

Comorbidity of Psychiatric Disorders in Patients With Skin Diseases

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Psychiatric disorders were present in every group of patients with skin diseases such as eczema, psoriasis, and acne. The study's objective was to investigate the comorbidity of psychiatric disorders and gender differences in patients with eczema, psoriasis and acne in Lahore, Pakistan. With purposive sampling a total of 150 patients (including 50 eczema, 50 psoriasis and 50 acne patients) was acquired. A diagnostic questionnaire for psychiatric disorders (Rehman et al., 2008) was administered along with a demographic form. Overall, the prevalence of body dysmorphic disorder was highest among the patients with eczema, psoriasis and acne; however, generalised anxiety disorder and major depression disorder were the second and third highest prevailing psychiatric disorders. Significant gender differences were found only in hypochondriasis among research participants with eczema, psoriasis, and acne. It was concluded that these patients suffer from different psychiatric disorders; therefore, they should be treated with a psycho dermatological approach to improve their clinical condition.

Keywords: Skin diseases, eczema, psoriasis, acne patients, mental health, psychiatric disorders

Skin diseases are present worldwide and affect almost 30% to 70% of individuals at least one point in life (Bickers et al., 2006; Hay & Fuller, 2011). Among these, eczema, psoriasis, and acne are considered the most common. Eczema is a chronic, lingering skin disorder involving scaly and itchy rashes. It is a form of dermatitis or inflammation of the upper layers of the skin (Burton & Holden, 1992). Individuals may have this condition from childhood to adulthood (Houfort et al., 2002).

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Nevertheless, psoriasis is a common genetic inflammatory skin disease. Skin patches may be identified as chronic, sharply differentiated areas of dull red, scaly plaques on the muscles (Olivier et al., 2010). It is a common disease that affects people worldwide, irrespective of gender (Houliort et al., 2002). However, acne is characterized by a minor, though infrequently severe, skin eruptions due to inflammation around the sebaceous glands. Acne may occur between the ages of 14 to 17 years but may persist until the age of 34 years (Rezazadebazaz et al., 2013). These skin diseases are strongly associated with psychiatric disorders (Basra & Shahrukh, 2009; Hughes et al., 1983; Picardi et al., 2006). The literature suggests that almost one-third of dermatological disorders have psychiatric comorbidity (Picardi et al., 2006). It has been actively reported in patients with skin disorders, with one-third of dermatologic disorders having a serious prevalence of psychiatric disorders (Chiang et al., 2015; Jose et al., 2017). Literature indicates that patients with eczema and psoriasis are at a high risk of depression (Dalgard et al., 2008; Dowlatshahi et al., 2014; Onderdijk et al., 2013; Sanna et al., 2014). Research further suggests that these patients also experience anxiety as a comorbidity of depression (Boehm et al., 2012; Fried et al., 2005; Magin et al., 2008) as well as suicidal thoughts (Dieris-Hirche et al., 2009; Halvorsen et al., 2014; Holden & Subrahmanyam, 1992).

Another research found that patients with psoriasis may have adjustment disorders, somatoform disorders, anxiety disorders, depressive disorders, and delusional disorders (Gaikwad, 2006). Patients with psoriasis also experienced anxiety and depression; however, the literature suggested that the magnitude of the anxiety and depression may be influenced by the severity and duration of the illness (Schut et al., 2016). Similarly, research conducted in the USA with skin patients identified that 32% were facing depression, 15.5% had adjustment disorders, 13.4% suffered from anxiety, 10.3% had psychosomatic disorders, and 5.1% had OCD (Seyhan et al., 2006). A study by Cotterill and Cunliffe (1997) evaluated psychiatric comorbidity in psoriasis vulgaris and urticaria patients and found depression in 28% and 30% of the patients respectively. Cotterill and Cunliffe (1997) found that patients with long-lasting dermatological diseases had a severe level of depression along with a high risk of suicide. Research from India indicated that 25% of patients with vitiligo experienced adjustment disorder (Mattoo et al., 2002). In reference to gender differences in comorbid psychiatric disorders with dermatological conditions, an Australian study reported depression and stress symptoms in females with skin problems (Magin et al., 2009). Similar results have been reported by a study conducted in

