

To Determine the Impact of Melasma on Quality of Life (QoL) Using Dermatology Life Quality Index (DLQI) in our Patients

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Abstract:

Objectives: To determine the impact of melasma on quality of life (QoL) using Dermatology Life Quality Index (DLQI) in our patients.

Patients and methods: An observational study was carried out at the Department of Dermatology, Santosh Hospital, Gaziabad from December 12, 2021 to June 11, 2022. A total of 200 patients suffering from melasma, of any severity, with age 18 years or above, belonging to either sex, who themselves were able to understand and fill the DLQI, were enrolled in the study. Using the DLQI questionnaire, consisting of 10 questions, patients were asked to score on a scale from 0-3 for each of 10 items. The data were analyzed after compiling the results. The higher the DLQI score, the poorer is the QoL.

Results: Mean age of the patients was 29.90±7.18 years. There were 164 (82%) female and 36 (18%) male patients. The mean DLQI score of all patients was 34.90±5.18 years. The findings indicate several areas in which melasma had an impact on individual's QoL, particularly in relation to symptoms and feelings and personal relationships. Women reported poorer QoL compared to men. Mean DLQI score was 16.00±4.93 in males and 17.32±5.28 in females. Patients with mild, moderate and severe disease had mean DLQI scores of 17.23±5.35, 20.32±3.99 and 24.0±2.0, respectively.

Keywords: DLQI, melasma, quality of Life.

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Introduction

From the Greek word "melas," which means black, comes the word "melasma." A common form of acquired hypermelanosis, it is distinguished by uneven brown patches that mostly appear on the forehead, cheeks, and chin in a mask-like pattern. [1,2] Women who are fertile are most frequently afflicted by melasma. [3] Men make up to 10% of cases. Skin types IV through VI of the Fitzpatrick scale are frequently involved. [4,5] The precise cause of melasma as well as statistics on its

prevalence are unknown. [6] Exposure to ultraviolet radiation, genetic predisposition, pregnancy, oral contraceptives, hormone replacement treatment, thyroid autoimmunity, cosmetics components, and phototoxic medications are a few other contributing variables. Ability to carry out everyday tasks suitable to one's age and primary social role is the definition of quality of life (QoL). [7] The position could involve paid work, education, housework, or self-care. The degree of handicap

brought on by skin disorders can be measured using a number of indices that take the form of questionnaires. [7] A ten-item DLQI was used to evaluate the effect of melasma on QoL in our culture. [8] It is a reliable, straightforward, and useful questionnaire made to assess the level of handicap brought on by various skin disorders. [9] Severe facial imperfections like melasma have a negative effect on patients' quality of life because face appearance is crucial for self-perception and social engagement. [10]. The purpose of the current study was to ascertain how melasma affected people's quality of life. In many ways, measuring QoL can help patients receive better care and achieve better results. For example, it might point out the need for supporting or psychiatric intervention, broaden the scope of benefit, and support decision-making and health care policy.

Patients and Methods: It was a survey-based investigation, conducted between December 2021-June 2022, the study was conducted at Santosh hospital, Ghaziabad, Department of Dermatology. With informed consent, a thorough medical history and clinical evaluation of the melasma patient were taken. Age, gender, residence, and melasma area and severity (MASI) score (Table 1) for the evaluation of melasma were recorded as demographic variables. 200 individuals, either male or female older than 18 years with clinically diagnosed melasma (mild, moderate, or severe) and who gave consent to participate in the study were included in the study. Patients diagnosed of having systemic causes of pigmentation, on history and examination, e.g. systemic lupus

erythematosus, Addison's disease, hemochromatosis etc. Patients who had been taking drugs that cause pigmentation e.g. minocycline, chlorpromazine, amiodarone, antimalarials etc. who were suffering from local (facial) dermatoses on clinical examination e.g. ashy dermatosis, lichen pigmentosus, lichen planus actinicus, fixed drug eruption, nevus spilus, nevus of Ota, post-inflammatory hyperpigmentation and photo contact dermatitis etc. were excluded from the study. All the patients were instructed to fill a DLQI questionnaire (Table 2) that included 10 questions covering six different domains of QoL e.g. symptoms and feelings (Q1, 2), daily activities (Q3, 4), leisure activities (Q5, 6), work and schooling (Q 7), personal relationships (Q8, 9) and treatment of disease (Q10). The patients were asked to score, on a scale from 0 to 3, for each of 10 questions, how they felt their lives have been affected by the disease over the preceding week. The response for each question could be 0=not at all, 1=a little, 2=a lot and 3=very much. The total score ranged from 0 to 30. The higher the score, the poorer was the quality of life. The data were entered into SPSS version 11 for analysis. Study variables included age, gender and DLQI scores. Descriptive statistics were used. For quantitative variables like age and DLQI scores, mean and standard deviation were calculated. For qualitative variables like gender, frequency and percentage were calculated. Data were stratified for severity of melasma (MASI score=0-16, 17-32, 33-48) to address effect modifier. The statistical analysis was done and a p value of <0.05 was considered significant.

