

A Comparative Study on the Prevalence of Depression and Suicidal Ideation in Dermatology Patients Suffering from Psoriasis, Acne, Alopecia Areata and Vitiligo

Pouran Layegh, MD¹
Hamid Reza Arshadi, MD²
Sara Shahriari, MD³
Fakhrolzaman Pezeshkpour, MD³
Yalda Nahidi, MD⁴

1. Research Center for Skin Disease and Cutaneous Leishmaniasis, Qaem Hospital, Mashad University of Medical Sciences
2. Islamic Azad University of Mashad, Mashad Branch
3. Qaem Hospital, Mashad University of Medical Sciences
4. Imam Reza Hospital, Mashad University of Medical Sciences

Corresponding Author:
Pouran Layegh, MD
Associate Professor of Dermatology,
Research Center for Skin Diseases
and Leishmaniasis, Qaem Hospital,
Mashad University of Medical
Sciences
E-mail: Pouran_Layegh@yahoo.com

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Background: Due to their chronic nature, influences on the body image, hopelessness toward complete recovery and frequent recurrences, dermatological diseases seem to be one of the important predisposing factors in depression and suicidal ideation. Thus, the present study aimed at evaluating the degree of depression and suicidal ideation in patients with psoriasis, acne, alopecia areata and vitiligo.

Methods: The study was carried out on 300 patients with psoriasis, acne, alopecia and vitiligo who were referred to the dermatology clinic of Ghaem Hospital in Mashad. Beck depression questionnaire was used to collect the data which was then statistically analyzed with ANOVA and T-test, using SPSS software.

Results: In this study, 35.7% (107) of the subjects were female and 64.3% (193) were male with a mean age of 26.55 ± 10.81 years. The prevalence rate of clinical depression was found to be 47.4% in patients with acne; 69.4% in those with psoriasis; 70.1% in those suffering from vitiligo; 50% in diffuse alopecia areata; 60% in universalis alopecia areata; 100% in ophiasis alopecia areata and 68.3% in patients with localized alopecia areata. As for suicidal ideation, there was no sign in 88.3% (265); however, 6.3% (19) of the patients reported to have thought of suicide but they had no desire for the attempt while 4% (12) of them had some desire for suicide and 1.3% (4) were seriously determined to commit suicide if only they would find themselves in an appropriate situation.

Conclusion: As shown by the findings of the study, there was a close relationship between dermatological diseases and psychological factors; thus, it is important to immediately diagnose concurrent psychological effects, especially those of depression and suicidal ideation. We found that there was a significant relationship between the prevalence rate of dermatological conditions and psychological effects; i.e. depression ($P=0.008$) and suicidal ideation ($P=0.001$). We also found out that the rate of suicide attempt was highest among the patients with universalis alopecia, diffuse alopecia areata and vitiligo, respectively.

Keywords: suicidal ideation, acne, psoriasis, alopecia areata, vitiligo

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INTRODUCTION

One of the most common diseases of all ages is depression with a prevalence rate of 15% to 20%. It has been shown that depression stands in the second place in respect to the expenses imposed on both the individual and society. In addition, there is evidence that depression may negatively affect the number of working days lost by the patients suffering from the disease. According to World Health Organization (WHO), depression is predicted to be the second most prevalent disease in the year 2025. Thus, there is no question that attending to the matter is of great importance ¹.

Of all psychological morbidities threatening and leading to suicide, depression plays a crucial role in which 50% of those who commit suicide are depressed and 15% of the depressed people commit suicide. It is one of the most difficult clinical tasks to identify the diseases which are potentially apt to cause suicide ¹. An increasing rate of prevailing psychological disorders among patients with dermatological diseases has been reported. Due to their chronic nature, their effects on the individuals' self-image, losing hope of total recovery and their frequent recurrences, dermatological diseases are considered as one of the most important predisposing factors causing depression and suicidal ideation. Many of such patients either do not go for remedy due to their depression or do not carry on the treatment because of losing hope. Some may even commit suicide if they feel very depressed and hopeless ^{2,3}.

There are several studies which have investigated the prevalence of depression and anxiety among patients affected by dermatological diseases ⁴⁻⁶. Some limited studies have been carried out on the existence of suicidal ideas among such patients ⁷⁻⁹. Besides, only a few reports exist regarding successful suicides ^{10,11}. Since there are not sufficient studies on the matter and that no such study has ever been carried out in Iran, the authors aimed at assessing the significance by performing a research study. We decided to evaluate the prevalence of depression and suicidal ideation among patients suffering from psoriasis, acne, alopecia areata and vitiligo to interpret the findings according to clinical and demographic factors.