India (Mina et al., 2015). Accordingly, Cotterill and Cunliffe (1997) explained that women with facial complaints and men with facial scars were at a higher risk of suicide. However, no gender differences were reported in other studies on the measure of depression and anxiety scale scores for patients with skin diseases (Boehm et al., 2012; Vincent et al., 2005).

In short, literature suggested that psychiatry disorders have prevailed in the patient with skin diseases and mixed results are present in gender differences. Few advocated that females have more psychological distress than male patients with skin diseases, while others suggested no gender difference. It is worth mentioning that most research has been conducted in developed countries, and less is known from developing countries. Therefore, it is crucial to study this context because patients with skin diseases in Muslim countries might face different psychosocial pressures from those living in Europe and America. For example, patients with visible skin disorders e.g., eczema, psoriasis, or acne, have experienced stigma as mostly Muslims consider skin diseases a curse from God (Bilcha, 2021; Rumsey, 2017). Consequently, they may experience different psychological disorders due to living in different religious and cultural contexts. Moreover, a lack of awareness about the causes of skin problems in developing countries may indicate a poor prognosis (Buster et al., 2012). The aim of this study was to examine the prevalence rates of psychiatric disorders and gender differences in psychiatric disorder in patients with eczema, psoriasis, and acne.

Method

Design and Sampling

Between research group design was used to find the gender difference in psychiatric disorders in patients with acne, eczema, and psoriasis. Data was collected through purposive sampling; 150 (50 acne, 50 eczemas, 50 psoriasis), individuals (men = 73, women = 77) were selected with an age range of 19-50 years old. Most participants (43.3%) had a degree education, and 23.4% had a skilled job. Half of them were unmarried (50.7%). The reported severity levels of their skin disease were mild (34%), moderate (42.7%), and severe (23.3%). The reported duration of illness was one year (34%), 2 years (23%), and more than 3 years (43%).

Measure

Along with demographic variables like age, gender, education, type of skin disease, severity, and duration of illness, the Diagnostic Questionnaire for Psychological Disorders (Rehman et al., 2008) was used to assess psychiatric disorders in Urdu. This diagnostic questionnaire has two primary forms, one for adult males and another for adult females and was based on DMS-IV-TR. The diagnostic criteria for somatoform disorder, hypochondriasis, conversion disorder, pain disorder, body dysmorphic disorder, generalized anxiety disorder, post-traumatic stress disorder, obsessive-compulsive disorder, social phobia, specific phobia, panic disorder, agoraphobia, major depression, dysthymia, manic disorder, hypomania, schizophrenia, and adjustment disorder was translated into Urdu by using the MAPI procedure. The responses were taken on 5-point Likert scale (where, 0 = *not at all* and 4 = *very much*). The overall reliability of .70 was achieved for the scale in the present study.

Procedure

The research project was approved by the ethical committee of the Centre for Clinical Psychology, the University of the Punjab, Lahore. Before approaching patients at four main government hospitals in Lahore, permission was sought and granted from the head of the dermatological department to conduct this research. As well as permission was sought from the authors of the used psychological tools. As well as, the potential participants were informed about the study, and only those were recruited who gave written consent.

At each hospital, research participants were approached through the dermatology outpatient department. Only those patients approached who were diagnosed with acne, eczema, or psoriasis by dermatologists were above age 18, and able to read and understand the native language, Urdu. Patients with a previous history of psychological illness and physical disease at the time of conducting the research were excluded.

Results

Prevalence was calculated through descriptive analysis by using percentages and frequencies. As data was in frequency; therefore, the chi-square test of independence was used to compare the frequency of psychiatric disorders in male and female patients. It is important to report that where the expected frequency was less than 5, results were

reported according to the p-value for the two-way Fisher's exact test rather than Pearson Chi-Square (Field, 2013).

