

Original Research Article

Psoriasis and neurodermatitis: comparing psychopathology, quality of life and coping mechanisms

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ABSTRACT

Background: Both psoriasis and neurodermatitis patients report psychological distress and impaired quality of life, but how they cope with it is area of interest. The objective of this study was to study and compare psychopathology, quality of life and coping mechanism in psoriasis and neurodermatitis patients.

Methods: 30 cases each of psoriasis and neurodermatitis were assessed at dermatology out-patient department of a tertiary care hospital by using Symptom check list -90-Revised (SCL-90-R), dermatological life quality index (DLQI) and Brief cope scale (BCS).

Results: All Patients with neurodermatitis perceived it as a problem and in psoriasis it was 90%. The quality of life (QOL) was affected in both more in neurodermatitis as compared with psoriasis. Neurodermatitis showed significant psychopathology on SCL-90-Rin parameters of interpersonal sensitivity and Psychoticism. Depression, Anxiety, Somatisation, Obsessive-compulsiveness were seen in both groups. Self-blame, religion, positive-reframing were used commonly as coping mechanisms in neurodermatitis while in psoriasis there was acceptance, active coping, planning, and self-distraction, use of emotional and instrumental support, positive-reframing.

Conclusions: Quality of life is significantly lower in neurodermatitis. Psychopathologies were significantly high in neurodermatitis. Maladaptive coping styles were used in both groups.

Keywords: Coping mechanism, Quality of life, Neurodermatitis, Psoriasis, Psychopathology

INTRODUCTION

Skin is the largest organ of the body and also an organ of expression, it responds to emotion with blushing, pallor, piloerection, and perspiration. Brain and skin originate from the same germ layer, the embryonic ectoderm, and are affected by same hormones and neurotransmitters. Psychiatry is focused on the “internal visible disease” and dermatology is focused on “external visible disease”. The field of psycho-dermatology or psychocutaneous

medicine focuses on the interaction between the mind, the brain and the skin. The interaction between mind, brain and skin is variable. It's not uncommon for dermatological patients to suffer the psychosocial consequences of disfigurement; also psychopathological factors can play an etiological role in development of skin disorders and exacerbation of pre-existing skin disorders. Various studies have reported significant psychiatric and psychosocial comorbidity in at least 30 percent of dermatological patients.¹

Psychopathological disorders are highly prevalent among dermatology patients. The relationship between dermatological diseases and psychiatric morbidity can be established as follows:

- The appearance of skin lesions and the chronic progression of the disease may frequently affect the quality of social and work life of patients, thus, psychiatric morbidity may arise as a complication
- Less frequently, these skin diseases may result from primary psychological diseases as obsessive compulsive and delusional disorders
- Both the skin findings and psychiatric complaints may develop secondary to a disease such as systemic lupus erythematosus
- Some drugs, such as corticosteroids, used in dermatological treatment may trigger psychiatric symptoms, or lithium and some antipsychotic drugs may cause dermatological diseases.²

Chronic skin disorders have currently been assessed considering not only their physical aspect but also the related psychosocial issues. Both emotional and social factors have been taken into account by investigators with a multidisciplinary approach to health issues.³

Psoriasis is a chronic skin disease that affects approximately 2-3% of world population, with its onset in the second or third decade of life. This dermatosis fits the bio psychosocial model of etiology and is caused by the interaction of genetic (polygenic inheritance), environmental and psychological factors.⁴ Psoriasis is now recognized as severely impacting self-esteem, social and romantic prospects, and as promoting depression, seclusion, and generally affecting quality of life adversely. Stress has long been reported to trigger psoriasis.^{4,5} A theme running through the psoriasis literature is conveyed in the conclusion from a systematic review of psychosocial burden of psoriasis: Social stigmatization, high stress levels, physical limitations, depression, employment problems and other psychosocial co-morbidities experienced by patients with psoriasis are not always proportional to, or predicted by, other measurements of disease severity such as body surface area involvement or plaque severity.⁶ Many patients with psoriasis, particularly those with severe disease, are frustrated with the management of their disease and by the perceived ineffectiveness of their therapies. Psychosocial aspects are the current focus of research in chronic dermatoses and it may contribute to exacerbation of psoriasis in many cases.

