“EVALUATION OF QUALITY OF LIFE IN PATIENTS WITH MELASMA USING MELASQOL SCALE”

ABSTRACT

Aim: The objective of this study was to assess the quality of life in individuals with Melasma through the utilization of the MELASQOL scale. Additionally, the study aimed to investigate the correlation between the MASI score, duration of the disease, Melasma distribution pattern, and age of onset concerning the MELASQOL scale.

Study design: A prospective cross-sectional study.

Place and Duration of study: Tertiary care hospital, Bengaluru between January 2023 to June 2023

Methodology: A total of 163 participants within the age range of 18 to 65 years, meeting the inclusion criteria, completed the MELASQOL questionnaires, and their corresponding MASI scores were subsequently determined.

Result: In this study with 163 subjects (11.65% male, 88.34% female), Melasma predominantly affected the 26-45 age group. Most subjects had Malar-type Melasma (69.3%), and common predisposing factors included family history (39.8%), 18(12.5%) female subjects having a history of oral contraceptives, and 13(9.02%) female subjects having a history of PCOD/PCOS. The mean MELASQOL was 57.128±11.95, and it was not statistically correlated with the MASI score (P=0.528 ρ= -0.0535) or distribution pattern (P=0.143 ρ= -0.1321). Additionally, there was no significant correlation between age of onset and disease duration (P=0.4606, ρ= -0.066 and P=0.628, ρ= -0.068, respectively.

Conclusion: Melasma profoundly affects patients' quality of life, emphasizing the imperative to address psychological well-being alongside physical symptoms. Implementing the MELASQOL questionnaire and recommending follow-up counseling can enhance the management and overall well-being of melasma patients.

Keywords: Melasma, Quality of Life, MELASQOL, MASI Score

INTRODUCTION

The term "melasma" originates from the Greek root word "melas," denoting a black and brownish clinical manifestation.[1] Melasma, a prevalent dermatological condition, represents a complex and multifactorial pigmentation disorder that primarily affects the skin, most commonly in women of reproductive age. This hyperpigmentation disorder is characterized by symmetrical, brownish patches typically observed on sun-exposed areas, such as the face, forearms, and neck.[2] Despite its benign nature, melasma poses a significant cosmetic concern for affected individuals, impacting their quality of life and psychological well-being.[3]

The etiology of melasma remains intricate and involves a combination of genetic, hormonal, and environmental factors.[4] Hormonal influences, particularly estrogen and progesterone fluctuations, play a pivotal role, with a higher prevalence observed during pregnancy (chloasma) and in women taking oral contraceptives.[5] While men can also experience melasma, the ratio of affected women to men is generally higher.[6] Additionally, exposure to ultraviolet (UV) radiation and the presence of a genetic predisposition further contribute to the development and exacerbation of melasma.[7]

Melasma exhibits three primary clinical patterns based on lesion distribution:

1) Centro facial pattern: Predominantly observed on the forehead, cheeks, upper lip, nose, and chin.
2) Malar pattern: Predominantly observed on the cheeks and nose.
3) Mandibular pattern: Affecting the ramus of the mandible.[8]

Extensive national and international studies have demonstrated the effects of melasma on the quality of life (QoL) and self-esteem of individuals. This study aims to assess the QoL in melasma patients using the MELASQOL scale. Additionally, it seeks to find the correlations between the MASI score, duration of the disease, melasma distribution pattern, age of onset, and the MELASQOL scale.

MATERIALS AND METHOD

Materials

The study was conducted in the outpatient department of dermatology at tertiary care hospital

Study period: 6 months (January 2023 to June 2023)

Study instrument: MELASQOL questionnaire, MASI scoring system

Inclusion criteria

1. Outpatient diagnosed with Melasma
2. Patients between the age group of 18-65 years who are willing to participate in the study

Exclusion criteria

1. Patients below 18 years and above 65 years
2. Patients with other dermatological comorbidities

Methods

Study design

A prospective cross-sectional study focusing on the quality of life (QoL) in patients with melasma. Patient demographic details, family history, past medication/medical history, and details regarding the onset and duration of melasma were collected and recorded. Additionally, the impact of melasma on QoL was assessed using the MELASQOL questionnaire.

