Quality of Life of Melasma Patients in Pakistan

Atiya Rahman, Anam Basit*, Sadia Mohsin, Najia Ahmed, Moizza Tahir***, Asim, Ishfaq**

Combined Military Hospital Lahore/National University of Medical Sciences (NUMS) Pakistan, *Wapda Teaching Hospital Complex, Lahore Pakistan, **Pak Naval Ship Shifa Hospital Karachi, ***Combined Military Hospital Gujranwala/National University of Medical Sciences (NUMS) Pakistan

ABSTRACT

Objective: To assess the quality of life in Pakistani melasma patients.
Study Design: Cross-sectional study.
Place and Duration of Study: Department of Dermatology, Combined Military Hospital Lahore, from Oct 2020 to May 2021.
Methodology: The study was conducted on 126 adult patients of both genders by non-probability, consecutive sampling technique. Melasma severity was assessed by 'melasma area severity index (MASI) and quality of life impairment by 'dermatology life quality index (DLQI).
Results: A total of 126 patients participated in the study, out of which 85.7% were females, and 14.3% were males. Mean MASI score was 12.21 ± 6.87, and mean DLQI score was 8.22 ± 7.46. Male patients had higher MASI scores and statistically signify-cant DLQI than female patients (p=0.016). Employed people and those from the higher socio-economic group showed a more significant impairment of their quality of life.
Conclusion: There was moderate impairment of quality of life in melasma patients. Healthcare givers need to recognize the effect of melasma on mental health while counselling patients and devising management strategies.

Keywords: Dermatology life quality index (DLQI), DLQI-Urdu version, Impairment, quality of life, Melasma, Melasma area severity index (MASI).

How to Cite This Article: *Rahman A, Basit A, Mohsin S, Ahmed N, Tahir M, Ishfaq A. Quality of Life of Melasma Patients in Pakistan. Pak Armed Forces Med J 2022; 72(1): 307-310. Doi: https://doi.org/10.51253/pafmj.v72i1.7401*

INTRODUCTION

Melasma is an acquired cause of facial hyperpigmentation, commonly affecting women of reproductive age; however, it can also affect men.[1] It usually affects the sun-exposed skin of the face, including cheek, forehead, upper lip and nose, and is more common in Fitzpatrick skin types III-V; thus, more often seen in Latin Americans and Asians. Although the exact pathogenesis has not been fully established, certain risk factors have been identified, e.g. ultraviolet radiation exposure, genetic makeup, hormonal preparations, phototoxic drugs, ovarian or thyroid dysfunction and some cosmetics.[2] Mostly, the hyperpigmentation of melasma is refractory to treatment. There is an array of treatment options available. One of the most popular topical therapies for melasma is the triple combination regimen, i.e. a mid-potency corticosteroid, a retinoid and hydroquinone. Other partially effective but not first-line modalities are Azelaic acid, Glycolic acid, Kojic acid, 4-n-Butylresorcinol, Arbutin and various procedures like chemical peels, dermapen, microdermabrasion, laser and IPL etc.[3,4]

Being resistant to treatment, is one of the causes of extreme psychological distress.[2] Studies have shown that it negatively impacts the quality of life, leading to embarrassment, frustration and depression.[5] Various tools have been utilised to assess this aspect. The dermatology life quality index (DLQI),[6] is a reliable, valid, time-efficient tool that has been most widely used. It has been used as a patient-reported outcome in many published research studies, clinical audits and assessments of tele-dermatology. It has been translated into over 115 languages, including Urdu. Other tools specific for melasma include the melasma quality of life scale (MELASQoL) and HRQ-melasma.[7,8] Studies assessing the quality of life in melasma patients have shown consistency between the use of DLQI and MELASQoL.[9,10] The factors leading to impairment in quality of life have been intangible. Few studies noted morbidity irrespective of the severity of melasma, implying the condition hampers the self-confidence and self-perception of the individuals. This study aimed to assess the quality of life in Pakistani melasma patients.

METHODOLOGY

A cross-sectional study was conducted at the department of Dermatology, Combined Military Hospital Lahore, from September 2020 to May 2021. The study was initiated after approval from the Research Review Board of the hospital (ID No. 224/2020). A

Correspondence: Dr Atiya Rahman, Department of Dermatology, Combined Military Hospital Lahore Pakistan
Received: 19 Sep 2021; revision received: 20 Jan 2022; accepted: 26 Jan 2022

license (ID CUQoL2932) was obtained from the authors of tool before initiation of the study through email to use the DLQI–Urdu version for research purposes. The estimated sample size was calculated to be 124, assuming a 95% confidence interval and 5% margin of error, keeping 8.8% as the prevalence of the condition.[11] Non-probability, consecutive sampling technique was employed after written informed consent from the patients.

