Original Research Article

"EVALUATION OF QUALITY OF LIFE IN PATIENTS WITH MELASMA USING MELASQOL SCALE"

ABSTRACT

Objectives

The MELASQOL scale will be used to assess the quality of life of individuals with melasma, and the study aims to establish correlations between the MELASQOL scale and the MASI score, duration of melasma, age of onset, and distribution pattern of melasma.

Methodology

A prospective cross-sectional study was carried out with 163 subjects between the ages of 18 and 65 who met the inclusion criteria. As part of the evaluation, participants filled out MELASQOL questionnaires, and their MASI scores were calculated.

Result

The majority of melasma patients were found to be between the ages of 26 and 45 in a study comprising 163 subjects. MELASQOL and MASI mean scores were computed as follows: 57.128±11.98 and 8.086±3.5405, respectively. The study shows that subjects with melasma have a markedly worse quality of life (QoL). It's interesting to note that the influence on quality of life was shown to be unaffected by variables like the duration of melasma, age of onset, distribution pattern, and MASI score.

Conclusion

The study highlights the need to routinely evaluate melasma patients using the MELASQOL questionnaire, which has a significant influence on their quality of life (QoL). This largely affects the patient's general functionality and is linked to psychological anguish and emotional experiences. This emphasizes the need to manage the psychological and functional components of melasma in addition to its physical manifestation, underscoring the importance of a comprehensive approach to patient care in dermatology.

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 is a prevalent skin condition characterized by irregular brown macules symmetrically appearing on sun-exposed areas, particularly the face. This dermatological issue predominantly affects women with more pigmented phenotypes, specifically those categorized as Fitzpatrick skin types III-V.[2] Melasma is a common skin condition that appears as symmetrical light- or dark-brown macules on the cheeks, forehead, chin, and upper lip. It is typically seen in sun-exposed areas.

Melasma exhibits three primary clinical patterns based on lesion distribution:

1) Centro facial pattern: Mostly seen on the chin, upper lip, forehead, cheeks, and nose.
2) Malar pattern: Mostly seen on the nose and cheeks.
3) Mandibular: Seen on the mandibular ramus.[4]

Melasma is caused by a variety of reasons, such as hormone changes, sun exposure, hereditary influences, and some medication [5]. Numerous national and international research studies have shown how melasma affects a patient's self-esteem and quality of life (QoL). This study uses the MELASQOL scale to assess the quality of life in people with melasma. Furthermore, it looks for relationships between the MELASQOL scale, the MASI score, the duration of the the condition, the distribution pattern of melasma, and the age of onset.

MATERIALS AND METHOD

Materials

The investigation was carried out at a tertiary care hospital's outpatient dermatology department.

Study period: 6 months

Study instrument: MELASQOL questionnaire, MASI scoring system

Inclusion criteria

1. Outpatient diagnosed with Melasma
2. Individuals wanting to take part in the study who fall between the age range of 18 to 65.
3. Pregnant women who are diagnosed with Melasma

Exclusion criteria

1. Patients below 18 years and above 65 years
2. Patients with other comorbidities such as dermatological or psychological

Methods

Study design

A prospective cross-sectional study was conducted evaluating the quality of life (QoL) of melasma patients. 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 will be assessed through the use of the MELASQOL questionnaire.

Study instrument

Three latent variables in the MELASQoL-A structure—emotional well-being (Q1–Q4), social life (Q5–Q7 plus Q10), and recreation and leisure (Q8–Q9)—are the focus of the short and straightforward (10 questions) MELASQOL questionnaire. Patients answered all of the questionnaire's questions, which were: neutral, disturbed occasionally, bothered most of the time, not bothered at all, not bothered most of the time, and bothered all the time. The score runs from 10 to 70; the greater the number, the poorer the quality of living. The forehead (f), left malar region (lm), right malar region (rm), and chin (c) correspond to 30%, 30%, and 10% of the entire face, respectively. These three factors are subjectively assessed to determine the MASI score, which was developed by Kimbrough-Green et al [6] in 1994. A score of 0–6 was assigned to the area of involvement; the overall score might vary from 0–48.