Study instrument

The MELASQOL questionnaire is a concise tool comprising 10 questions that delve into three underlying dimensions within the MELASQoL-A structure: Emotional well-being (Q1-Q4), social life (Q5-Q7 + Q10), and recreation and leisure (Q8-Q9). Respondents express their feelings for each question using a scale that ranges from "not bothered at all" to "bothered all the time." The total score spans from 10 to 70, where a higher score indicates a lower quality of life.

Conversely, the MASI (Melasma Area and Severity Index) score, established in 1994, is derived from a subjective evaluation of three factors: area (A) of involvement, darkness (D), and homogeneity (H) of the face. This assessment is performed on specific facial regions, with the forehead (f), right malar region (rm), left malar region (lm), and chin (c) corresponding to 30%, 30%, 30%, and 10% of the total face, respectively. Each area of involvement is assigned a score from 0 to 6, resulting in a total MASI score ranging from 0 to 48. The calculation of the Total MASI score involves the following formula for each facial region: Forehead 0.3 (D+H) A + right malar 0.3 (D+H) A + left malar 0.3 (D+H) A + chin 0.1 (D+H) A.[9]

RESULT

The following results were obtained from this study

Table 1 shows that Among 163 subjects included in the study, 19 (11.65%) were male and 144 (88.34%) were female. Of that, 7 subjects were under the age group of 18-25 age,105 subjects under the age group of 26-5 age, and 51 subjects under the age group of 46-65 age. The highest number of patients affected with Melasma were in the age group of 26-45 years. The highest number of Females affected with Melasma (88.34%) compared to males (11.65%) in this study.

Table 2 shows the distribution pattern of melasma among subjects, in that 113(69.3%) subjects had Malar type of Melasma,47(28.83%) subjects had Centro facial type of melasma, 02(1.22%) subjects had Mandibular type of melasma.

Table 3 shows the predisposing factors for melasma among the study group. In this study, we found 65(39.8%) subjects having a family history of Melasma, 18(12.5%) female subjects having a history of oral contraceptives and 13(9.02%) female subjects having a history of PCOD/PCOS

Table 4 shows the MELASQOL questionnaire and all responses from all the subjects. Mean MELASQOL was found to be 57.128±11.95 (Mean±S.D).

Correlation between MELASQOL with MASI score

In this study, the mean MELASQOL and Mean MASI scores were found to be 57.128±11.98 and 8.086±3.5405(Mean±S.D) respectively. Spearman's correlation was used in SPSS version 23 to correlate between MELASQOL with MASI scores. MELASQOL is not statistically correlated with the MASI score (P= 0.528) the correlation coefficient (ρ) is -0.0535. This shows that a patient's quality of life is independent of its severity.

Correlation between MELASQOL with Melasma distribution pattern

In this study, MELASQOL and melasma distribution patterns (Malar, Centro facial, and mandibular) are not statistically correlated (P= 0.143, the correlation coefficient (ρ) = -0.1321). That shows the quality of life is independent of its distribution pattern.

Correlation between MELASQOL with the age of onset and duration of disease

In this study, the age of onset and duration of disease (P=0.4606, correlation coefficient (ρ)= -0.066) and (P=0.628, correlation coefficient (ρ)= -0.068) respectively. This shows quality of life is independent of Melasma's age of onset and duration.

This Concludes that the impact of Melasma on quality of life is independent of severity, distribution pattern, age of onset, and duration of disease.

Table 1 Age and gender distribution

Age group	Males	Females	Total
18-25 (Young adult)	00	07	07
n= 07	0%	100%	
26-45 (Adult)	09	96	105
n=105	8.57%	91.4%	
46-65 (Middle adult)	10	41	51
n= 51	19.60%	80.39%	
Total	19	144	163
n=163	11.65%	88.34%	

Table 2 Distribution pattern of Melasma among the study group

Distribution type	Male	Female	Total	% Of distribution
Malar	11	102	113	69.3%
Centro facial	7	40	47	28.83%
Mandibular	0	2	2	1.22%

Table 3 Predisposing factors of melasma among the study group

Predisposing factors	Female n=144	Male n=19	Total n=163
Family history of Melasma	59	06	65(39.8%)
History of Oral contraceptives	18	---	18(12.5%)
History of PCOD/PCOS	13	---	13(9.02%)