Table 1: Melasma Area Severity Index (MASI) grading scale

Score	Darkness (D)	Homogeneity (H)	Area (A)
0	Absent	Minimal	No involvement
1	Slight	Slight	<10%
2	Mild	Mild	10-29%
3	Marked	Marked	30-49%
4	Maximum	Maximum	50-69%
5			70-89%
6			90-100%

MASI score= 0.3 (DF + HF) AF + 0.3 (DMR + HMR) AMR + 0.3 (DML + HML) AML + 0.1 (DC + HC) AC

D=darkness, H=homogeneity, A=area, F=forehead, MR=right malar, ML=left malar, C= chin. Values 0.3, 0.3, 0.3 and 0.1 are respective percentage of total facial area.

Table 2: Dermatology Life Quality Index

S. No.	Questions
1	Over the last week, how itchy, sore, painful or stinging has your skin been?
2	Over the last week, how embarrassed or self-conscious have you been because of your skin?
3	Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden?
4	Over the last week, how much has your skin influenced the clothes you wear?
5	Over the last week, how much has your skin affected any social or leisure activities?
6	Over the last week, how much has your skin made it difficult for you to do any sport?
7	Over the last week, has your skin prevented you from working or studying? If "No", over the last week how much has your skin been a problem at work or studying?
8	Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives?
9	Over the last week, how much has your skin caused any sexual difficulties?
10	Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy, or by taking up time?

Each question was scored: very much=3, a lot=2, a little=1, and not at all=0

Results

A total of 200 patients, diagnosed clinically as melasma, were studied. There were 164 (82%) female and 36 (18%) male patients. Mean age of patients was 34.90±5.18 years. 138 (69%) cases were married and 62 (31%) unmarried. According to severity of melasma, there were 150 patients with mild disease having a MASI score from 0-16.9, 44 patients with moderate disease and a MASI score from 17-32.9 and 6 patients had severe disease with a MASI score from 33-48. Patients with a disease duration of less than 6 months were 6, those between 6 months to 2 years 58, 3-5 years 46, 6-10 years 50 and >10 years were 40.

Mean DLQI score of total sample size was 18.08±5.22. Regarding the mean DLQI scores of patients with respect to severity of melasma using MASI score, patients with

mild disease had a mean DLQI score of 17.23±5.35, while values for moderate and severe disease were 20.32±3.99 and 24.0±2.0, respectively. This showed that the mean DLQI score increased with an increase in severity of melasma with a statistically significant p value (0.011) indicating that QoL is more impaired in case of severe disease (Table 3). Comparison of the mean DLQI scores with respect to gender revealed that females had a higher score i.e. 17.32±5.28 than males having a score of 16.00±4.93 (p=0.335). The mean DLQI score was higher in patients suffering from melasma for >10 years (19.95±5.07) while lesser durations had lower values for DLQI such as 6-10 years (18.0±4.80), 3-5 years (18.91±3.95), 6 months to 2 years (14.31±6.15) and < 6 months (15.0±6.0). The comparison of mean DLQI scores between different age

groups was done and no significant difference was seen ($p>0.05$). Unmarried patients had a higher mean DLQI score (18.68 ± 3.62) as compared to the married ones (17.81 ± 5.80). Mean DLQI scores for each of the 10 questions revealed that the

highest score was determined for question No. 2 (2.74 ± 0.39) which is related to feelings of patients followed by question No. 8 (2.92 ± 0.39) related to personal relationships (Figure 1).

Table 3: Profile of the study participants

Gender	N (%)
Female	164 (82%)
Male	36(18%)
Marital status	N (%)
Married	138 (69%)
Unmarried	62 (31%)
Duration of disease	N (%)
less than 6 months	6
6 months to 2 years	58
3-5 years	46
6-10 years	50
>10 years	40

Table 4: Mean DLQI score according to severity of disease (n=100).

Severity of disease	Mean DLQI
Mild	17.23 ± 5.35
Moderate	20.32 ± 3.99
Severe	24.0 ± 2.0
Total sample	18.08 ± 5.22