Total score for MASI: 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

RESULT

The following results were obtained from this study

Table 1 demonstrates that of the 163 participants in the study, 144 (88.34%) were female and 19 (11.65%) were male. Of that, 7 subjects were under the group of 18-25 age,105 subjects under the group of 26-5 age, and 51 subjects under the group of 46-65 age. The highest number of patients affected with Melasma were in the 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, 13(7.9%) subjects having a mild level of sun exposure,67(41.1%) subjects having a moderate level of sun exposure, 64(39.2%) subjects having an intermittent level of sun exposure, and 19(11.6%) subjects having a severe level of sun exposure. 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 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. There is no significant correlation

between the MASI score and MELASQOL (P=0.528). The correlation value (ρ) stands at -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

Age of illness beginning and length (P=0.4606, correlation coefficient (ρ)= -0.066) and (P=0.628, correlation coefficient (ρ)= -0.068) in this research, respectively. This indicates that the duration and age of melasma do not affect a person's quality of life.

This suggests that the effect of melasma on life quality is unaffected by the disease's severity, distribution, age of occurrence, or duration of Melasma.

Table 1 Gender and age 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%)
No Level of sun exposure			
• Mild	12	1	13(7.9%)
• Moderate	64	3	67(41.1%)
• Intermittent	61	3	64(39.2%)
• Severe	7	12	19(11.6%)
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

