

## Depression and Anxiety among Acne and Melasma Patients

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### ABSTRACT

**Objective:** To determine the frequency of depression and anxiety in acne and melasma patients presented at dermatology OPD of a tertiary care Hospital.

**Material and methods:** This cross-sectional study was conducted at the dermatology OPD of Sir Syed Hospital Qayoomabad. Patients with acne or melasma, aged 18 years or above, both gender, patients who have not received treatment for depression or anxiety in the last 3 months and Patients who are willing to complete the study questionnaire honestly and to the best of their ability were included. Hospital Anxiety and Depression scale (HADS) was used to assess the anxiety and depression in study subjects All the data was recorded in self-made proforma and analysis was done by using SPSS version 26.

**Results:** A total of 93 individuals were studied, regarding anxiety and depression due to acne and melasma. Mean age of the participants was 31.32±10.45 years. Females were 64.5% and males were 35.5%. 32.3% of the cases had Melasma and remaining 67.7% had acne. 32.3% cases had mild anxiety, 32.3% had moderate anxiety and 6.5% had severe anxiety. According to the depression, 32.3% cases had mild depression, 19.4% had moderate depression and 19.4% cases had severe depression, while 29.0% cases had no depression. Severity of depression and anxiety were statistically insignificant according to gender, marital status, duration of disease and types of skin disorder ( $p > 0.05$ ).

**Conclusion:** It has been observed that individuals with acne and melasma have a higher likelihood of experiencing symptoms of anxiety and depression. The negative impact of these dermatological conditions on an individual's self-esteem and overall well-being can be significant, leading to emotional distress and psychological difficulties.

**Keywords:** Anxiety, Depression, Melasma, Acne

### INTRODUCTION

The skin serves as the primary interface between the body's internal and external environments.<sup>1</sup> When exposed to external pollutants, toxins, allergens, and other harmful environmental factors, the skin can manifest these effects.<sup>1,2</sup> Melasma is a frequently occurring skin condition that results in irregular brown patches on the forehead, cheeks, and chin in a mask-like pattern.<sup>3</sup> It is typically found in women of reproductive age and can be a chronic and recurring issue that negatively affects many aspects of a patient's quality of life.<sup>3</sup> Melasma is caused by an overproduction of melanosomes in melanocytes and their subsequent transfer to keratinocytes.<sup>4,5</sup> The underlying causes of melasma are complex and not fully understood.<sup>4</sup> Facial, chest and back are the areas of the body most commonly affected by acne, but the condition can affect any part of the body that has a high concentration of sebaceous glands.<sup>6</sup> Acne lesions that become inflamed have the potential to leave scars that are permanent; the severity of these scars may be influenced by how quickly acne patients are treated.<sup>6</sup> Acne seems to have an incidence of over 90% amongst adolescence, and it remains into adulthood in roughly 12%–14% of instances,<sup>6,7</sup> with psychological and social consequences of high intensity. Acne is caused by a buildup of dead skin cells on the surface of the skin.<sup>6,8</sup>

Visible skin disorders can have a significant impact on a person's psychological well-being.<sup>9</sup> These conditions may result in emotional difficulties such as poor self-image, feelings of shame, and the lower self-esteem.<sup>9</sup> The effect of a skin disorder on a patient's quality of life is believed to be a better predictor of psychiatric issues than the severity of the skin condition itself.<sup>1</sup> As a result, psychiatric co-morbidity is a crucial factor in determining the overall disability experienced by the patient.<sup>1,10</sup> Furthermore, individuals with acne and melasma may experience negative social interactions, such as stigmatization, discrimination, and bullying, which can lead to psychological trauma and further exacerbate depression and anxiety symptoms. Therefore, it is crucial for healthcare professionals to be aware of the potential psychological impact of skin disorders and to provide appropriate support and treatment options for patients with depression and anxiety

symptoms. Current study has been done to evaluate the depression and anxiety in acne and melasma patients.