Coping has been defined in psychological terms as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing" or "exceeding the resources of the person". Patients with psoriasis use specific coping strategies to deal with their skin disorder when compared to other patients with chronic skin disorders positive relationship among dyadic adjustment, psychological

morbidity and family coping in patients and their partners was found.⁷ Also, patients with lower levels of quality of life had partners with higher levels of depressive and anxious symptoms.⁸

Lichen simplex chronicus (LSC) or neurodermatitis as it is commonly known is an intensely pruritic rash, sharply localized to one or a few sites, characterized by thickening and exaggeration of the skin surface markings. Lichen simplex chronicus is a typical example of a habit leading to a dermatological problem. The patient scratches and rubs a skin lesion repetitively. Anxiety is common.⁸ Psychiatric symptoms appear relatively common among patients with LSC.⁹

METHODS

It was a cross sectional single interview study. The study samples were collected from Skin and Venereal Diseases Out-patient department of a tertiary care teaching municipal institute, Mumbai after obtaining Institutional Ethics committee approval. The sampling was purposive and 30 patients each diagnosed with psoriasis and neurodermatitis respectively were interviewed for data collection after taking written informed consent from each participant. The patients having diagnosed psychiatric illness, medical illness, other skin disorders or co-morbidities other than diagnosis of psoriasis and neurodermatitis were excluded from the study. Especially designed case record form was used for documenting sociodemographic and other relevant details. Following scales were used

Symptom checklist-90-R (SCL-90-R)

The symptom checklist-90-R (SCL-90-R) is a relatively brief self-report psychometric instrument (questionnaire) designed to evaluate a broad range of psychological problems and symptoms of psychopathology. It is also used in measuring the progress and outcome of psychiatric and psychological treatments or for research purposes.^{10,11} It consists of 90 items and takes 12-15 minutes to administer, yielding nine scores along primary symptom dimensions and three scores among global distress indices. The primary symptom dimensions that are assessed are somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism.

Dermatology life quality index (DLQI)

The dermatology life quality index questionnaire is designed for use in adults of dermatological disorders. It is self-explanatory and can be simply handed to the patient who is asked to fill it in without the need for detailed explanation. It is usually completed in one to two minutes.^{12,13} Its scoring is done as follows 0-1 = no effect at all on patient's life, 2-5 = small effect on patient's life, 6-10 = moderate effect on patient's life, 11-20 = very large effect on patient's life, 21-30 = extremely large

effect on patient's life. It takes in to consideration six parameter

- Symptoms and feelings
- Daily activities
- Leisure
- Work and school
- Personal relationship
- Treatment.

The Brief COPE

It is a self-report questionnaire used to assess a number of different coping behaviors and thoughts a person may have in response to a specific situation. It is made up of 14 subscales: self-distraction, active coping, denial, and substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. After reading a situation-specific scenario, 28 coping behaviors and thoughts (2 items for each subscale) are rated on frequency of use by the participant with a scale of 1 (-I haven't been doing this at all) to 4 (-I've been doing this a lot). Internal reliabilities for the 14 subscales range from $\alpha = 0.57-0.90$.¹⁴ The scale of an item ranges from one ('not at all') to four ('a lot') and that of an area, obtained by summing two items, from two to eight. The coping style of dermatologists was

defined as 'problem orientated' if the sum of the problem-solving items of the Brief COPE (10 + 23 + 2 + 7 + 14 + 25) was greater than that of the emotional items (12 + 17 + 5 + 15 + 22 + 27) and 'emotion orientated' when the opposite was true.¹⁴

Statistical analysis

Data was pooled and subjected to statistical test done with SPSS V 15. Results obtained were presented using mean, median, standard deviation and interquartile range. Comparison among study groups was done with the help of Unpaired T test for normally distributed data and Mann-Whitney test for data not normally distributed. Analysis among qualitative variables was done using Chi Square test. Spearman's ρ correlation coefficient was used for association between various parameters. $P < 0.05$ was taken as significant.

RESULTS

Study interviewed 30 patients each of psoriasis and neurodermatitis. The mean age distribution is 42.5 ± 16.37 years for psoriasis and 42.7 ± 14.09 years for neurodermatitis. Though the gender distribution between the two disorders was comparable, however the neurodermatitis patients largely had a lower level of education than patients of psoriasis (Table 1).

Table 1: Sociodemographic variables among study population.

	Psoriasis (N-30)	Neurodermatitis (N-30)	Pearson chi square test	P value
Gender				
Male	21	23	0.341	0.559
Female	9	7		
Education				
Primary and below	12	20	4.286	0.038*
Secondary and above	18	10		
Perception of disorder				
Minor	17	7	6.944	0.008*
Major	13	23		

* $P < 0.05$.

