



## Original Research

The effect of melasma on self-esteem: A pilot study<sup>☆,☆☆</sup>J. Jiang, O. Akinseye, A. Tovar-Garza, MD, A.G. Pandya, MD<sup>\*</sup>

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## ABSTRACT

Melasma is a common disorder of hyperpigmentation characterized by tan or brown macules and patches affecting sun-exposed areas, particularly the face. Melasma has been shown to have a significant impact on the quality of life and self-esteem of those affected. We interviewed six patients who were diagnosed with moderate-to-severe melasma with regard to the effect of their disorder on their self-esteem. All patients reported a significant negative effect on their quality of life and self-esteem. With successful therapy using a triple combination of cream and oral tranexamic acid to treat their melasma, all reported a marked improvement in self-esteem. Physicians who treat patients with melasma should be aware of its profound psychosocial effects and the improvement that successful melasma treatment can have on self-esteem.

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## Introduction

## Background

Melasma is a common disorder of hyperpigmentation characterized by tan or brown macules and patches that mainly affect sun-exposed areas. Melasma can affect men and women of all ethnicities and skin types but is especially prevalent in women with Fitzpatrick skin types III to V who are exposed to ultraviolet (UV) light (Sheth and Pandya, 2011). Although there are many reports of melasma in Hispanic and Asian individuals, the disorder can affect any racial/ethnic group (Sheth and Pandya, 2011). The precise cause of melasma is unknown but factors such as UV light exposure, pregnancy, exogenous hormones, and genetics have been shown to have an important role in the pathogenesis of melasma (Lieu and Pandya, 2012; Sheth and Pandya, 2011). Melasma is notoriously difficult to treat and has a high rate of recurrence. Although asymptomatic, melasma is a disfiguring disease that negatively affects the quality of life (QoL) and self-esteem of affected individuals.

Disfiguring diseases such as melasma take a significant toll on the psychosocial well-being of affected individuals; however, very little has been published on how to improve their QoL and self-esteem. Multiple studies have assessed the QoL of patients with melasma using measures such as the Melasma Quality of Life (MelasQoL)

score but few have studied focus groups of patients to ascertain self-esteem and psychological stressors that are associated with the condition (Balkrishnan et al., 2003). We interviewed six patients diagnosed with melasma about the effect of their skin condition on QoL and self-esteem before and after treatment.

## Quality of life assessments

Several different questionnaires have been used to assess the QoL of patients who are affected with melasma. In the 1990s, questionnaires such as the Skindex-16 (Chren et al., 1996, 2001) and Dermatology Life Quality Index (DLQI; Finlay and Khan, 1994) specific to dermatologic diseases but not disease-specific were used to measure the psychological effects of melasma on patients. Subsequently, in 2003, a disease-specific QoL questionnaire, MelasQoL, was developed for patients with melasma (Balkrishnan et al., 2003).

The MelasQoL has been shown to be more specific than the Skindex-16 and DLQI and has been translated and validated into multiple languages (e.g., Spanish, Portuguese, French, Turkish, Iranian, Turkish, Hindi; Aghaei et al., 2005; Balkrishnan et al., 2003; Dogramaci et al., 2009; Dominguez et al., 2006; Misery et al., 2010; Sarkar et al., 2016). The findings of the various studies in different languages are listed in Table 1. Contradictory findings with regard to the correlation between the QoL of patients and the severity of their melasma as measured by the melasma area and severity index indicate the effect of melasma on QoL is not solely dependent on disease severity but is multifactorial. Treatment may also affect QoL. In two studies (Dominguez et al., 2006; Misery et al., 2010), patients

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**Table 1**  
Literature review of MelasQoL studies of different ethnicities