Table 1

Frequencies and Percentages of Patients with Skin Diseases from Diagnostic Questionnaire of Mental Health (N=150)

Psychiatric Disorders	Eczema (n = 50)		Psoriasis (n = 50)		Acne (n = 50)		Total (150)	
	f	%	f	%	f	%	f	%
Somatoform Disorder	1	2	3	6	1	2	5	3
Hypochondriasis	8	16	6	12	5	10	19	13
Conversion Disorder	1	2	0	0	0	0	1	2
Pain Disorder	4	8	2	4	2	4	8	5
Body Dysmorphic Disorder	8	16	11	22	14	28	33	22
Generalized Anxiety Disorder	9	18	8	16	12	24	29	19
Post-traumatic Stress Disorder	2	4	2	4	1	2	5	3
Obsessive Compulsive Disorder	7	14	7	14	8	16	22	15
Social Phobia	6	12	3	6	2	4	11	7
Specific Phobia	4	8	1	2	1	2	6	4
Panic Disorder	5	10	2	4	0	0	7	5
Agora Phobia	2	4	2	4	0	0	4	3
Major Depression	12	24	6	12	8	16	26	17
Dysthymia	0	0	1	0	0	0	1	0.7
Manic Disorder	1	2	0	0	0	0	1	0.7
Hypomania	0	0	0	0	0	0	0	0
Schizophrenia	0	0	1	2	0	0	1	0.7
Adjustment Disorder	3	6	1	2	2	4	6	4

Table 1 shows the prevalence of psychiatric disorders in patients with eczema, psoriasis, and acne. It is worth noting that major depression was found in 24%, 12% and 16% of patients with eczema, psoriasis, and acne respectively. Generalized anxiety disorder was present in 18%, 16%, and 24% of patients with eczema, psoriasis, and acne, respectively. Hypochondriasis was reported by 16%, 12%, and 10% of patients with eczema, psoriasis, and acne, respectively. Body dysmorphic disorder was found in 16%, 22%, and 28% of patients with eczema, psoriasis, and acne, respectively. Obsessive-compulsive disorder was reported by 14%, 14%, and 16% of patients with eczema, psoriasis, and acne, respectively. Overall, the prevalence of body dysmorphic disorder (22%) was highest among the patients with eczema, psoriasis, and acne; however, generalized anxiety disorder

(19%) and major depressive disorder (17%) were the second and third highest prevailing psychiatric disorders.

Table 2

Chi-Square For Psychiatric Disorders of Gender For Patients With Eczema, Psoriasis, and Acne (N=150)

<i>Psychiatric Disorders</i>	Male (<i>n</i> =73)	Female (<i>n</i> = 77)	χ^2	<i>p</i>
Somatoform Disorder	0	5	-	.05 ^a
Hypochondriasis	15	4	-	.00 ^a
Conversion Disorder	0	1	-	1.00 ^a
Pain Disorder	3	5	-	.72 ^a
Body Dysmorphic	17	16	.14	.71
Generalised Anxiety Disorder	16	13	.61	.44
Post-traumatic Stress disorder	3	2	-	.67 ^a
Obsessive Compulsive Disorder	12	13	.36	.55
Social Phobia	7	5	1.07	.30
Specific Phobia	4	2	-	.43 ^a
Panic Disorder	2	5	-	.44 ^a
Agora Phobia	1	3	-	.62 ^a
Major Depression	9	17	2.49	.115
Dysthymia	0	1	-	1.00 ^a
Mania Disorder	0	1	-	1.00 ^a
Hypomania	0	0	0	0
Schizophrenia	0	1	-	1.00 ^a
Adjustment Disorder	5	1	-	.11 ^a

Note. *df* =1. a = Two Way Fisher's Exact Test.