### MATERIALS AND METHODS

This cross-sectional study was conducted at the dermatology OPD of Sir Syed Hospital Qayoomabad. All of the patients diagnosed with acne or melasma by a dermatologist aged 18 years or above, both gender, patients who have not received treatment for depression or anxiety in the last 3 months and Patients who are willing to complete the study questionnaire honestly and to the best of their ability were included. All the patients who are unable to read or understand the study questionnaire or provide accurate responses and patients who have been diagnosed with any other psychiatric or mental health condition that could confound the results were excluded. Written informed consent was obtained. For the depression and anxiety, the Hospital Anxiety and Depression scale (HADS) was used. It is a set of three self-report scales designed to measure the negative emotional states of depression and anxiety. HADS comprised of 2 subscales: HADS for anxiety scale (HADS-A) and HADS for depression scale (HADS-D). Both HADS-A and HADS-D consisted of 7 items, and each item was answered by the patient on a 4-point (0–3) response category so the possible scores ranged from 0 to 21 for anxiety and 0 to 21 for depression, respectively. The anxiety/depression will be defined as HADS-A/HADS-D score  $\geq 8$ . The anxiety severity was categorized as: 0 to 7, no anxiety; 8 to 10, mild anxiety; 11 to 14, moderate anxiety; 15 to 21, severe anxiety; similarly, the depression severity was defined as: 0 to 7, no depression; 8 to 10, mild depression; 11 to 14, moderate depression; 15 to 21, severe depression. All cases were counseled regarding their information which will be confidential. All the data was recorded in self-made proforma and analysis was done by using SPSS version 26.

### RESULTS

In this study a total of 93 individuals were studied, regarding anxiety and depression due to acne and melasma. Mean age of the cases was 31.32±10.45 years and mean duration of disease was 5.41±2.37 years. Out of all females were 64.5% and males

were 35.5%. Most of the cases 61.3% were unmarried and 38.7% were married. 32.3% of the cases had Melasma and remaining 67.7% had acne. Table.1

Table 1: Demographic and clinical characteristics of patients n=93

Variables		Statistics	
Age (Mean+SD)		31.32+10.45 years	
Disease duration (Mean+SD)		5.41+2.37 years	
Gender	Male	33	35.5%
	Female	60	64.5%
	Total	167	100.0%
Marital status	Married	36	38.7%
	Unmarried	57	61.3%
	Total	93	100.0%
Types of skin disorder	Acne	63	67.7%
	Melasma	30	32.3%
	Total	93	100.0%

Table 2: Average HADS score and severity of anxiety and depression n=93

Variables		Statistics	
HADS-A (Mean+SD)		9.41+3.89	
(HADS-D)(Mean+SD)		10.64+4.34	
Severity of anxiety	No anxiety	27	29.0%
	Mild	30	32.3%
	Moderate	30	32.3%
	severe	6	6.5%
	Total	93	100.0%
Severity of depression	No depressions	27	29.0%
	Mild	30	32.3%
	Moderate	18	19.4%
	severe	18	19.4%
	Total	93	100.0%

Table 3: Severity of anxiety according to gender, marital status, disease duration and type of disease n=93

Variables		Severity of anxiety				p-value
		No	Mild	Moderate	Severe	
Gender	Male	12	12	9	0	0.179
		12.9%	12.9%	9.7%	0.0%	
	Female	15	18	21	6	
		16.1%	19.4%	22.6%	6.5%	
Marital status	Married	12	12	9	3	0.642
		12.9%	12.9%	9.7%	3.2%	
	Unmarried	15	18	21	3	
		16.1%	19.4%	22.6%	3.2%	
Duration of disease	< 5 years	12	15	15	6	0.100
		12.9%	16.1%	16.1%	6.5%	
	> 5 years	15	15	15	0	
		16.1%	16.1%	16.1%	0.0%	
Type of skin disorder	Acne	18	24	18	3	0.288
		19.4%	25.8%	19.4%	3.2%	
	Melasma	9	6	12	3	
		9.7%	6.5%	12.9%	3.2%	

Table 4: Severity of depression according to gender, marital status, disease duration and type of disease n=93

Variables		Severity of depression				p-value
		No	Mild	Moderate	Severe	
Gender	Male	12	12	3	6	0.258
		12.9%	12.9%	3.2%	6.5%	
	Female	15	18	15	12	
		16.1%	19.4%	16.1%	12.9%	
Marital status	Married	12	9	6	9	0.472
		12.9%	9.7%	6.5%	9.7%	
	Unmarried	15	21	12	9	
		16.1%	22.6%	12.9%	9.7%	
Duration of disease	< 5 years	24	18	6	15	0.142
		25.8%	19.4%	6.5%	16.1%	
	> 5 years	3	12	12	3	
		3.2%	12.9%	12.9%	3.2%	
Type of skin disorder	Acne	18	24	18	3	0.001
		19.4%	25.8%	19.4%	3.2%	
	Melasma	9	6	12	3	
		9.7%	6.5%	12.9%	3.2%	

Out of all, 32.3% cases had mild anxiety, 32.3% had moderate anxiety and 6.5% had severe anxiety, while 29.0% cases had no anxiety. According to the depression, 32.3% cases had mild depression, 19.4% had moderate depression and 19.4% cases had severe depression, while 29.0% cases had no depression. Table.2