Authors	Language	Sample size	MelasQoL score (mean)	Most affected domains	Correlation to disease severity	Correlation to prior treatments	Correlation to age groups	Correlation to level of education	Correlation to psychological function
Balkrishnan et al. (2003)	English	102	36	Social life, recreation and leisure, emotional well-being	Moderate ( $p = 0.30$ )	Not mentioned	↑ MelasQoL in 20–40 year olds vs. 31–40 and > 41 years of age groups ( $p < 0.05$ )	Not mentioned	↑ MelasQoL in patients with history of psychiatric disease vs. control ( $p < 0.001$ )
Cestari et al. (2006), Freitag et al. (2008)	Brazilian Portuguese	85	37.5	Emotional well-being	No correlation	Not mentioned	Not mentioned	↑ MelasQoL (< 8 years of formal education), $p < 0.05$	↑ MelasQoL scores in patients with history of psychiatric disease vs. control ( $p < 0.05$ )
Dominguez et al. (2006)	Spanish	99	42	Social life, emotional well-being, physical health, money matters	Moderate ( $p = 0.233$ )	↑ Sp-MelasQoL ( $p < 0.05$ )	Not mentioned	↑ MelasQoL, (< 7th grade education) $p < 0.05$	Not mentioned
Misery et al. (2010)	French	28	20.9	Family relationships, social life	Not mentioned	↑ MelasQoL	↑ MelasQoL in > 45 year olds vs. < 45 year olds	Not mentioned	Not mentioned
Dogramaci et al. (2009)	Turkish	114	29.9	Appearance of the skin, frustration, feeling unattractive to others, having a restricted sense of freedom	Statistically significant ( $p < 0.05$ )	Not mentioned	Not mentioned	Not mentioned	↑ MelasQoL in poor functioning in psychological life domain patients ( $p < 0.05$ )
Aghaei et al. (2005)	Persian	147	52.83	Social life, recreation and leisure, emotional well-being	Statistically significant ( $p < 0.05$ )	Not mentioned	Not mentioned	Not mentioned	Not mentioned
Sarkar et al. (2016)	Hindi	100	37.19	Physical health, social life and emotional well-being	High ( $p = 0.809$ )	Not mentioned	↑ Hi- MelasQoL in older age groups	Not mentioned	Not mentioned

MelasQoL, melasma quality of life

who were previously treated unsuccessfully for melasma had significantly worse MelasQoL scores than untreated patients. In addition, a lower level of education (< 8 years of formal education) and poor psychological functioning have been found to be correlated with a lower MelasQoL score (Dominguez et al., 2006; Misery et al., 2010; Sarkar et al., 2016).

Contradictory findings with regard to the age group most affected psychologically by melasma have been reported (Balkrishnan et al., 2003; Misery et al., 2010; Sarkar et al., 2016). Two studies using a triple combination cream that consists of hydroquinone, tretinoin, and topical steroid to treat melasma have shown a significant improvement in QoL (Balkrishnan et al., 2004; Cestari et al., 2006). Although several studies have measured the effect of melasma on women's QoL using the MelasQoL, there is little research with regard to the effect of melasma on self-esteem.

## Methods

### Procedure

This study used an inductive qualitative approach to understand the effect of melasma on self-esteem using semi-structured interviews as the means to collect data. This method has been used to gather information about the psychosocial impact of other skin diseases (Hayes, 2000). Four interviews were conducted face-to-face and two by telephone. Our inclusion criteria were women age 18 or older with a history of moderate or severe melasma who presented to the UT Southwestern Pigmentary Disorders Clinic for follow-up of their melasma. Treatment regimen was not an exclusion criterion in this study because all the women were seen by the same provider and were treated with a similar regimen for their melasma. Figures 1 and 2 show a patient with severe melasma who improved after treatment with oral tranexamic acid 325 mg twice daily, triple

combination cream that contained 6% hydroquinone, 0.0125% tretinoin, and 0.1% dexamethasone once daily, and sunscreen lotion.

In total, four women with a history of moderate melasma and two women with severe melasma were interviewed. Demographic information is listed in Table 2. Interviews were transcribed verbatim and results were reviewed and analyzed to detect themes. Interview questions were open ended and pertained to the impact of melasma on daily activity, interaction with others, relationships, self-esteem, and self-reflection. The interview questions are listed in Table 3. In addition, questions were asked to analyze the impact of culture and treatment regimen on the patients' perception of their melasma. All interviews were conducted by the authors.



**Fig. 1.** Patient with severe melasma on the forehead before treatment



Fig. 2. After treatment with oral tranexamic acid and triple combination cream

### Data analysis

A thematic analysis was performed of the qualitative data. Two of the authors reviewed the transcripts of the patient interviews, and discussed and agreed upon common themes from the interviews.