Significant gender association was found only in hypochondriasis among the research participants. Hypochondriasis prevailed at a high level in male patients with eczema, psoriasis, and acne (20.5%) compared to women (5.2%). However, a marginal significant relationship was found between gender and somatoform disorder ($p = .05$). Precisely, female patients with eczema, psoriasis and acne had a high level of diagnosis of somatoform disorder (6.5%) as compared to men (0%).

Discussion

In this study, the highest prevalence of disorders in patients with eczema, psoriasis and acne was for body dysmorphic disorder, generalized anxiety disorder, and major depressive disorder. The literature showed that patients with skin disease have a prevalence of

psychiatric disorders (Schut et al., 2016). Most European research reported that the occurrence of depression associated with the dermatological disease is common (Gupta, 2002). However, in this study, most of the research participants experienced body dysmorphic disorder, which may reveal cultural differences, as in South Asian countries, a stigma associated with body image (Mattoo, 2002).

Furthermore, in this study, major depression was highly reported by patients with eczema as compared to patients with psoriasis and acne. It is in line with previous studies, which the estimated occurrence of depression in patients with eczema range from 15% to 38% (Huges et al., 1983; Marron et al., 2018). Moreover, body dysmorphic disorder, generalized anxiety, and obsessive-compulsive disorder were found to be highly prevalent in patients with acne and psoriasis respectively. This is in accordance to previous literature, which suggested that depression and anxiety were highly prevalent disorders in patients with this specific skin disease, including psoriasis and acne (Nair & Riaz 2018; Samuels et al., 2020; Yazici et al., 2004). In addition, the literature also suggested that patients with acne have body dysmorphic disorder and indulge in compulsive acts of skin picking (Sorour et al., 2017; Wilhelm et al., 1999). However, it is difficult to suggest from these results whether they pick their skin to smooth out because they have body dysmorphic disorder or clean their skin because they have obsessive compulsive disorder (Castle et al., 2004).

On the other hand, only hypochondriasis is found to be associated with gender, and male participants with eczema, psoriasis, and acne experienced more hypochondriasis than female participants. This can be explained in the cultural context as people have less trust in the expertise of dermatologists when they do not achieve instant results from the treatment. That is why they may believe that they are experiencing some dangerous illness and keep repeatedly changing their dermatologist. Moreover, a significant marginal association was also found between gender and somatoform disorder. It demonstrated that female participants scored higher on somatoform than men. The result was supported by previous work, which showed that women with dermatological conditions scored higher on somatization disorder than men (Fishbain et al., 1986). On other psychiatric disorders, nonsignificant gender association was found, which exhibited no gender difference supported by previous literature (Boehm et al., 2012; Marron et al., 2018).

In short, the current study's results indicated that patients with skin diseases experience more problems related to appearance. Most people in Pakistan are ignorant about the causes of skin diseases and

appraise them as contagious or curse from God. Therefore, these patients may experience more social stigma when they try to establish a social relationship and start their careers, as in South Asian countries more emphasis is given to body image (Gupta, 2002). Furthermore, patients with skin diseases, especially psoriasis, have feelings of physical and sexual unattractiveness and often experience shame or embarrassment (McKenna & Stern, 1997). Therefore, it is important that not only skin conditions should be considered at the time of treatment, but physical, psychological, and social aspects should also be considered. Hence, there is a need to conduct further studies to understand the effects of the disease on the patient's life in Pakistan.

Limitations and Recommendations

The present study has certain limitations. For example, due to its limited sample size, its generalizability was limited; therefore, in future study sample should be large. Moreover, certain associated factors (e.g., family and academic stress) that may have exacerbated the psychological disorders were not assessed, so in future studies, these factors should be considered. Moreover, eczema and psoriasis are diseases that stay longer and affect a larger area of the body than acne, which affects a small area and has a short disease course. Similarly, the severity of the disease may also affect the intensity of the psychological burden; therefore, in future studies effect of the course of disease and the severity of skin diseases should be considered.