Fig 1 Melasma questionnaire and response to all questions

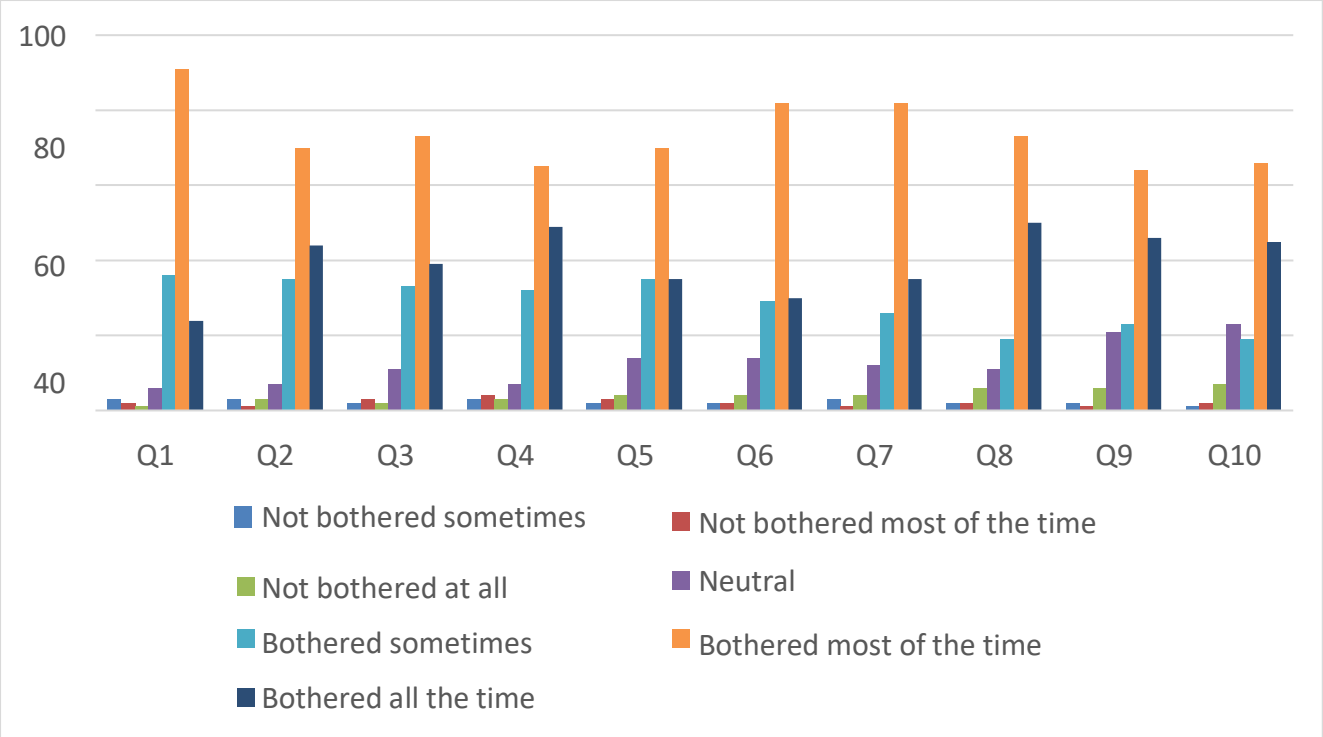

Table 4. Melasma questionnaire and response to all questions

Q	**How do you feel about**		**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	The appearance of your skin condition	n	3	2	1	6	36	91	24
		%	1.8%	1.2%	0.6%	3.7%	22.1%	55.8%	14.7%
2	Frustration aboutyour skin condition	n	3	1	3	**7**	35	70	44
		%	1.8%	0.6%	1.8%	4.3%	21.5%	42.9%	27%
3	Embarrassment about your skin condition	n	2	3	2	11	33	73	39
		%	1.2%	1.8%	1.2%	6.7%	20.2%	44.8%	23.9
4	Feeling depressedabout your skin condition	n	3	4	3	7	32	65	49
		%	1.8%	2.5%	1.8%	4.3%	19.6%	39.9%	30.1%
5	The effects of your skin condition onyour interactions with other people	n	2	3	4	14	35	70	35
		%	1.2%	1.8%	2.5%	8.6%	21.5%	42.9%	21.5%
6	The effects of skin condition on your desire to be wthpeople	n	2	2	4	14	29	82	30
		%	1.2%	1.2%	2.5%	8.6%	17.8%	50.3%	18.4%
7	Your skin condition makes it hard to show affection	n	3	1	4	12	26	82	35
		%	1.8%	0.6%	2.5%	7.4%	16.0%	50.3	21.5%
8	Skin discolorationmakes you feel unattractive to others	n	2	2	6	11	19	73	50
		%	1.2%	1.2%	3.7%	6.7%	11.7%	44.8%	30.7
9	Skin discoloration makesone feel less vital or productive	n	2	1	6	21	23	64	46
		%	1.2%	0.6%	3.7%	12.1 %	14.1%	39.3%	28.2%
10	Skin discolorationaffects your senseof freedom	n	1	2	7	23	19	66	45
		%	0.6%	1.2%	4.3%	14.1%	11.7%	40.5%	27.6%