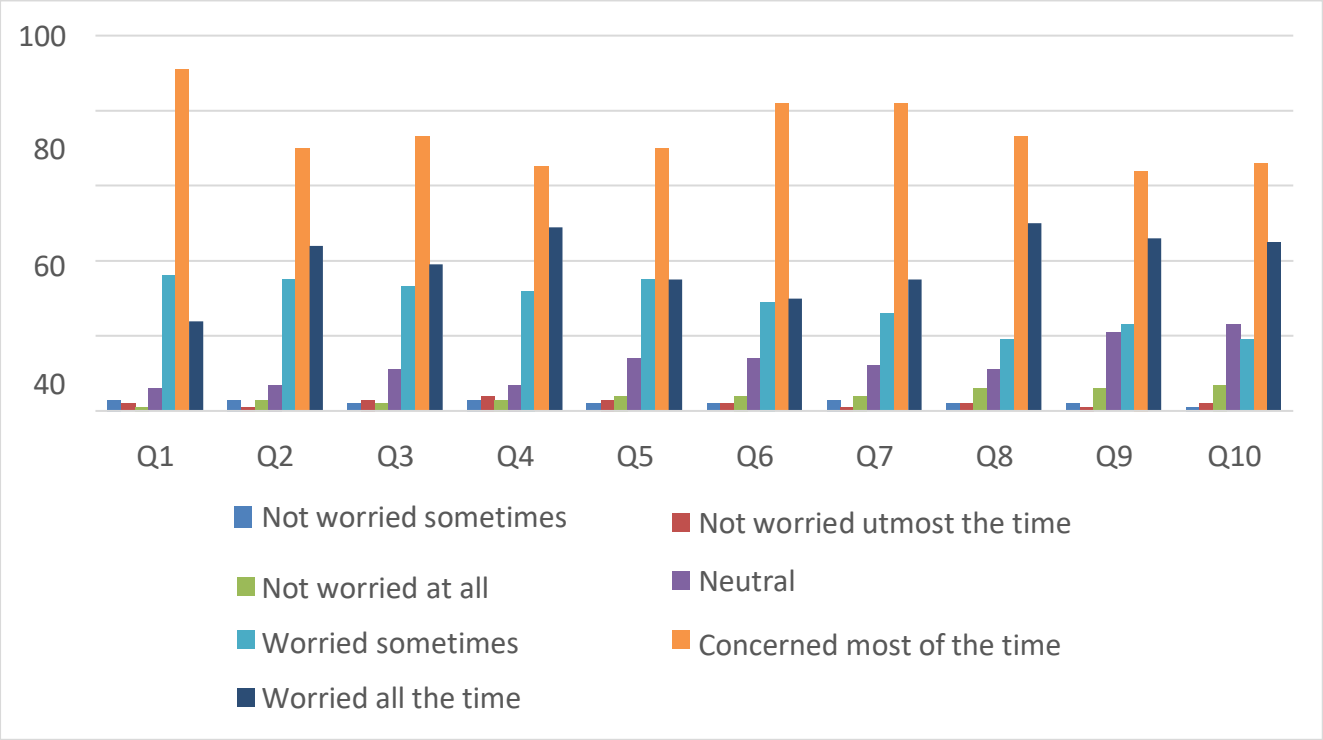

Table 4. Melasma questionnaire and response to all questions

Q	How do you feel About		1	2	3	4	5	6	7
1	The way your skin condition looks	n	3	2	1	6	36	91	24
		%	1.8%	1.2%	0.6%	3.7%	22.1%	55.8%	14.7%
2	Frustration about your 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	How your skin condition affects how you interact with other individuals	n	2	3	4	14	35	70	35
		%	1.2%	1.8%	2.5%	8.6%	21.5%	42.9%	21.5%
6	How a skin issue affects your desire to socialize	n	2	2	4	14	29	82	30
		%	1.2%	1.2%	2.5%	8.6%	17.8%	50.3%	18.4%
7	It's difficult to convey affection because of your skin issue.	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 sensedfreedom	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 3. Not bothered at all 4. Neutral, 5. Bothered sometimes, 6. Bothered most of the time , 7. Bothered all the time)

DISCUSSION

In addition to pharmacological therapy, quality of life is increasingly a crucial criterion for assessing a patient's state. Dermatological disorders can impair a patient's quality of life, although they are seldom life-threatening medical emergency. It is vital to comprehend how these patients' symptoms are affecting their quality of life in order to analyze their medical issues more accurately. Melasma is a common skin disorder that results in areas of dark brown to grey skin. Chloasma[7] is the term used to describe melasma in pregnant women. Dark-skinned people, such as Asians, Hispanics, and Africans, are far more likely to have this skin condition. [8]

The MELASQOL scale was created in 2003 by Balakrishnan et al. as a novel instrument to evaluate the quality of life in melasma patients. The MELASQOL has three domains: emotional wellness, leisure activities, and social life. The 10-question MELASQOL questionnaire is easy to use and concentrates on three latent variables. (Q1–Q4), social life (Q5–Q7 plus Q10), and leisure and recreation (Q8–Q9) are the domains of emotional well-being[8].

The Hi-MELASQOL questionnaire was created and validated by Sarkar et al.[10] in fairly recent Indian research. Their mean MELASQOL score was 37.19, which is lower than our mean MELASQOL score of 57.128±11.98. Research by Harumi O et al.[11] among women in Singapore's population revealed a MELASQOL score of 25.6±15.3. The mean MELASQOL-F score among 28 females with melasma in a study by Misery L et al. was 20.9; the study concluded that women over 45 had higher scores than women under 45, and they also discovered a link between quality of life and duration of a condition[12]. In our investigation, we were unable to discover any such association between MELASQOL and duration of Melasma. Differences in self-awareness, skin type, sun exposure, social, cultural, and vocational factors might all contribute to these variances in MELASQOL. In a pilot study, Dogramaci et al.[13] discovered that melasma was linked to lower levels of self-esteem and confidence as well as higher levels of self-consciousness in the participants. Furthermore, no statistically significant variation was noted in the MELASQOL score with respect to variables including educational attainment, age at onset, and length of the condition. Previous research by Arora P et al.[14], Dominguez et al., Harumi O et al., and Sarkar et al. revealed no statistically significant link between MELASQOL and MASI score. These findings were similar to our study. It appears from this that the effects of melasma are independent of its intensity. Compared to patients with higher MASI scores, those with lower MASI scores may be under more stress as a result of melasma.

