligo (n=84)		*p*
	N (%)	Mean (±SD) HAM-D score	N (%)	Mean (±SD) HAM-D score	
Normal	15 (7.5)	4.71±2.39	6 (3)	3.83±1.83	<0.001**
Mild Depression	46 (23)	10.42 ± 1.84	6 (3)	8.83 ± 2.31	
Moderate Depression	31 (15.5)	15.40 ± 1.42	18 (9)	14.94 ± 1.29	
Severe Depression	21 (10.5)	19.65 ± 1.26	23 (11.5)	20.90 ± 1.10	
Very Severe Depression	3 (1.5)	23.33 ± 1.42	31 (15.5)	**32.43 ± 4.76**	

Table 3: Comparison of prevalence of symptoms between localized and generalized vitiligo

Symptoms	Localized vitiligo Number (Percentage)	Generalized vitiligo Number (Percentage)	Total prevalence Number (Percentage)
Insomnia	24 (12%)	48 (24%)	72 (36%)
Feeling of guilt	26 (13%)	16 (8%)	42 (21%)
Anxiety	15 (7.5%)	21 (10.5%)	36 (18%)
Sexual problems	10 (5%)	15 (7.5%)	25 (12.5%)
Suicidal ideation	8 (4%)	13 (6.5%)	21 (10.5%)
Suicidal attempts	0 (0)	6 (3%)	6 (3%)

Discussion

Many skin diseases are common in developing nations, which is one of the most common reasons for seeking medical attention [16]. In our study, patients with more patch extension (Generalized) in vitiligo had lower quality of life than patients with less patch extension (Localized). The probable reason could be the appearance of large numbers of wider patches on visible regions, especially on the face, hands, and feet, which may feel ugly in their overall look and appearance. The feeling of being ugly was also observed among patients with skin diseases such as psoriasis, acne, and alopecia [17]. Similar to our observations, some studies have reported an association between disease extension and QoL impairments in vitiligo [18-19].

Generalized vitiligo patients aged >60 years had a lower QoL, whereas, in localized vitiligo, the age

group of 25-35 years had a lower QoL. However, a previous study by Kota *et al*. reported that patients aged 18-30 had lower QOL [20]. In another study by Karelson *et al*., the average total DLQI score was highest for people aged 40-49 years [21]. Our study found a high mean DLQI score (13.39) in the married generalized group. Females who developed vitiligo after marriage may experience marital issues that may end in divorce. Young women suffering from vitiligo may be considered unclean and unsuitable for marriage and have a small chance of marriage [22].

Depression is a highly distressing mental health condition characterized by persistent low mood, negative thoughts (feelings of worthlessness), and behavioral changes (such as trouble sleeping, decreased appetite, and a sex drive). It is also a leading cause of suicide and self-harm [23]. Our findings revealed that the prevalence of severe and very severe depression was higher in the generalized group than in the localized group. In our study, the prevalence of depression was 89.5%. This rate was higher than other Indian studies that measured depression in vitiligo [20, 24]. Patients of both types of vitiligo experienced insomnia, feelings of guilt, anxiety, sexual problems, suicidal ideations, and attempts as depressive symptoms. The rate of suicidal ideation was higher in generalized vitiligo than in localized vitiligo. In our study, the prevalence of suicidal ideation was 10.5%.

A recent systematic review reported that the prevalence of suicidal ideation ranged from 6% to 25% among vitiligo patients [25]. In our study, the overall prevalence of anxiety was 18%. On the contrary, a low prevalence of anxiety (8%) was reported in a study by Karia *et al*. [26]. However, a high prevalence (78%) of moderate to severe anxiety was observed in a study conducted by Naseer *et al.* [27].

In our study, 13% of vitiligo patients had sexual problems, which was greater (7.5%) in generalized vitiligo than in localized form. Sexual response and sexual interest are primarily psychological and susceptible to anxiety and depression [28]. About 5.5% of people with vitiligo reported sexual impairment, according to a research study from India [29]. In another study from Saudi Arabia, 53.2% of vitiligo patients reported having sexual dysfunction, which was much higher than our study's findings [30].

Limitations

The major limitations of the study were lack of a healthy control group to compare the result; conducted at a single center, which does not reflect all cases of vitiligo in other countries; and patients included were more than 18 years of age groups, so the study results may not be applicable to children and adolescents.

Conclusion

The quality of life is significantly impaired in patients with vitiligo and depression was also found to be prevalent in this population. In order to improve patients' condition, a holistic approach that incorporates psychological interventions, counseling, and effective therapy is recommended.

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