

Assessment and Comparison of Quality of Life in Patients with Melasma and Vitiligo

Amatya B,¹ Pokhrel DB²

¹Department of Dermatology and Venereology
Nepal Medical College Teaching Hospital,
Jorpati, Kathmandu.

²Department of Dermatology and Venereology
Institute of Medicine, Maharajgunj Medical Campus,
Tribhuvan University Teaching Hospital, Kathmandu.

Corresponding Author

Bibush Amatya
Department of Dermatology and Venereology
Nepal Medical College Teaching Hospital,
Jorpati, Kathmandu.
E-mail: bibush.amatya@nmcth.edu

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ABSTRACT

Background

Melasma is an acquired hyperpigmentary condition that is characterized by development of irregular brown to black macules occurring predominantly on the face. Vitiligo is an acquired depigmenting skin disease characterized by progressive loss of inherited skin colour, which leads to appearance of white patches. Both the conditions occur more frequently in people with racially pigmented skin resulting in psychological morbidities and impacting the quality of life.

Objective

To evaluate and compare the quality of life in patients suffering from melasma or vitiligo, which represent two opposite ends of pigmentary disorders using the Dermatology Life Quality Index (DLQI).

Method

This was a hospital based cross sectional study that was conducted at the Department of Dermatology and Venereology, Tribhuvan University Teaching Hospital from September 2016 to August 2017. The study population included adult patients of either sex with melasma or vitiligo, who consented to participate in the study.

Result

There were a total of 100 patients each in both melasma and vitiligo groups. While females outnumbered their male counterparts by a ratio of 9:1 in melasma, the gender distribution was more equal in vitiligo. Melasma had a mean DLQI score of 5.64 ± 5.41 and a median score of 4 while vitiligo had a mean DLQI score of 4.13 ± 3.74 and a median score of 3.

Conclusion

Melasma patients had a higher impairment in quality of life compared to vitiligo patients. The quality of life in both the conditions varied based on age, gender, duration and distribution.

KEY WORDS

Comparison, Dermatology Life Quality Index, Melasma, Quality of Life, Vitiligo

INTRODUCTION

Melasma is an acquired condition of the skin, characterized by the development of brown to black macules on sun-exposed areas of the body, particularly the face.¹ Melasma can have a profound impact on the quality of life of the affected individuals.² Studies on melasma induced quality of life impairment show DLQI scores ranging from 4 to 7 in patients with melasma indicating a mild to moderate effect on quality of life.^{2,3}

Vitiligo is a disorder characterized by the appearance of asymptomatic white lesions on the skin.⁴ It can appear anywhere on the skin but the genitals, face and hands are the predisposed sites. Vitiligo can result in poor body image leading to low self esteem, difficulties in interpersonal relationships, social isolation and stigmatization.^{5,6} The DLQI scores in vitiligo patients have ranged from 1 to 10 indicating moderate effect on quality of life.⁵⁻⁷

Both melasma and vitiligo are common skin conditions in Nepal and can be thought of as two extremes of a colour spectrum regarding pigmentary disorders. Melasma on one hand is symbolic of darkening of face while vitiligo on the other hand represents loss of normal skin colour. A review of the literature revealed a dearth of studies comparing quality of life impairment in these two conditions. The study was conducted to reveal whether abnormal darkening or lightening of the skin is associated with greater quality of life impairment in our population.

METHODS

This was a quantitative cross sectional study. The study population comprised of patients with melasma or vitiligo attending the outpatient department of Dermatology and Venereology, Tribhuvan University Teaching Hospital, Maharajgunj, Kathmandu, Nepal. The approval for this study was issued by the Institutional Review Board of Tribhuvan University Teaching Hospital with the number 104(6-11-E)2/073/074 and the study was conducted from September 1, 2016 to April 30, 2017.

Non-probability purposive sampling technique was employed and the sample size was calculated based on prevalence of 6.8% with 95% confidence interval.⁸

All consenting patients clinically diagnosed with melasma or vitiligo of either gender and above 16 years of age were included as participants. Patients having systemic cause of hyperpigmentation, taking drugs causing hyperpigmentation, having severe psychiatric or systemic illness and non-consenting patients were excluded from the study.