Implications

Based on the results of the present study, it is suggested that it is essential to provide psychoeducation to dermatologists about the diagnostic procedure and therapy for psychiatric disorders that may co-exist with various skin diseases. In this way, the patient can benefit from psychological counselling to deal with comorbid psychiatric problems with their skin problems. It is, therefore, suggested that skin specialists should use biopsychosocial model to treat their patients in order to improve their psychological well-being. Moreover, the study's strength lies in the fact that research participants were assessed for psychiatric disorders by researchers, who were clinical psychologists, and dermatological illnesses were diagnosed by dermatologists, which increased the reliability of the results.

Conclusion

The present study's results confirmed the previous findings and showed that body dysmorphic disorder was the most prevalent disorder among patients with eczema, psoriasis, and acne. Moreover, hypochondriasis was the most prevalent in male patients in Pakistan. These findings demonstrated the cultural differences between European and South Asian countries, where the culture emphasizes body image. This study also highlighted that assessment of psychiatric comorbidity in patients with dermatological conditions is required for better patient clinical management.

References

- Basra, M. K., & Shahrukh, M. (2009). Burden of skin diseases. *Expert Review of Pharmacoeconomics and Outcomes Research*, 9(3), 271-283.
- Bickers, D. R., Lim, H. W., Margolis, D., Weinstock, M. A., Goodman, C., Faulkner, E., ... & Dall, T. (2006). The burden of skin diseases: A joint project of the American Academy of Dermatology Association and the Society for Investigative Dermatology. *Journal of the American Academy of Dermatology*, 55(3), 490-500.
- Bilcha, K. (2021). Cultural competence in dermatology: A treatment for every patient. *Practical Dermatology*, 74(1) 25-27.
- Boehm, D., Schmid-Ott, G., Finkeldey, F., John, S. M., Dwinger, C., Werfel, T., & Breuer, K. (2012). Anxiety, depression and impaired health-related quality of life in patients with occupational hand eczema. *Contact Dermatitis*, 67(4), 184-192.
- Buster, K. J., Stevens, E. I., & Elmets, C. A. (2012). Dermatologic health disparities. *Dermatologic Clinics*, 30(1), 53-59.
- Castle, D. J., Phillips, K. A., & Dufresne Jr, R. G. (2004). Body dysmorphic disorder and cosmetic dermatology: More than skin deep. *Journal of Cosmetic Dermatology*, 3(2), 99-103.
- Chiang, Y. Z., Bundy, C., Griffiths, C. E. M., Paus, R., & Harries, M. J. (2015). The role of beliefs: Lessons from a pilot study on illness perception, psychological distress and quality of life in patients with primary cicatricial alopecia. *British Journal of Dermatology*, 172(1), 130-137.
- Cotterill, J. A., & Cunliffe, W. J. (1997). Suicide in dermatological patients. *British Journal of Dermatology*, 137(2), 246-250.
- Dalgard, F., Gieler, U., Holm, J. Ø., Bjertness, E., & Hauser, S. (2008). Self-esteem and body satisfaction among late adolescents with acne: Results from a population survey. *Journal of the American Academy of Dermatology*, 59(5), 746-751.