Severity of depression and anxiety were statistically insignificant according to gender, marital status, duration of disease and types of skin disorder ( $p > 0.05$ ), results shown in table 3 and 4

## DISCUSSION

Depression and anxiety are common mental health conditions that can significantly affect an individual's quality of life. While the causes of these conditions can vary, research has shown that individuals with skin conditions such as acne and melasma may be at a higher risk of experiencing symptoms of depression and anxiety. Present study has been done to evaluate the depression and anxiety in acne and melasma patients. This study involved 93 individuals with acne and melasma, with an average age of 31.32+10.45 years and 64.5% of the participants were female, while 35.5% were male. Consistently Behnam B et al<sup>11</sup> reported that the average age of the patients was 26.0 ± 8.7 years, females were 68.9% and males were 31.1%. In the study by Amatya B et al<sup>12</sup> reported that the average age of the patients was 29.96 ± 12.89 years. Although Mumtaz M et al<sup>13</sup> also found almost similar findings regarding age and gender. In the comparison of this study Naheed A et al<sup>14</sup> also reported that the patients' average age was 41.5±8.14 years and out of 100 cases males were 17 and females were 83. Higher prevalence of acne and melasma in females is likely due to a combination of hormonal, skincare, and environmental factors.

In this study 32.3% cases had mild anxiety, 32.3% had moderate anxiety and 6.5% had severe anxiety, while 29.0% cases had no anxiety. According to the depression, 32.3% cases had mild depression, 19.4% had moderate depression and 19.4% cases had severe depression, while 29.0% cases had no depression. Furthermore, the severity of depression and anxiety were statistically insignificant according to gender, marital status, duration of disease and types of skin disorder ( $p > 0.05$ ). In the comparison of this study Naheed A et al<sup>14</sup> use the Patient Health Questionnaire 9 (PHQ-9) to assess depression in patients with melasma. Out of the total patients assessed, 18 did not show any signs of depression, while mild depression in 38 cases, followed by, moderate depression was in 31 cases, moderate to severe depression was in 6 cases and 7 had severe depression.<sup>14</sup> In the line of this series Jawaid K et al<sup>15</sup> conducted the study to investigate the incidence of depressive disorders and anxiety in the patients of melasma and they found anxiety in 19.49% of the patients and depression in 10.77% of the patients those having melasma. This frequency of anxiety and depression was lower compared to our findings, and this may be because of difference in study sample size, selection criteria and severity of disease. On the other hand, Aslam R et al<sup>15</sup> also found lower frequency of anxiety and depression compared to our findings. The increased occurrence of depression and anxiety in this study could be attributed to the fact that a significant number of patients had both acne and melasma as medical conditions. Although Kanish B et al<sup>16</sup> conducted study on 123 patients diagnosed with melasma indicated that 34.96% of the patients' exhibited signs of depression, while 36.6% of the patients' showed symptoms of anxiety. In the comparison of this study Rayapureddy S et al<sup>17</sup> reported that, out of 74 subjects studied, symptoms of anxiety were observed in all of them. Among these individuals, 30% exhibited mild anxiety, 20% had moderate anxiety, and 24% had severe anxiety. Symptoms of depression were found in 48 subjects, with 30% exhibiting mild depression, 15% with moderate depression, and only 3% with severe depression. As per the several limitations of the study, the study conducted on depression and anxiety among acne and melasma patients often have a small sample size, which may limit the generalizability of

the results. Symptoms of depression and anxiety are often self-reported, which may be influenced by factors such as social desirability bias or individual interpretation of symptoms. Study also do not have a control group, which makes it difficult to determine if the prevalence of depression and anxiety is higher among acne and melasma patients compared to the general population. Given the high prevalence of depression and anxiety among acne and melasma patients, healthcare providers should consider incorporating psychotherapy and counseling services as part of the treatment plan. Future studies should include a control group to determine if the prevalence of depression and anxiety is higher among acne and melasma patients compared to the general population.

## CONCLUSION

In conclusion, it has been observed that individuals with acne and melasma have a higher likelihood of experiencing symptoms of anxiety and depression. The negative impact of these dermatological conditions on an individual's self-esteem and overall well-being can be significant, leading to emotional distress and psychological difficulties. Addressing not only the physical symptoms of these conditions but also the emotional impact is crucial in the treatment and management of acne and melasma. Healthcare professionals must recognize the potential psychological impact of skin conditions and provide appropriate support to their patients. Further research is also necessary to better understand the complex interplay between mental health and dermatological conditions, to develop effective strategies for improving both physical and emotional outcomes in affected individuals.

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