PATIENTS AND METHODS

This descriptive study was carried out in the dermatology clinic of Ghaem Hospital, Mashad, starting from October 2005 through May 2006. Three hundred patients who were suffering from psoriasis (62), acne vulgaris (78), alopecia areata (73) and vitiligo (87) were included in the study. The criteria for participation were: 1) having at least one of the diseases under investigation; 2) showing willingness to participate and filling out an informed consent; 3) educational level of at least junior high school; 4) having no history of being hospitalized in any psychiatric hospital, no background of cognitive disorders, brain damage or epilepsy; 5) having not used alcohol and narcotic drugs for at least one month before participating in the study. Those who did not completely fill out Beck Depression Inventory (BDI) and/or the demographic questionnaire were excluded.

Collecting data was completed in two sections. First, the participants were asked to fill out a demographic questionnaire including questions regarding their individual characteristics like name, age, sex, marital status, education, residential status and the kind of skin disease they were affected by. In the second section, the subjects of the study were given BDI forms to fill out, providing information about such variables as depression and suicidal ideation. There are two types of BDI tests: BDI-1 and BDI-2. Considering the several studies done on this issue, BDI-1 was considered to fit best for this study. There are 21 questions in the inventory with 4 possible answer choices to each question. The scores range from 0 to 3, summing up a total of 63.

Using BDI-1 to decide for the degree of depression, the participants who scored lower than 9 were determined as having minor depression; those who scored 10-16 as mild, the scores of 17-29 as moderate and finally the scores ranging from 30 to 63 were considered as severe depression. The subjects' answers regarding having suicidal ideas were also evaluated based on their answers to one of the questions in Beck Inventory. The four choices were: 0) "I never think about suicide." 1) "I have thought about committing suicide, but I have never put them into practice." 3) I would kill myself if I ever got the chance." It is worth mentioning that BDI-1 has been approved to fit the

standards of Iranian society with the same scoring system as used for other international studies¹². Having collected the data, we then evaluated them through statistical analytic tests like ANOVA and T-test, using SPSS software.

RESULTS

In respect to the demographical information obtained from the participants of this study, 107 (35.7%) of all 300 qualified subjects were females while the other 193 (64.3%) were males. Based on the results of chi square test, the number of male participants was significantly more than females. In terms of their age, patients ranged from 11 to 64 years old with a mean age of 26.55 ± 10.81 years. They were most frequently distributed in the range of 20 to 29 years of age (142 subjects (47.3%)). As for their marital status, 154 (51.3%) were single, 143 (47.7%) were married and the other 3 (1%) were divorced. One hundred and five (35%) patients did not have a high school diploma; 115 (38.3%) had a high school diploma and the remaining 80 (26.7%) had a bachelor's degree or higher. In terms of their residential status, 286 (95.3%) were residing in the cities while 14 (4.7%) were from rural areas.

As for the type of dermatological disease by which they were inflicted, 78 (26%) were suffering from acnes; 62 (20.7%) from psoriasis; 87 (29%) from vitiligo and 73 (24.3%) had alopecia areata, among whom 12 (4%) were affected by the diffuse type; 5 (1.7%) by universalis; 8 (2.7%) by ophiasis and the remaining 48 (16%) had localized alopecia areata. The average percentage of the body covered by the disease was $15.55 \pm 22.57\%$ for psoriasis ranging from 2% to 90%. In cases of vitiligo, $10.67 \pm 15.64\%$ of the body was affected with a range of 1% to 90%. Regarding the duration of the diseases, the mean duration was found to be 5.34 ± 6.18 years

ranging from one week to 30 years. Ninety five (31.7%) patients were reported to have the disease running down in their families.

According to the results of Beck Inventory, the patients were identified by the existence and the rate of depression. One hundred and nine (36.3%) patients were found to have minor depression; 73 (24.3%) were identified with mild, 80 (26.7%) with moderate and the remaining 38 patients (12.7%) had severe depression. All such patients were divided into two groups: those identified with clinical depression (191 or 63.7%) and the ones who only had minor depression (109 or 36.3%).

Studying their suicidal ideas revealed that 265 (88.3%) were not mentally engaged with such thoughts; however, 19 (6.3%) patients had thought about suicide but had never put their suicidal ideas into practice while 12 (4%) patients expressed their willingness to commit suicide if they ever got the chance to do so.