All the patients with melasma or vitiligo who consented to participate in the study had a printed melasma or vitiligo proforma filled depending on the condition. They were then asked to fill the printed validated DLQI in Nepali.

The data were then manually uploaded into a secure database using SPSS Ver. 16.0. Descriptive statistics were used to describe the frequency, mean, standard deviation with 95% confidence interval of DLQI. Level of significance was set at 5% ($p \leq 0.05$) and power was set at 80%. Mann-Whitney U Tests and Kruskal-Wallis H tests were applied and calculated where appropriate.

RESULTS

A total of 200 patients (100 melasma and 100 vitiligo) were included in the study. The age of melasma patients ranged from 18 to 49 years. The mean age was 29.35 ± 6.39 years. The majority of the patients with melasma were housewives (42%) while 22% were involved in service and 20% were students. More than 50% of the patients (51) had their onset of melasma within the last one year. Three patients had their condition for more than 10 years.

The four sites affected were malar region (93%), forehead (65%), bridge of the nose (45%) and chin (21%). Twenty eight participants had a single site affected while remaining patients had more than one area involved. The malar regions were the most affected sites with 22 patients having melasma only in the malar region. The chin was the least affected site and was never the sole site affected.

The mean DLQI score for melasma was 5.64 ± 5.41 (range 0-19) while the median score was 4. Of these, 23 patients had a DLQI score of 10 or more indicating a moderate effect on the patient's life due to melasma while an equal number had a DLQI score of 0 indicating no impairment in quality of life. The mean DLQI score for males (7.09 ± 7.04) was higher than for females (5.46 ± 5.20). The difference was not however, statistically significant ($p = 0.645$) using the Mann-Whitney U test. DLQI was also higher in younger population but the difference was not significant ($p=0.084$) using Kruskal-Wallis H test (table 1). Question number 2, which asked about embarrassment and self-consciousness because of the skin condition, had the highest mean DLQI score of 1.81 ± 1.25 . On the other hand, question number 7 and 9 asking about the skin condition causing any difficulty in sports or sexual activity respectively had the lowest scores (0.03 and 0.05).

Table 1. Melasma DLQI scores in different age groups

Age group (years)	Number of patients	DLQI	Standard deviation
16-25	28	7.64	5.566
26-35	52	4.75	5.272
36-45	18	5.39	5.226
46-55	2	3.00	4.243
Total	100	5.64	5.417

The age of vitiligo patients ranged from 16 to 70 years. The mean age was 29.96 ± 12.89 years. The majority of the patients with vitiligo were students (51%) while 19% were

servicemen/women and other 19% housewives. More than 50% of the patients (62%) had their onset of vitiligo within the last one year. Most of the patients (41%) had their vitiligo for less than six months and only five patients had their condition for more than 10 years. There was wide variation according to type of vitiligo (table 2) and body surface area involvement, which ranged from less than 1% to more than 70%. The vitiligo lesions had a varied distribution. A total of 30 patients had vitiligo lesions only on head/neck region while a further 25 patients had involvement of the head/neck region with additional involvement of other areas. Fifteen patients had involvement of their genitals.

Table 2. Type of vitiligo with DLQI scores

Type	Number of patients	Mean DLQI
Focal	67	3.21 ± 3.18
Segmental	6	6.83 ± 5.78
Generalized	3	5.92 ± 3.07
Acrofacial	11	4.91 ± 4.18
Universal	3	8.67 ± 4.93
Total	100	