- Dieris-Hirche, J., Gieler, U., Kupfer, J. P., & Milch, W. E. (2009). Suicidal ideation, anxiety and depression in adult patients with atopic dermatitis. *The Dermatologist*, *60*(8), 641-646.
- Dowlatshahi, E. A., Wakkee, M., Arends, L. R., & Nijsten, T. (2014). The prevalence and odds of depressive symptoms and clinical depression in psoriasis patients: A systematic review and meta-analysis. *Journal of Investigative Dermatology*, *134*(6), 1542-1551.
- Field, A. (2013). *Discovering statistics using SPSS statistics*. London: Sage
- Fishbain, D. A., Goldberg, M., Meagher, B. R., Steele, R., & Rosomoff, H. (1986). Male and female chronic pain patients categorized by DSM-III psychiatric diagnostic criteria. *Pain*, *26*(2), 181-197.
- Fried, R. G., Gupta, M. A., & Gupta, A. K. (2005). Depression and skin disease. *Dermatologic Clinics*, *23*(4), 657-664.
- Gaikwad, R., Deshpande, S., Raje, S., Dhamdhare, D. V., & Ghate, M. R. (2006). Evaluation of functional impairment in psoriasis. *Indian Journal of Dermatology, Venereology, and Leprology*, *72*(1), 37-48.
- Gupta, M. A. (2002). Psychosocial aspects of common skin diseases. *Canadian Family Physician*, *48*(6), 660-670.
- Halvorsen, J. A., Lien, L., Dalgard, F., Bjertness, E., & Stern, R. S. (2014). Suicidal ideation, mental health problems, and social function in adolescents with eczema: A population-based study. *Journal of Investigative Dermatology*, *134*(7), 1847-1854.
- Hay, R. J., & Fuller, L. C. (2011). The assessment of dermatological needs in resource-poor regions. *International Journal of Dermatology*, *50*(5), 552-557.
- Holden, C. W., & Subrahmanyam, A. (1992). Long-lived private information and imperfect competition. *The Journal of Finance*, *47*(1), 247-270.
- Houliort, N., Koestner, R., Joussemet, M., Nantel-Vivier, A., & Lekes, N. (2002). The impact of performance-contingent rewards on perceived autonomy and competence. *Motivation and Emotion*, *26*(4), 279-295.
- Hughes, G. R. (1983). Thrombosis, abortion, cerebral disease, and the lupus anticoagulant. *British Medical Journal*, *287*(6399), 1088-1098.
- Jose, M. R., & Menon, S. B. (2017). Cognitive emotional regulation, perceived stress and psychological general well-being in patients with skin diseases: A comparative study. *The International Journal of Indian Psychology*, *4*(4), 5-19.
- Magin, P., Sibbritt, D., & Bailey, K. (2009). The relationship between psychiatric illnesses and skin disease: A longitudinal analysis of young Australian women. *Archives of Dermatology*, *145*(8), 896-902.
- Magin, R. L., Abdullah, O., Baleanu, D., & Zhou, X. J. (2008). Anomalous diffusion expressed through fractional order differential operators in the Bloch-Torrey equation. *Journal of Magnetic Resonance*, *190*(2), 255-270.