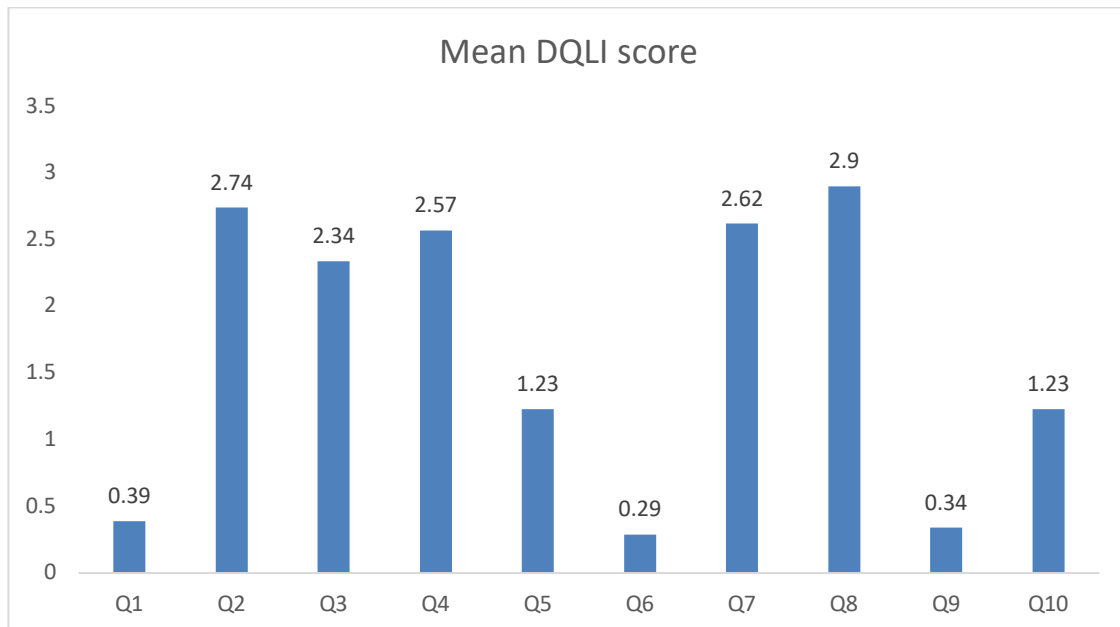


Figure 1: Mean DLQI scores

Discussion

Melasma is a very common skin disease that manifests as symmetrical macules and patches of hyperpigmentation primarily on

the face.[11,12] This chronic and recurrent condition causes a deleterious impact on various domains of patients’ quality of life. In our study, mean age of the patients was

34.90±5.18 years. Various studies revealed the mean age between 36 to 40 years.[11,13,14] This contrast is due to racial, cultural and social variations in different parts of the world. In our study, 20-30 years is the peak age for getting married and this might compel people to report and seek advice earlier about their disease. It was noticed in our study that the QoL was less affected by melasma in patients of age group 46-55 years, in accordance with the results of Farag et al.[11] and Balkrishnan et al.[14] where patients of this age also showed less QoL impairment as compared to other age groups.

Our data showed a female preponderance (82%). It correlates well with the 79.5% females seen in a study from New Delhi, India.[15] This could be attributed to the fact that melasma is more common among women because female hormonal activity is considered one of the most important causative factors. In the present study, the female patients showed a greater impairment of QoL than the male patients, similar findings were noted in the study by Arellano et al.[16] These results indicate that about the melasma, women are more worried, distressed and concerned than men.

The recorded mean DLQI score of 18.08±5.22 is higher than the score found in the study by Farag et al.[11] which is 5.8±3.88. The difference may be explained by the fact that the patients included in the study of Farag et al were Egyptian females who tend to cover their faces with veils and most of them stay at home (housewives). Therefore, they are less exposed to social embarrassment resulting in less effect on their quality of life as compared to our patients. The present study revealed that patients suffering from more severe disease had a higher mean DLQI score, and hence, more impaired QoL. This is supported by the study of Arellano et al.[16] which showed a direct correlation between DLQI score and severity of melasma. A moderate

correlation was also observed in studies performed by Farag et al.[11] and Balkrishnan et al.[14]

In the present study, the patients with melasma for a longer duration of time had a poorer QoL. The finding is consistent with a previous study carried out by Dominguez et al.[17] which demonstrated that QoL is more impaired in cases with long-standing disease. Our study also revealed that singles had a more impaired QoL as compared to the married which is in contrast to the study conducted by Dominguez et al.[17] where no difference was seen in QoL according to marital status. This dissimilarity is due to the cultural differences, as in our society, a person may find it difficult to get married because of melasma.

The most adversely affected domain of QoL in our study was the feelings of patients related to embarrassment and self-consciousness demonstrated by the highest mean DLQI score for question No. 2 (Figure 1). The next highly affected domain was personal relationships of patients forcing them to avoid social interactions with close friends, relatives or partner. In addition, the disease also influenced the choice of clothes that was more pronounced in females. Comparable to our study, emotional well-being was reported to be one of the most adversely affected life domains due to melasma, by Balkrishnan et al.[14]

In view of the present study, it is suggested that for a disfiguring facial dermatosis like melasma that poses a significant negative impact on patient's QoL, there is a need for patient counseling or development of educational programs and appropriate psychological intervention to achieve a comprehensive and efficient management.

Conclusion

Melasma causes a "very large effect" on patients' quality of life (QoL). It was found that impairment of quality of life is greater in females and with severe disease. During daily life, symptoms and feelings followed

by personal relationships are found to be more severely affected in our cases.

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