Inclusion Criteria: Melasma patients of both genders, aged 18-60 years, diagnosed on the basis of facial hyperpigmentation by a consultant dermatologist were included in the study.

Exclusion Criteria: Patients having other facial dyschromia, e.g., café au lait patch, port-wine stain, seborrheic keratosis >0.5 cm etc., were excluded from the study. Similarly, patients with psychiatric disorders or chronic systemic illnesses were also excluded from the study.

Patients' details were collected on a pre-designed proforma, including their demographic details, severity of melasma by 'melasma area severity index (MASI),[12] and quality of life impairment by a valid and reliable tool 'DLQI'.[6,13] After written informed consent, patients meeting the inclusion criteria were requested to fill out the DLQI–Urdu version form. Those patients who couldn't read were assisted by a junior doctor who read aloud the tool and marked their answers. The DLQI is a ten-item questionnaire that has high face validity with patients.[14] It assesses six domains potentially hampering a person's quality of life. The first two questions are about symptoms and emotional impact. Question 3 and 4 are about daily activities, and the next two are about social/leisure activities. Question 7 is about the impact of the condition on work life. The next two questions are about personal relationships and the medication application. The patients have to tick mark the options ranging from not to very much, scores ranging from 0-3 for each statement. In addition, if they find a question irrelevant, they can mark a separate box in their case. The score ranges from a minimum of 0 to a maximum score of 30, with higher scores denoting greater impairment in quality of life. The scoring on impairment on quality of life is done as under 12: 0-1= none, 2-5 = small, 6-10 = moderate, 11-20 = very large and 21-30 = extremely large impact.[15]

The data obtained was analysed using Statistical Package for the Social Sciences (SPSS) version 23.00. Numerical variables like age and MASI score were presented as mean ± SD. Categorical variables, i.e. gender, education, marital status, profession and socio-economic status, were presented as frequency and percentages. Independent sample t-test and one-way analysis of variance (ANOVA) was applied to find out the mean differences in different sub-groups of the studied population. The *p*-value ≤0.05 was considered statistically significant.

RESULTS

One hundred twenty-six patients were enrolled in the study, out of which 108 were females (85.7%), and 18 were males (14.3%). The age of the study patients ranged from 18-58 years with the mean age of 36.46 ± 9.25 years. The demographic details of the study population were shown in Table-I.

Table-I: Demographic details of study participants.

Demographic Characteristic	n (%)
Gender	
Female	108 (85.7)
Male	18 (14.3)
Marital Status	
Married	116 (92.1)
Single	10 (7.9)
Socioeconomic Status	
Low income group	41 (32.5)
Middle income group	76 (60.3)
High income group	9 (7.2)
Education	
None	15 (11.9)
Primary	8 (6.3)
Secondary	8 (6.3)
Matriculation	33 (26.2)
Intermediate	27 (21.4)
Bachelors	23 (18.3)
Post graduate	12 (9.5)
Ethnicity	
Punjabi	105 (83.3)
Pathan	4 (3.2)
Balochi	2 (1.6)
Sindhi	2 (1.6)
Urdu speaking	7 (5.6)
Others	6 (4.8)
Employment	
Employed	30 (23.8)
Housewives	90 (71.5)
Students	4 (3.2)
Unemployed	2 (1.6)
Duration of Melasma	
Up to 1 year	43 (34.1)
1.1 – 5 years	67 (53.2)
6-10 years	15 (11.9)
>10 years	1 (0.8)

Melasma duration ranged from 3 months to 12 years with an average of 2.737 ± 2.23 years. Mean

MASI score of patients was 12.21 ± 6.87. Mean DLQI score of the patients was 8.22 ± 7.46, which indicated moderate impairment of quality of life in the study population. 16 (12.7%) had none, 49 (38.9%) had small, 20 (15.9%) had moderate, 30 (23.8%) had very large and 11 (8.7%) had extremely large impairment of life. DLQI values did not correlate with MASI scores (*p*-value=0.204). The DLQI and MASI scores according to gender, marital status and duration of melasma were shown in Table-II.

Table-II: MASI and DLQI scores according to demographic characteristics.

Parameters	Gender		*p*-value
	Male	Female	
MASI	11.68 ± 6.44	15.43 ± 8.54	0.031
DLQI	7.57 ± 3.22	12.11 ± 7.91	0.016
	Marital Status		
	Married	Single	
MASI	12.28 ± 6.67	11.43 ± 9.28	0.707
DLQI	8.35 ± 7.60	6.70 ± 5.77	0.504

Our study found that only 18 (14.3%) participants were male but they had statistically significant higher MASI score and quality of life impairment than female participants. We found that the majority of the participants 110 (87.3%) had short history of melisma (up to 5 years). Employed patients and those from higher socioeconomic group had higher DLQI values, though they were not statistically significant (*p*-value 0.775 and 0.247 respectively) (Table-III).