The overall mean ± SD DLQI score for vitiligo was 4.13 ± 3.74 (range 0-17) while the median score was 3. Of these, 10 patients had a DLQI score of 10 or more while 20 patients had a DLQI score of 0. The mean DLQI score for males (4.27 ± 3.95) was higher than for females (3.98 ± 3.52). The difference was not however, statistically significant (p = 0.870) using Mann-Whitney U test. Question number 2 had the highest mean DLQI score of 1.81 ± 1.17. On the other hand, question number 1 asking about symptomatology and question number 7 scored the lowest scores (0.02 and 0). The DLQI scores varied among the different patients based on their occupation. Unemployed patients had the highest DLQI scores (6.00 ± 8.49) while they were lowest among servicemen/women (3.89 ± 3.86) and housewives (3.95 ± 3.95). There were significant differences in the DLQI scores based on type of vitiligo (table 2) and body surface area involvement (fig. 1). The DLQI was proportional to body surface area involvement except for one participant whose body surface area involvement was 50% but the DLQI score was only 3. DLQI scores also varied according to the distribution of the lesions. The most frequent DLQI score was 4.93 ± 3.28. This was observed in 30 patients who only had involvement of the head/neck. The lowest mean DLQI scores were seen in participants having vitiligo only on the thighs (0), trunk and thighs (0), forearms (1) and trunk (1.29). Participants with involvement of multiple body sites and involvement of visible areas had higher DLQI scores.

The DLQI scores were higher in melasma patients and higher in males for both melasma and vitiligo (fig. 2). There

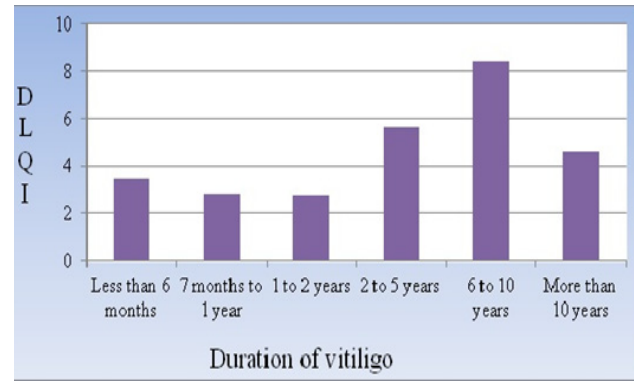


Figure 1. Vitiligo DLQI scores according to duration of disease

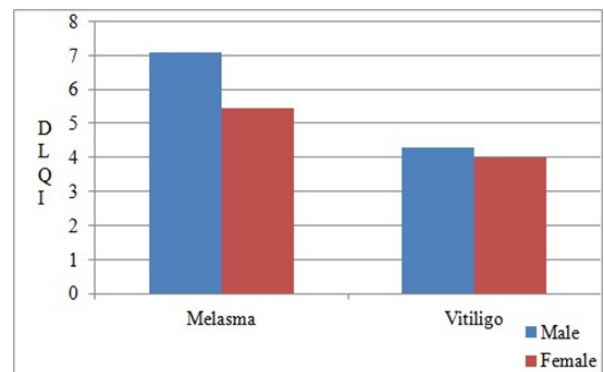


Figure 2. DLQI scores comparison in melasma and vitiligo based on gender

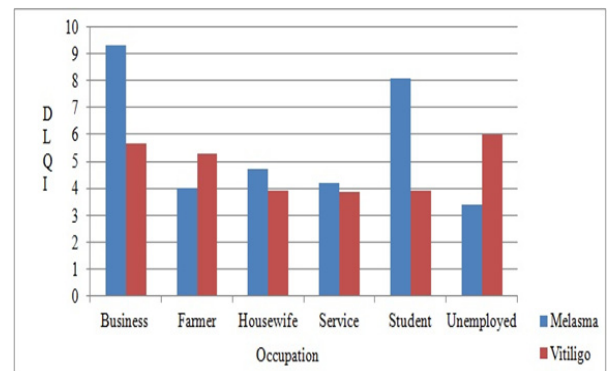


Figure 3. DLQI comparison in melasma and vitiligo patients based on occupation

were major differences in the DLQI scores for melasma and vitiligo based on the occupation of the participants (fig. 3) and duration. While the DLQI scores were consistently higher in melasma patients when they had the condition for shorter durations, the results were reversed when duration exceeded 5 years (fig. 4). The DLQI scores were highest and identical (1.81) for question number two in both melasma and vitiligo patients. The DLQI scores were low for questions 6, 7 and 8. In all these questions, the DLQI score was 0.1 or below for both melasma and vitiligo.