(**NOTE:** 1. Not bothered sometimes, 2. Not bothered most of the time -20, 3. Not bothered at all -30, 4. Neutral-40, 5. Bothered sometimes-50, 6. Bothered most of the time-60, 7. Bothered allthe time-70)

DISCUSSION

Quality of life is now an important tool to evaluate a patient's condition along with the pharmacological treatment. Dermatological conditions are rarely life-threatening medical emergencies even though these conditions affect the quality of life of the patient. Understanding how affected is the QoL in these patients due to the symptoms that they are experiencing is necessary to better assess their medical problems. Melasma is a common skin condition that causes dark, brown to gray-colored patches on the skin. When melasma is present in pregnant women it is called chloasma.[10] The condition is much more common in women than men (9:1)

and in dark skin individuals like Asians, Hispanics, and Africans.[11]

To assess the quality of life among melasma patients, Balakrishnan et al. developed a newtool in 2003, known as the MELASQOL scale. The domains of the MELASQOL are social life, recreation leisure, and emotional wellbeing. The MELASQOL questionnaire is simple and brief (10 questions) and focuses on three latent dimensions Emotional well-being (Q1-Q4), social life (Q5-Q7 + Q10), recreation and leisure (Q8-Q9). [12]
Our study revealed a higher prevalence of melasma in females (88.34%) compared to males (11.65%), aligning with similar findings by Arora et al.[13] (89.10% females) among 156 subjects. This gender difference may be attributed to hormonal fluctuations, a key factor in melasma etiology.

In a very recent Indian study, Sarkar et al.[14] developed and validated the Hi-MELASQOL questionnaire and they found a mean MELASQOL score of 37.19 similar scores were also found in Harumi O et al.[15] a study conducted among Singapore women, and their mean MELASQOL score of 25.6±15.3, which is found to be lower than our mean MELASQOL score of 57.128±11.98. This may be due to the cultural, and religious differences among the society.

In a study by Misery L et al. among 28 females with melasma, the mean MELASQOL-F score was 20.9 the study concludes women aged above 45 years had higher scores compared to women below 45 years of age, they also found a correlation between quality of life and duration of a condition. [16] However, we did not find such a correlation between MELASQOL and duration of disease (P=0.628, correlation coefficient (ρ)= -0.068) in our study. These variations in MELASQOL may be due to differences in cultural, social, occupational, sun exposure, skin type, self-awareness, and so on.

Jiang J et al. pilot study found that melasma was associated with decreased self-confidence and self-esteem, and increased self-consciousness among the subjects. Additionally, there was no statistical difference observed in the MELASQOL score concerning factors such as education level, age of onset, and duration of the condition. [17] Similar results were seen in previous studies by Arora P et al., Harumi O et al, and Sarkar et al. found no statistically significant correlation between MELASQOL and MASI score. This suggests that the impact of melasma is not related to the degree of severity of melasma. Patients with lower MASI scores may be more stressed due to melasma as compared to the patients with higher MASI scores.

LIMITATION

A larger sample size may help in further validation of our results.

CONCLUSION

Melasma significantly impacts patients' quality of life, particularly in the psychological domain, underscoring the need to address emotional and mental aspects alongside physical symptoms. Clinicians can benefit from our findings for counseling and managing melasma patients. The routine use of the MELASQOL questionnaire is recommended as a practical tool to assess and monitor patients' quality of life. Furthermore, suggesting follow-up counseling provides a potential avenue for enhancing well-being and overall quality of life in individuals diagnosed

with melasma.

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CONFLICT OF INTEREST

Declared none

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