Table-III: MASI and DLQI scores according to socioeconomic status and educational level.

Parameters	Socioeconomic Status			*p*-value
	Low Income	Middle Income	High Income	
MASI	13.17 ± 7.02	11.74 ± 6.90	11.94 ± 6.23	0.561
DLQI	8.07 ± 7.31	7.83 ± 7.42	12.22 ± 8.21	0.247
	Educational Level			
	Up to Secondary	Matric/ Intermediate/ Equivalent	Graduate/ Post Graduate	
MASI	13.05 ± 6.40	12.53 ± 6.96	10.93 ± 7.12	0.939
DLQI	8.13 ± 7.28	8.43 ± 7.40	7.94 ± 7.00	0.774

DISCUSSION

Our study showed that the study population of melasma patients had moderate impairment of quality of life. Skin diseases involving depigmentation on exposed skin surfaces significantly affect the quality of life. With electronic and print media propagating relentlessly flawless skin and artificial and unattainable beauty standards, it is not unusual for ordinary people to be excessively concerned about their imperfections on exposed parts, especially the face.[16]

Various tools are available to assess the impact of skin conditions. We have used DLQI- Urdu version in our study as we have found it most user friendly. It has ten items as compared to 19 items in MELASQoL and HRQ-melasma. Although MELASQoL and HRQ-melasma are designed explicitly for melasma, previous studies have established a good correlation between DLQI and MELASQoL and HRQ-melasma.[1,17,18] Hence, the use of DLQI is a time-efficient, feasible, reliable and valid tool.

A USA based study 15 found mean DLQI as 6.75 ± 2.53 for melasma patients. Studies done in India have shown mean DLQI as 9.92 ± 3.01,[16] in Iranian study DLQI as 6.90 ± 4.11,[17] in Singapore mean DLQI value was 4.5 ± 5.07, South Korea DLQI as 6.70 ± 2.3718 and in Turkey mean DLQI value as 6.02 ± 3.84.[14] In two Nepalese studies on melisma, 9,19 the mean DLQI was 6.81 ± 1.34 and 10.9 ± 5.41 respectively. However, previous studies in Pakistan have shown severe impairment in quality of life with DLQI scores of 17.08 ± 5.28 in females as compared to 16.00 ± 0.93 in males.[8]

This signifies that inappropriate treatment of melasma worsens the skin condition, further deteriorating patients' quality of life. While counselling the patients about melasma and the limitations of therapeutic options, health workers need to stress inappropriate remedies by patients themselves, deteriorating the skin condition further.[20,21]

Most of our study participants were female. Similar has been seen in earlier studies.[8,22] Our study has shown that MASI does not correlate with DLQI (*p*-value 0.204), indicating that the quality of life impairment was not correlated with the severity of melasma. This finding was consistent with some previously published studies.[7,15,19] However, the Iranian study by Hossein *et al*, found that MASI score was significantly related with higher Melas Qol and DLQI scores (*p*-values <0.001).[17] Some other studies have shown a weak, statistically insignificant correlation between MASI and DLQI1.[6,23]

Turkish study by Coban *et al*,[14] has shown DLQI significantly related to educational status (*p*-value 0.037). In contrast, studies from Latin America have shown people of the lower socio-economic group were affected more by melasma.[24,25]

Our study has shown moderate impairment of quality of life with significantly higher impairment in

male patients than females. Dermatologists need to be mindful of potentially devastating psychological effects of this condition in all the patients, regardless of gender. The correlation between clinical severity of melasma assessed by MASI scoring and impairment in quality of life by DLQI was poor.

LIMITATIONS OF STUDY

The study was conducted in a single center. Multi-centre studies involving other provinces and the variation of demographic details might provide a more accurate picture of the impact of melasma on patients' mental health.

CONCLUSION

There was moderate impairment of quality of life in melasma patients. Healthcare givers need to recognize the effect of melasma on mental health while counselling patients and devising management strategies.

Conflict of Interest: None.

Authors' Contribution

AR: Conception design data gathering analysis manuscript writing, AB: Conception data gathering manuscript writing, SM: Conception data gathering and entering, NA: Study design manuscript writing & review, MT: Study design manuscript writing & review, AI: Analysis and interpretation of data, manucript writing referencing.