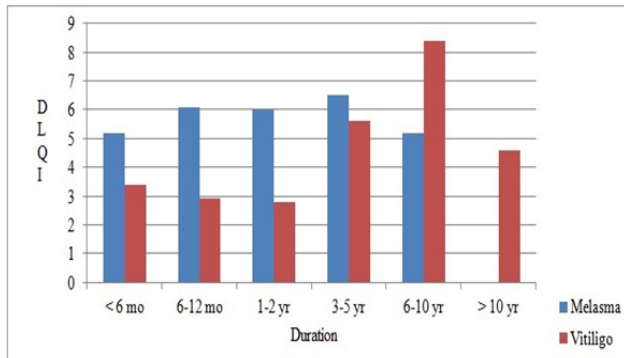


Figure 4. DLQI comparison in melasma and vitiligo based on duration of condition

DISCUSSION

Several skin diseases can affect the patients' quality of life. Asymptomatic dermatological disorders like melasma and vitiligo can also impair the quality of life of patients. This is more apparent in those individuals where the skin lesions are on the exposed areas of the body like face, neck and upper extremities.

Out of 100 patients with melasma, only three patients had their condition for more than 10 years while more than 50% of the patients had their melasma for less than a year. An explanation for this finding in our study could be that people with melasma of long duration have already visited dermatologists in the past, are more accepting of their condition and are less inclined to seek medical treatment.

The DLQI for melasma in our study was 5.64 ± 5.41 . The interpretation of this is a small effect in the quality of life of patients. One of the reasons for the disease not scoring a higher DLQI could be it being an asymptomatic disease, which does not hamper work, study or the ability to play sports. Males had higher quality of life impairment due to melasma compared to their female counterparts. The result is surprising as appearance plays a greater role in quality of life patients in females compared to males.^{9,10} A possible explanation for the lower DLQI for female participants in our study could be the fact that the majority were already married and working as housewives and as such had a lower psychological burden because of their condition.

The DLQI for vitiligo in this study ranged from 0 to 17 with mean of 4.13 ± 3.74 and a median of 3 indicating a mild impairment in quality of life. Seventy percent of patients had less than 1% of the body surface area involvement. This is in stark contrast to a study done in Germany that assessed the role of ultraviolet B phototherapy for vitiligo treatment where the mean percentage of body surface area affected was 30%.¹¹ The higher body surface area in the study done in Germany may be due to selection bias as patients with greater body surface area involvement are subjected to phototherapy.

In concordance with the findings of previous studies, questions about embarrassment and self-consciousness recorded higher scores in both the conditions.¹² As both melasma and vitiligo are asymptomatic, lower scores were recorded in symptom and function related questions.

A distinct finding seen in our study has been the highest DLQI (6.0) in unemployed vitiligo participants. A causal relationship does exist between unemployment and decreased quality of life, which is independent of the health status of the participants. Unemployment in general has been associated with lower self-esteem and higher depressive effects and negative moods.¹³

In our study, a higher DLQI was observed when the lesions were present in more visible areas of the body. This is consistent with the findings of Silverberg and Silverberg and Ingordo et al. who have proposed that lesions occurring on the face, arms, hands, legs and feet are associated with higher self-consciousness.^{7,14} This could be a reason for the higher DLQI scores in melasma compared to vitiligo. A more accurate comparison of DLQI between melasma and vitiligo would have been possible if only participants with vitiligo lesions on exposed sites had been included in the study.

As the study was carried out using the standard Nepali version of the DLQI, the ninth question asking about sexual difficulty is not applicable to most of our population. Therefore, there is need for an alternate validated and modified quality of life questionnaire appropriate for our population.

Since the study was done in a tertiary centre, the impact on quality of life may have been overestimated. A larger population based survey will help to identify accurately the impact of these two conditions in the general population. An overestimation of DLQI in melasma patients could be due to greater visibility of the lesions. A more appropriate comparison group for melasma related quality of life impairment would involve participants having vitiligo lesions only involving the face.

CONCLUSION

At the moment, very few clinicians formally assess the quality of life in their patients. This study places emphasis on the need of the treating physicians to pay attention to the impact melasma and vitiligo has on the patients' quality of life, and the need to raise public awareness about the two conditions. The physician can then provide appropriate informational care on the disease, its prognosis and treatment options to the patients. Appropriate attention, time and resources should be allocated to the care and management of patients suffering from melasma or vitiligo.

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