Table 2: Comparison of SCL 90R parameters between psoriasis and neurodermatitis.

SCL 90 R parameters	Median (interquartile range)		Mann-Whitney U	P value
	Psoriasis (N-30)	Neurodermatitis (N-30)		
Somatisation	0.50 (0.71)	0.58 (0.42)	339.50	0.100
Obsessive-compulsive	0.25 (0.73)	0.40 (0.33)	320.00	0.053
Interpersonal sensitivity	0.10 (0.47)	0.44 (0.44)	263.00	0.005*
Depression	0.46 (0.86)	0.42 (0.42)	387.00	0.350
Anxiety	0.20 (0.53)	0.30 (0.23)	367.50	0.219
Hostility	0.00 (0.83)	0.16 (0.54)	442.50	0.906
Phobic anxiety	0.00 (0.28)	0.16 (0.42)	347.00	0.100
Paranoid ideation	0.00 (0.33)	0.00 (0.16)	398.00	0.378
Psychoticism	0.15 (0.70)	0.60 (0.45)	265.00	0.006*

* $P < 0.05$.

Study asked each individual who participated in the study if they perceived their dermatological disorder to be a minor or major problem and significantly higher number of neurodermatitis patients believed their dermatological disorder to be major problem than psoriasis patients (Table 1).

There was significant difference found on Interpersonal Sensitivity and Psychoticism stress indexes among the two disorders (Table 2). The quality of life was also worse among neurodermatitis patients (Table 3). The comparison of coping mechanism also revealed few significant differences between two disorders (Table 4).

Table 3: Comparison of domains of DQOL between psoriasis and neurodermatitis.

Dermatological quality of life domains	Median (interquartile range)		Mann-Whitney U	P value
	Psoriasis (N-30)	Neurodermatitis (N-30)		
Symptom and feelings	1.33 (2.00)	1.39 (2.00)	174	<0.001*
Work and school	1.04 (0.00)	1.34(3.00)	206.50	<0.001*
Daily activity	1.49(2.00)	0.91(1.00)	395	0.420
Leisure	1.12(2.00)	0.92(1.00)	392.50	0.395
Treatment	0.76 (1.0)	0.76 (1.00)	354	0.156
Personal relationship	1.03 (2.00)	0.87(0.00)	423	0.690
Total	4.72 (7.00)	3.96(5.00)	237.00	0.002*

*P<0.05.

Table 4: Comparison of coping mechanisms between psoriasis and neurodermatitis.

Coping parameter	Median (interquartile range)		Mann-Whitney U	P value
	Psoriasis (N-30)	Neurodermatitis (N-30)		
Self-blame	0.72 (1.00)	1.53 (3.00)	191.00	0.000*
Active coping	1.50 (2.00)	0.96 (1.00)	142.00	0.000*
Self-distraction	1.94 (4.00)	1.36 (2.00)	314.50	0.045*
Positive reframing	0.89 (1.00)	1.01 (1.00)	268.00	0.007*
Use of emotional support	1.53 (2.00)	1.41 (2.00)	198.00	0.000*
Use of instrumental support	1.17 (2.00)	0.89 (1.00)	90.50	0.000*
Acceptance	1.30 (1.00)	0.86 (1.00)	100.50	0.000*
Planning	0.98 (2.00)	0.97 (1.00)	143.50	0.000*
Religion	0.76 (2.00)	0.74 (1.00)	278.50	0.011*
Substance use	0.65 (0.00)	0.74 (0.00)	421.50	0.673
Behavioural disengagement	1.14 (1.00)	0.76 (1.00)	376.50	0.277
Venting	1.35 (2.00)	1.10 (1.00)	391.00	0.383
Humor	0.61 (1.00)	0.00 (0.00)	330.00	0.076
Denial	0.00 (0.00)	0.00 (0.00)	450.00	1.000

*P<0.05.

DISCUSSION

This study was aimed at comparing psychopathology, quality of life and coping mechanisms in psoriasis and neurodermatitis and correlating coping styles in the study group.