- Marron, S. E., Tomas-Aragones, L., Navarro-Lopez, J., Gieler, U., Kupfer, J., Dalgard, F. J., ... & Szepietowski, J. C. (2018). The psychosocial burden of hand eczema: data from a European dermatological multicenter study. *Contact Dermatitis*, 78(6), 406-412.
- Mattoo, S. K., Handa, S., Kaur, I., Gupta, N., & Malhotra, R. (2002). Psychiatric morbidity in vitiligo: Prevalence and correlates in India. *Journal of the European Academy of Dermatology and Venereology*, 16(6), 573-578.
- McKenna, K. E., & Stern, R. S. (1997). The impact of psoriasis on the quality of life of patients from the 16-center PUVA follow-up cohort. *Journal of the American Academy of Dermatology*, 36(3), 388-394.
- Mina, S., Jabeen, M., Singh, S., & Verma, R. (2015). Gender differences in depression and anxiety among atopic dermatitis patients. *Indian Journal of Dermatology*, 60(2), 211-220.
- Nair, S., & Riaz, O. (2018). Psoriasis and Its Correlation with Depression and Body Image: Case Report. *Clinics in Oncology*, 3(1), 1-3.
- Olivier, C., Robert, P. D., Daihung, D. O., Urbà, G., Catalin, M. P., Hywel, W., ...& Gelfand, J. M. (2010). The risk of depression, anxiety, and suicidality in patients with psoriasis: A population-based cohort study. *Archives of dermatology*, 146(8), 891-895.
- Onderdijk, A. J., Van der Zee, H. H., Esmann, S., Lophaven, S., Dufour, D. N., Jemec, G. B. E., & Boer, J. (2013). Depression in patients with hidradenitissuppurativa. *Journal of the European Academy of Dermatology and Venereology*, 27(4), 473-478.
- Picardi, A., Mazzotti, E., & Pasquini, P. (2006). Prevalence and correlates of suicidal ideation among patients with skin disease. *Journal of the American Academy of Dermatology*, 54(3), 420-426.
- Rehman, N., Sitwat, A., Dawood, S., Ashraf, M., (2008). *Diagnostic Questionnaire for Mental Health*. Un-Published Article on the diagnostic questionnaire for psychological Disorders in Urdu.
- RezazadeBazaz, M., Mashreghi, M., MahdaviShahri, N., Mashreghi, M., Asoodeh, A., BehnamRassouli, M., & Golmohammadzadeh, S. (2013). Pharmaceutical application of frog skin on full-thickness skin wound healing in mice. *Pharmaceutical Biology*, 51(12), 1600-1606.
- Rumsey N. (2017). Psychosocial adjustment to skin conditions resulting in visible difference (disfigurement): What do we know? Why don't we know more? How shall we move forward? *International Journal of Women Dermatology*, 4(1), 2-7.
- Samuels, D. V., Rosenthal, R., Lin, R., Chaudhari, S., & Natsuaki, M. N. (2020). Acne vulgaris and risk of depression and anxiety: A meta-analytic review. *Journal of the American Academy of Dermatology*, 83(2), 532-541. doi.org/10.1016/j.jaad.2020.02.040.
- Sanna, L., Stuart, A. L., Pasco, J. A., Jacka, F. N., Berk, M., Maes, M., & Williams, L. J. (2014). Atopic disorders and depression: Findings from

- a large, population-based study. *Journal of Affective Disorders*, 155, 261-265.
- Schut, C., Mollanazar, N. K., Kupfer, J., Gieler, U., & Yosipovitch, G. (2016). Psychological interventions in the treatment of chronic itch. *Journal of Dermatology and Venerology*, 96(2), 157-163.
- Seyhan, M., Aki, T., Karıncaoglu, Y., & Ozcan, H. (2006). Psychiatric morbidity in dermatology patients: Frequency and results of consultations. *Indian Journal of Dermatology*, 51(1), 18-30.
- Sorour, F., Abdelmoaty, A., Bahary, M. H., & El Birqdar, B. (2017). Psychiatric disorders associated with some chronic dermatologic diseases among a group of Egyptian dermatology outpatient clinic attendants. *Journal of the Egyptian Women's Dermatologic Society*, 14(1), 31-36. doi.org/10.1097/01.EWX.0000503397.22746.bd.
- Vincent, J. L., Nadel, S., Kutsogiannis, D. J., Gibney, R. N., Yan, S. B., Wyss, V. L., ... & Janes, J. M. (2005). Drotrecoginalfa (activated) in patients with severe sepsis presenting with purpurafulminans, meningitis, or meningococcal disease: A retrospective analysis of patients enrolled in recent clinical studies. *Critical Care*, 9(4), R331-43.
- Wilhelm, S., Keuthen, N. J., Deckersbach, T., Engelhard, I. M., Forker, A. E., Baer, L., & Jenike, M. A. (1999). Self-injurious skin picking: Clinical characteristics and comorbidity. *The Journal of Clinical Psychiatry*, 60(7), 454-459.
- Yazici, K., Baz, K., Yazici, A. E., Köktürk, A., Tot, S., Demirseren, D., & Buturak, V. (2004). Disease-specific quality of life is associated with anxiety and depression in patients with acne. *Journal of the European Academy of Dermatology and Venereology*, 18(4), 435-439.

Received 31 December 2021

Revision received 19 April 2022