As the results of chi square test analysis, there was a significant difference in the prevalence rate of different types of depression and the kind of skin disease the patients had ($P=0.001$). As shown in Table 1, severe depression was most frequently observed in patients with diffuse alopecia areata, localized alopecia and vitiligo, respectively.

There was also a significant relationship between the prevalence of different kinds of dermatological diseases and the existence of clinical depression. Those affected by vitiligo were found to mostly have clinical depression, followed by patients with alopecia areata ($P=0.008$).

Comparing the frequency rate of the existence of suicidal ideas in the patients according to their type of skin disease, the results of chi square test showed a significant difference ($P=0.001$). Having ideas about suicide was most prevalent in the patients who were suffering from alopecia areata

Table 1. Percentage and frequency rate of depression according to the type of skin disease

Kind of disease	Minor depression		Mild depression		Moderate depression		Severe depression	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Acnes	41	52.6	13	16.7	17	9	7	9
Psoriasis	19	30.6	22	35.5	19	3.2	2	3.2
Vitiligo	26	29.9	21	24.1	26	16.1	14	16.1
Alopecia areata								
Diffuse	6	50	0	0	3	25	3	25
Universal	2	40	0	0	3	60	0	0
Ophiasis	0	0	8	100	0	0	0	0
Localized	15	31.3	9	18.8	12	25	12	25

Table 2. Prevalence of suicidal ideation according to the type of skin disease

Kind of Skin disease	Lack of suicidal ideation		Existence of suicidal ideation	
	Frequency	Percentage	Frequency	Percentage
Acnes	76	97.4	2	2.6
Psoriasis	60	96.8	2	3.2
Vitiligo	71	81.6	16	18.4
Alopecia areata				
Diffuse	9	75	3	25
Universalis	2	40	3	60
Ophiasis	8	100	0	0
Localized	39	81.3	9	18

universalis, diffuse and finally vitiligo, respectively.

As for the participants' answers to questions regarding the acuteness of the existing thoughts of suicide, a significant relationship was found between their answers and the kind of disease they had ($P=0.001$). The results showed that such ideas existed most frequently in patients with diffuse alopecia areata and vitiligo, respectively.

Through a test of variance analysis, it was found that there was no relationship between age and the prevalence of depression of any kind ($P=0.525$). On average, those who were affected by clinically not important (subclinical depression), mild, moderate and severe depression aged 27.49 ± 12.33 , 25.84 ± 11.58 , 25.45 ± 8.4 and 27.5 ± 9.11 years, respectively. In the same way, no relationship was found between the existence of suicidal ideas and age ($P=0.322$). The mean age of the patients with suicide ideas was 28.25 ± 1.73 and those without such ideas had a mean age of 26.32 ± 0.66 years.

However, a comparison between the prevalence of depression with different degrees and sex proved that there was a significant difference between these two in a way that females were more affected by depression ($P=0.006$). However, there was no statistically significant difference between males and females in terms of having suicidal ideas ($P=0.345$).

And finally, different degrees of depression and suicidal ideation were found to have a significant relationship with the level of education ($P=0.001$ and $P=0.002$, respectively) in a way that those with a bachelor's degree and above were less affected by severe depression and having suicidal ideas.

DISCUSSION

In this study, we used Beck Depression Inventory

(BDI) to investigate the prevalence of depression syndrome as well as that of suicidal ideation in patients who were affected by dermatological diseases which particularly cause some problematic changes in body image and appearance. Having compared the participants' scores obtained from BDI, the study showed that the severe type of depression showed itself most in the patients with alopecia areata and vitiligo, respectively. As for the frequency rate of depression, alopecia areata ophiasis was found to be the most prevalent followed by vitiligo, psoriasis and localized alopecia areata. These findings do not conform to those found by Gupta⁸. Gupta used the CRSD questionnaire, which is in close relation with BDI¹³, and found that psoriasis and non-cystic acne were most frequently related to depression, respectively⁸. Depression at its clinical level was found by our study to be most frequent in the patients with universalis alopecia areata followed by the localized and diffuse types. These findings are also different from those of Gupta's study. The reason might be the fact that our patients were deprived from having access to supportive facilities against alopecia due to their relatively low financial and social status. Thus, losing hair may appear as a very big change which negatively affects their body image, resulting in disappointment which itself is one of the major factors in causing depression.