LIMITATION

Increasing the sample size might aid in verifying our findings even further.

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 complete excellence of life in individuals diagnosed with melasma.

REFERENCE

1. Bandyopadhyay D. Topical treatment of melasma. Indian J Dermatol. 2009;54(4):303–309.
2. Aishwarya K, Bhagwat PV, John N. Current concepts in melasma - a review article. J Skin Sex Transm Dis. 2020;2:13–17.
3. Willis Hughes Lyford M. Melasma. Background, Pathophysiology, Etiology. Medscape. January 31, 2023.
4. Sanchez NP, Pathak MA, Sato S, Fitzpatrick TB, Sanchez JL, Mihm MC Jr. Melasma: a clinical, light microscopic, ultrastructural, and immunofluorescence study. J Am Acad Dermatol. 1981 Jun;4(6):698-710. doi: 10.1016/s0190-9622(81)70071-9. PMID: 6787100
5. Rendon MI. Hyperpigmentation Disorders in Hispanic Population in the United States. J Drugs Dermatol. 2019 Mar 1;18(3):s112-114. PMID: 30909362.
6. Kimbrough-Green CK, Griffiths CE, Finkel LJ, Hamilton TA, Bulengo-Ransby SM, Ellis CN, Voorhees JJ. Topical retinoic acid (tretinoin) for melasma in black patients. A vehicle-controlled clinical trial. Arch Dermatol. 1994 Jun;130(6):727-33. PMID: 8002642..
7. Bolanca I, Bolanca Z, Kuna K, Vuković A, Tuckar N, Herman R, Grubisić G. Chloasma--the mask of pregnancy. Coll Antropol. 2008 Oct;32 Suppl 2:139-41. PMID: 19140277.
8. Sarkar R, Ailawadi P, Garg S. Melasma in Men: A Review of Clinical, Etiological, and Management Issues. J Clin Aesthet Dermatol. 2018 Feb;11(2):53-59. Epub 2018 Feb 1. PMID: 29552277; PMCID: PMC5843363.
9. Balkrishnan R, McMichael AJ, Camacho FT, Saltzberg F, Housman TS, Grummer S, Feldman SR, Chren MM. Development and validation of a health-related quality of life instrument for women with melasma. Br J Dermatol. 2003 Sep;149(3):572-7. doi: 10.1046/j.1365-2133.2003.05419.x. PMID: 14510991.
10. Sarkar R, Garg S, Dominguez A, Balkrishnan R, Jain RK, Pandya AG. Development and validation of a Hindi language health-related quality of life questionnaire for melasma in Indian patients. Indian J Dermatol Venereol Leprol. 2016 Jan-Feb;82(1):16-22. doi: 10.4103/0378-6323.168937. PMID: 26728805.
11. Harumi O, Goh CL. The Effect of Melasma on the Quality of Life in a Sample of Women Living in Singapore. J Clin Aesthet Dermatol. 2016 Jan;9(1):21-4. PMID: 26962388; PMCID: PMC4756868
12. Misery L, Schmitt AM, Boussetta S, Rahhali N, Taieb C. Melasma: measure of the impact on quality of life using the French version of MELASQOL after cross-cultural adaptation. Acta Derm Venereol. 2010 May;90(3):331-2. doi: 10.2340/00015555-0837. PMID: 20526570.
13. Jiang J, Akinseye O, Tovar-Garza A, Pandya AG. The effect of melasma on self-esteem: A pilot study. Int J Womens Dermatol. 2017 Dec 8;4(1):38-42. doi: 10.1016/j.ijwd.2017.11.003. PMID: 29872675; PMCID: PMC5986109.
14. Sharma A, Bajpai S, Paghdar D, et al. Impact of melasma on quality of life in Indian patients. Indian J Dermatol. 2017;62(4):395–399