## Results

### Themes

Four key themes emerged in our analysis: Decreased self-esteem/increased self-consciousness, decreased freedom, frustration with costly and ineffective treatments, and improvement in QoL after treatment with an oral tranexamic acid and triple combination cream.

#### Decreased self-esteem/increased self-consciousness

Many of the patients expressed decreased self-confidence and self-esteem and increased self-consciousness because of the noticeability of the melasma. Several of the patients specifically expressed frustration with the fact that melasma occurs on their face and not another, easily concealable area of their body. One patient expressed: "Why couldn't it be my back? Why did it have to be the part of me that greets others every day?"

Several patients also admitted to self-obsession and negativity about their melasma. Multiple patients mentioned looking in the mirror at the lesions on their face several times a day and thinking about their melasma every day. Patients expressed: "I thought about it incessantly"; "[I] look in the mirror [at my melasma]... every morning, every night"; "There were years, during which almost every day I would complain about the melasma."

Table 2  
Patient demographics

Patient No.	Age (years)	Ethnicity	Fitzpatrick skin type	Severity of melasma	Treatment regimen
1	55	African American/Asian	V	Severe	Oral Tranexamic acid Triple combination cream
2	36	Caucasian	IV	Moderate	Oral Tranexamic acid Triple combination cream
3	49	Hispanic	V	Moderate	Oral Tranexamic acid Triple combination cream
4	45	Hispanic	IV	Moderate	Oral Tranexamic acid
5	41	Caucasian	III	Moderate	Triple combination cream
6	61	African American	V	Severe	Oral Tranexamic acid Triple combination cream

Table 3  
Survey questions

1. How noticeable do you think your melasma is to others?
2. Do other people ask you questions about your melasma? If so, do their questions worry or upset you?
3. How satisfied or dissatisfied do you feel with other aspects of your appearance?
4. Do you ever feel different from other people because of your melasma? If yes, in what ways? And, if yes, does this worry you?
5. Do you ever/have you ever felt discriminated against because of your melasma? If yes, has this upset you?
6. How often do you think about your melasma?
7. Do you feel like your work is affected by your melasma?
8. Do you have as many friends as you would like?
9. Does your melasma have an impact on your sense of self-worth/self-esteem?
10. Overall, do you think that having melasma has had a positive or negative impact on you? (Please give examples).
11. How do you think your culture has affected your view on melasma? If you know other people of your culture with melasma, do you think they feel the same way?
12. What treatment have you been on and for how long?
13. Has your self-esteem improved after being treated for your melasma?

The two patients with severe disease mentioned that other people who questioned them about their melasma worsened their self-consciousness. Several patients with moderate melasma stated that even when others reassured them that the melasma was not that bad, they still felt that it was very noticeable. One patient expressed: "[My husband] actually prefers less makeup or no makeup. But in my mind, it didn't matter that he said that and it led to negative self-talk. When he said that, I would get frustrated because I KNEW I was hideous and ugly."

Many patients also expressed feeling inferior to other people. One patient expressed: "You are less than a person or not as good as the next person in line [because of the melasma]. You aren't as whole or complete." Another patient specifically expressed feeling self-conscious in a setting where she had to interact with members of "high-society": "I always felt self-conscious about it; in that group of people, where everyone was so pretty and so well dressed, here I was with [dark stains] on my face."

#### Decreased freedom

All patients indicated in their interviews that having melasma impacted their freedom to some degree. The majority of the patients expressed wanting to avoid social situations because of their melasma. Patients expressed avoiding locations such as the gym, pool, and even work environments that included individuals from leadership. One patient stated that: "If someone came to the door, [I would] immediately look down, look away, or not make eye contact."

Patients also expressed that they would avoid outdoor activities such as riding their bicycle, outdoor jogging, and going to the swimming pool to avoid social interaction as well as the fear that the melasma would get worse with sun exposure.

### Frustration with costly and ineffective treatments

Several patients expressed frustration with costly and ineffective treatments that were prescribed both by dermatologists and nondermatologists. Many of the patients expressed a distrust and feeling betrayed by the health care workers because of a lack of effectiveness of the treatments that they were prescribed. One patient expressed: "I was so frustrated that I was spending so much money, time, and effort on trying to get rid of it. That's why at some point, I was so desperate, I was convinced to use street products, made in people's house." Another patient expressed gratitude for the honesty of one of the physicians she saw: "I appreciate the doctor that told me she couldn't help me. It was devastating but I appreciated the honesty."