In our study, acnes were highly prevalent among the young who were also highly affected by minor depression, a syndrome known as adjustment disorder. In Gupta's study, also, the young and teenagers with acnes of slight to medium rate of acuteness showed a high degree of depression⁸. All these findings provide evidence for the assumption that the youngsters, even with slight degrees of skin diseases, are typically more prone to depression.

Thus, one needs to consider the individual's life and their stage of development while investigating the effect of skin disease on their body self-image, since the young and adolescents are more apt to have difficulty in coping with beauty problems resulting from their dermatological disease. The same idea is also confirmed by another study who suggested that the young patients with psoriasis had more difficulty coping with problems in their life as compared to the elderly suffering from the same disease⁸. Sayar⁶ also concluded that acne vulgaris patients had difficulty coping with life problems as a result of their skin disease. The studies carried out by Kokcam et al,⁴ show the high prevalence of depression and anxiety in vitiligo and alopecia areata patients which all agree with our findings. In another study, Sharma et al,⁵ used a standardized test of Hinde to find that the prevalence rate of depression was 23.3% and 10% in psoriasis and vitiligo patients, respectively. It seems that beside the dermatological exams and remedies that alopecia and vitiligo patients receive, they need to undergo psychiatric observations and treatments, as well.

In our study, depression was significantly higher in females with skin diseases which is similar to the findings of a study by Picardi et al¹⁴. One may attribute such findings to the general higher rate of depression among females; however, it seems that chronic skin manifestations in females are usually associated with greater psychological burden and a feeling of loss; thus, more attention should be paid to the psychological aspects of dermatological diseases in this group.

Comparison of the relationship between the patients' average age and the level of depression showed no difference in the average age of 40 -as the highest prevalence age of depression- in our society. However, our patients were not normally distributed in terms of their age, making it difficult to compare their average age with that of the society.

As shown by our study, the prevalence of suicidal ideation in psoriasis patients was 3.2% while Picardi reported a prevalence of 10%⁹ and Gupta found it to be 7.2%⁸. We may reason the differences by the fact that those participants in our study were only out-patients whereas the other two studies included in-patients, as well. Besides, the materials we used for our study were different from those used in their studies. As a whole, hospitalization

seems to be a risk factor for developing suicide ideas in psoriasis patients; therefore, psychiatric consultation and psychological support should be considered for hospitalized psoriasis patients.

Using Beck questionnaire in their study, Zachariac et al,⁷ found that 21% of the psoriasis patients and 19% of their patients with atopic dermatitis were mentally engaged with suicide ideas. In our study, 2.6% of the patients suffering from acnes had suicidal ideation while the findings of a study in Pakistan suggest a rate of 8%¹⁵ and Gupta⁸ found a rate of 5.6%. The differences may be attributed to the differences in cultural conditions, sample size or the degree of acuteness of the disease. Still, in another comparison, we encountered some other differences between our findings and those of Gupta's. We found a significant relationship between the existence of suicide ideas and different kinds of alopecia areata in a way that in a total of 73 alopecia areata patients, 60% of those with universalis, 25% of totalized patients and 18% of the cases with localized alopecia had suicide ideas. However, Gupta showed that none of the patients affected by alopecia areata of any kind had suicidal ideas⁸. We may find the underlying reasons in the differences of sex and socio-economic conditions, as well as the lack of supportive provisions in our country to help such patients overcome the loss.

There was no statistically significant relationship between the existence of suicide ideas in our study subjects and their sex which is also supported by other studies^{16,17}. However, Picardi⁹ found it more prevalent in females and attributed the cause to the psychiatric disorders and psychological distress of the time.

As a whole, our findings indicated that socio-psychological disorders might be closely correlated with acute and chronic dermatological disease; thereby, acknowledging the importance of well-timed diagnosis of such problems, especially depression and suicide ideation, in such patients. The main risk factors for depression and suicide in our study were the female sex, low educational levels and alopecia.

The most interesting point of our study was the remarkable difference seen between our findings and those of other studies in terms of the prevalence of depression and suicidal ideation in patients with dermatological diseases, in which alopecia was found as the disease with the highest prevalence

of depression and suicidal ideation while it is not as so in other societies.

Finally, in order to obtain more reliable results that could be generalized to the whole society, we recommend further studies to be carried out with more accurate sampling methods through matching the samples by their age, sex, education and residential area. Also, more complete questionnaires should be used besides Beck. Conducting clinical interviews would also be highly recommended, if possible.

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