The perception of illness as a problem was found to be more in the neurodermatitis as compared to psoriasis group in this study indicating preoccupation with the disease was more and perceived negative outcome with the patients of neurodermatitis as compared to psoriasis. Possible factors influencing here can be the overall lower educational level of neurodermatitis patients however this hypothesis can't be backed up with available literature. The study conducted by zalewaska et al and Levenson

showing acceptance with psoriasis as problem leading to less severe perception of psoriasis as problem.^{15,16}

The quality of life was affected in psoriasis as well as neurodermatitis however the impact was significantly severe in patients of neurodermatitis in this study. Whereas in studies supports the impact of psoriasis on the quality of life, while Kabbur H et al study reveals that the stress-reaction has impact on the exacerbations of psoriasis which in turn has effect on quality of life.¹⁷⁻²¹ According to parameters of DLQI (symptom and feelings, work and school) quality of life was more affected in neurodermatitis compared to psoriasis. In patient with neurodermatitis the itching triggers the excessive concern and preoccupation of the illness. This in turn exacerbates the symptoms "itch-scratch cycle"

causing impairment in the functioning and there by affecting the quality of life.

Depression and anxiety is a common psychological comorbidity in psoriasis.²²⁻²⁴ Somatization and obsessive-compulsiveness was seen in neurodermatitis in our study. Presence of depression in psoriasis may modulate itch perception, exacerbating diseases leading to dissatisfaction even with the clinically satisfying treatment outcome leading and flaring up of diseases. The psychological comorbidity is indeed high in both disorder, interpersonal sensitivity and psychoticism is a likely to be higher in neurodermatitis patients. Overall it appears that there is more psychological distress and psychopathology associated with neurodermatitis when compared with psoriasis.

Coping styles most commonly used by patients were self-blame, self-distraction, using emotional support, religion, planning and positive reframing. By using the emotion based coping styles (self-blame, using emotional support) it was found to be more prone to stress which in turn increase the exacerbation of diseases itself giving rise to psychopathological morbidity like depression, anxiety in both study group, which has good support in literature for psoriasis.²⁴⁻²⁶ There is dearth of research in this area in neurodermatitis regarding how patients of neurodermatitis cope with the diseases and the stressful live events. Study done by Hill et al showed that coping plays major role in the disease progression; exacerbations and it also explained the emergence of psychopathology in psoriasis.²⁷

Self-blame as coping was used significantly in neurodermatitis and psoriasis. On its correlation with psychopathology; it revealed that those who were using this as coping style found to have problem in area of interpersonal sensitivity and emergence of psychotism. There was negative correlation with use of alcohol and psychopathology supported by Fortune et al showing use of alcohol has adverse effect on the QOL, and use of it was leading to the exacerbations of the symptoms of diseases. This study revealed that there was increase in psychotism and frequent exacerbations.²⁸ There was direct impact of substance use on inter personal relationship which in turns affects quality of life.

In our study it was found that those who practice positive reframing, self-distraction, planning, venting and religion as a coping style in them the psychopathology was not found to the extent that it would affect the quality of life of patients in both groups.

So we came to the conclusion that patients with psoriasis and neurodermatitis have impact on their quality of life due to disease itself, social stigma, stress-full life events, maladaptive coping style and substance use. Amongst these, maladaptive coping styles had the major impact as supported by the study by Leibovici V et al, Fortune DG et al and A Finzi et al rather than the stressful events in

life.²⁹⁻³³ This explains that more than stress the coping to the stress was having more adverse effect on patient's life in QOL and the vulnerability for the psychiatric disorders. We suggest that if we can change the coping style of these patients from maladaptive to adaptive then the out-come of disease and quality of life could be made better and also reduce the psychopathology associated with the diseases.

Implications

Psychological impact of the conditions which affect skin and change the appearance is adverse. Mental health professionals should be involved in treatment plan of such patients as well as reference at appropriate time should be done for psychiatric intervention. It will be done by strengthening the consultation-liaison for the effective treatment plan of patient. To develop adaptive coping styles in patient, use of psychotherapeutic interventions is needed and for which frequent recommendations from dermatologist can be practiced.

Limitations of this study Sample size were small. No control group was taken for comparison. Being a hospital-based study, sample subjects were those patients who were diagnosed and maintained on treatment and attending tertiary care hospital. The samples of the study were mostly urban and those who were seeking treatment. Those in rural areas couldn't reach tertiary centre and are not in sample.

CONCLUSION

Quality of life is significantly lower in neurodermatitis. Psychopathologies were significantly high in neurodermatitis. Maladaptive coping styles were used in both groups.

Further study should be done with control group for comparison; community based and follows up studies to study the change in psychological state of patients over time and with situations. A larger sample size and multi centred study would be appropriate for commenting about Indian scenario considering the size of the nation. Attitude of family, friends and other supportive groups should also be considered along with coping mechanisms in the stressful events of life.

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