REFERENCES

1. Pollo CF, Miot LDB, Meneguin S, Miot HA. Development and validation of a multidimensional questionnaire for evaluating quality of life in melasma (HRQ-melasma). An Bras Dermatol 2018; 93(3): 391-396.
2. Sarkar R, Ailawadi P, Garg S. Melasma in Men: A Review of Clinical, Etiological, and Management Issues. J Clin Aesthet Dermatol 2018; 11(2): 53-59.
3. McKesey J, Tovar-Garza A, Pandya AG. Melasma Treatment: An Evidence-Based Review. Am J Clin Dermatol 2020; 21(2): 173-225.
4. Basit A, Rahman A, Uddin R. Oral tranexemic acid with triple combination cream (flucinolone+hydroquinone+tretinoin) versus triple combination cream alone in treatment of melasma. J Ayub Med Coll Abbottabad 2021; 33(2): 293-298.
5. Deshpande SS, Khatu SS, Pardeshi GS, Gokhale NR. Cross-sectional study of psychiatric morbidity in patients with melasma. Indian J Psychiatry 2018; 60(3): 324-328.
6. Finlay AY, Khan GK. Dermatology life quality index (DLQI): a simple practical measure for routine clinical use. Clin Exp Dermatol 1994; 19(3): 210-216.
7. Harumi O, Goh C. The effect of melasma on the quality of life in a sample of women living in Singapore. J Clin Aesthet Dermatol 2016; 9(1): 21-24.
8. Ali R, Aman S, Nadeem M, Kazmi A. Quality of life in patients of melasma. J Pak Assoc Derma 2013; 23(2): 143-148.
9. Amatya B, Jha A, Shrestha S. Frequency of different types of facial melanoses referring to the department of dermatology and Venereology, Nepal Medical College and Teaching Hospital in 2019, and assessment of their effect on health-related quality of life. BMC Dermatol 2020; 20(1): 4.
10. Werlinger KD, Guevara IL, Gonzalez CM. Prevalence of self-diagnosed melasma among premenopausal latino women in dallas and Fort Worth, Texas. Arch Dermatol 2007; 143(3): 424–425.
11. Pandya AG, Hynan LS, Bhore R, Riley FC, Guevara IL, Grimes P, et al. Reliability assessment and validation of the Melasma Area and Severity Index (MASI) and a new modified MASI scoring method. J Am Acad Dermatol 2011; 64(1): 78-83.
12. Hongbo Y, Thomas CL, Harrison MA, Salek MS and Finlay AY. Translating the science of quality of life into practice: What do dermatology life quality index scores mean? J Invest Dermatol 2005; 125(4): 659-664.
13. Maranzatto C, Miot H, Miot L, Meneguin S. Psychometrican analysis and dimensional structure of the Brazilian version of melasma quality of life scale (MELASQoL-BP). An Bras Dermatol 2016; 91(4): 422-428.
14. Coban M. Quality of Life of the Patients with Melasma. J Cosmetol Trichol 2018; 4(1): 2.
15. Buainain de Castro Maymone M. Skin hyperpigmentation disorders: associations and impact on health-related quality of life. Boston University Theses and Dissertation. 2016, [Internet] Available from: https://hdl.handle.net/2144/19513
16. Morgaonkar M, Gupta S, Vijay A, Jain SK, Sharma M, Agarwal S. Melasma: Its impact on quality of life. Pigment Int 2017; 4(1): 39-44.
17. Hossein S, Simin S, Yalda B. Quality of life in women with melasma. Dermatol Cosmet 2011; 1(4): 179-186.
18. Kim HY, Park GH, Park EJ, Kwon IH, Kim KH, Kim KJ. Usefulness of Melasma Quality of Life Scale (MELASQOL) When Evaluating the Quality of Life in Korean Melasma Patients. Korean J Dermatol 2013; 51(6): 422-428.
19. Pudasaini P, Neupane S. An observational study to evaluate quality of life in patients with melasma in a tertiary level hospital of Pokhara. Nepal J Dermatol Venereol Leprol 2021; 19(1): 37-41.
20. Luqman N. Melasma: Quality of life in patients. Professional Med J 2017; 24(12): 1899-1903.
21. Uyanikoglu H, Aksoy M. Quality of life in patients with melasma in Turkish women. Dermatol Rep 2017; 9(2): 7340.
22. Dominguez AR, Balkrishnan R, Ellzey AR, Pandya AG. Melasma in latina patients: cross-cultural adaptation and validation of a quality-of-life questionnaire in spanish language. J Am Acad Dermatol 2006; 55(1): 59-66.
23. Freitag F, Cestari T, Leopoldo L, Paludo P, Boza J. Effect of melasma on quality of life in a sample of women living in southern Brazil. J Eur Acad Dermatol Venereol 2008; 22(6): 655-662.
24. Amatya B, Pokhrel DB. Assessment and Comparison of Quality of Life in Patients with Melasma and Vitiligo. Kathmandu Univ Med J 2019; 66(2):114-118.
25. Jiang J, Akinseye O, Tovar-Garza A, Pandya AG. The effect of melasma on self-esteem: A pilot study. Int J Womens Dermatol 2018; 4(2): 38-42.