### Improvement in QoL and self-esteem after use of oral tranexamic acid and triple combination cream

Currently, some of the first-line treatments for patients with melasma are skin-lightening agents (i.e., hydroquinone, azelaic acid, kojic acid), topical retinoid medications, and combination formulations (Goldstein et al., 2017). Recently, oral tranexamic acid has been reported to be an effective treatment with minimal side effects for patients with moderate-to-severe melasma (Del Rosario et al., 2017).

The patients in the current study had been treated with 4% hydroquinone cream, tretinoin cream, intense pulsed light (IPL), or a combination of these for at least 3 months prior to their first visit without improvement. Many of the patients expressed improvement in their QoL after successful treatment of their melasma with oral tranexamic acid and triple combination cream that was prescribed at our clinic. Patients also expressed that they were more willing to be in social situations, participate in outdoor activities, had a more positive outlook on life, and had increased self-confidence after treatment.

### Cultural impact

In this study, patients from a variety of ethnic and cultural backgrounds were interviewed and provided insights into the cultural effects of different individuals on their perception of melasma. Two patients reported that being a part of a higher socioeconomic status negatively impacted their perception of their melasma. One patient was of mixed East Asian and African descent and pointed out the difference between the two racial groups, stating: "In Asian culture, being fair skinned is important. That probably goes around the world. I can see my African American relatives (females), they're very dark skinned and they have melasma on top of that and I don't know that they notice."

### Discussion

This study revealed four themes with regard to the impact of melasma on the lives of affected patients. Two of the four themes (decreased self-esteem/increased self-consciousness and decreased freedom) in the current study were consistent with those in previous studies and showed decreased QoL in patients with melasma (Aghaei et al., 2005; Balkrishnan et al., 2003, 2004; Cestari et al., 2006; Chren et al., 1996, 2001; Dogramaci et al., 2009; Dominguez et al., 2006; Finlay and Khan, 1994; Freitag et al., 2008; Lieu and Pandya, 2012; Misery et al., 2010; Sarkar et al., 2016; Sheth and Pandya, 2011). The frustration that is experienced by patients due to the costly and ineffective treatments was another theme that was discovered in the present study; however, these issues have not been explored significantly in previous studies. Improvement in QoL after effective treatment of patients with melasma have been reported previously (Balkrishnan et al., 2004).

Melasma disproportionately affects women of color, especially Hispanic and Asian women, and studies of these populations have shown a negative impact of melasma on patients' QoL (Dominguez et al., 2006; Freitag et al., 2008; Sarkar et al., 2016; Sheth and Pandya, 2011). However, further research is needed to compare the impact of melasma in different cultures.

### Limitations

This was a small pilot study that provided interesting information but the data are not necessarily generalizable. In addition, because of the open-ended nature of the patient interviews, there was a potential for bias in the answers that were obtained. The attitude of the interviewers and inflection in which questions were asked (both verbal and physical, through body language or facial expressions) could have biased the responses despite the best efforts by interviewers to maintain neutrality. Also, only patients who were willing to be interviewed about their melasma and self-esteem were included in this study, which raises the potential for sampling bias including those who self-identified with having a greater psychosocial effect of their melasma, a more extraverted personality, those who were more willing to talk about their disease, and those who had the financial means and time to commute to our clinic for this interview.

Recall bias is another limitation of the current study because patients had already been treated for the condition and were asked to answer questions retrospectively. Finally, a formal, inductive, thematic analysis after the procedures as recommended by Hayes (Hayes, 2000) was not conducted in this study to analyze the data.

### Conclusion

QoL describes many factors such as physical health, interpersonal relationships, and social well-being (Lieu and Pandya, 2012). As shown by the current study's interviews, QoL and self-esteem appear to be significantly impacted by melasma. Patients refused to leave their house, felt inferior to others, and incessantly thought about their melasma. Physicians who treat patients with melasma should aim to not only improve pigmentary changes but also improve QoL and self-esteem. Further research into this subject area should be performed, perhaps by conducting prospective studies using a validated tool that is specific for self-esteem such as the Rosenberg Scale for self-esteem of patients with melasma from different backgrounds and skin types before and after treatment (Rosenberg, 1965).

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