Research Article

PSYCHOLOGICAL CHARACTERISTICS OF PATIENTS SUFFERING FROM SKIN DISORDERS

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ABSTRACT

Background: Dermatology holds a unique place among the other clinical specialties due to the "visibility" of the skin organ. Psycho dermatology focuses on the interaction between the mind and skin, based on the bio-psycho-social disease model in psychosomatics. It focuses on the complex, non-linear interactions between biological, psychological, and social factors in the pathogenesis of skin diseases. The present research work aims to assess the psychological characteristics of patients suffering from skin disorders- eczema and psoriasis.

Method: A sample of 90 individuals was divided into three groups: eczema patients, psoriasis patients, and control group. Participants were administered several tools and effective results were found out after statistical analyses.

Results: Significant differences between the three groups, with respect to coping styles, perceived stress, locus of control, and anxiety were demonstrated. On the other hand, in Psoriasis patients' group, significant relationships of Coping Styles and Perceived Stress with Locus of Control and Anxiety were found out. In Eczema patients' group, a significant relationship of coping styles and perceived stress with locus of control was found out; a significant relationship between anxiety and self-blame coping style and between locus of control and trait anxiety were also found out.

Conclusion: The study reveals individuals with skin disorders experience negative psychological symptoms such as, high perceived stress, high anxiety, and negative coping styles. Psycho dermatology treatments can address these factors for a holistic healthcare approach.

*K*eywords: Anxiety; Coping Style; Locus of control; Psycho dermatology.

INTRODUCTION

Human health is markedly characterized by psycho-physiological unity. Stress can manifest itself in the form of skin disorders. Dermatology holds a unique place among the different other clinical specialties due to the "visibility" of the skin organ.

The field of *psychodermatology* is a relatively new subspecialty of dermatology that bridges the fields of psychiatry, psychology, and dermatology. Through their shared embryonic ancestor, the ectoderm, the skin and central nervous systems are connected. The neuro-immuno-cutaneous-endocrine model was proposed by O'Sullivan et al.(1998) to explain the mind and body relationship.

In India, the origin of psychodermatology dates back to the time of the Buddha (*563–483 BCE*). Indigenous medical traditions like Ayurveda, Yoga, and Unani promote the prevention of skin conditions through meditation, physical activity, etc. In 2010 Manipal, India's first specialised psychodermatology liaison clinic was established, and later in Faridkot, Punjab.

Dermatologists have long referred to skin conditions like psoriasis and atopic dermatitis, which involves intricate psychoneuroimmunological pathogenesis, as "psychosomatic." There are several ontogenetic, anatomical, and functional links between the skin, the psyche, and the immune system, such as the skin's dense network of free nerve endings and joint origin from the same germinal layer. These links account for the frequent involvement of psychoneuroimmunological pathways in the pathogenesis of dermatoses.

Because of this, skin conditions are categorised as "paradigmatic" psychosomatic illnesses.

Birdi et al. (2022) studied stress, anxiety, and depression in female adults, finding positive relationships between atopic dermatitis severity and psychological distress, measured weekly.

Guillet et al. (2022) found no significant difference in cutaneous psoriasis incidence, prevalence, or expression between male and female participants. Similarly, Slattery MJ & Essex MJ. (2011) found no association between anxiety, depression, and atopic disorders in adolescents, suggesting other factors may contribute to differential expression.

Iannone et al. (2022) found that psychiatric comorbidities, including GAD and anxious distress, impact psoriasis, atopic dermatitis, and hidradenitis supppurativa development, severity, and flare-ups.

Aguayo-Carreras et al. (2020) found that type D personality is associated with increased risk of comorbidities, social adaptation, and health-related quality of life in psoriasis patients. This personality profile may indicate poor coping abilities, increased depression, anxiety, and inadequate social adaptation mechanisms.

Harvima et al. (1993) found that high stress patients had more skin symptoms, suggesting stress may cause psoriatic lesions by increasing neuropeptide content and decreasing neuropeptide-degrading enzyme activity, particularly mast cell chymase.

Rationale of the study

This research is conducted to expose the need of integration of three specialties

(Psychiatry, Psychology, and Dermatology) for conveniently treating the patients as it is necessary to reach the origins, and this attention to the mental and emotional states of the patients, that are part of the clinical picture, will help the patients by giving at least the resources to deal with the problem in a balanced and autonomous manner. This research study compares psychological factors in skin disorders and normal populations, revealing differences in severity among patients and control groups.

Research problem:

The present research work aims to assess the psychological characteristics- coping style, anxiety, locus of control, and perceived stress of patients suffering from skin disorders- eczema and psoriasis in south part of West Bengal.

Main alternative research hypotheses:
- There are differences in the level of selected psychological variables between the three groups of individuals.
- There are significant relationships of Coping Styles and Perceived Stress among the 3 groups of individuals.

METHODS

Participants

In the present study, simple random sampling method was used. Patients' data were collected from the Department of Dermatology, School of Tropical Medicine, Kolkata and control group data was obtained from both in online and offline mode. A total of 90 individuals, were chosen, among which 30 were eczema patients, 30 were psoriasis patients and 30 healthy individuals who were not suffering from any skin disorders or other disorders/diseases and among each

group of 30 individuals, 15 were males and 15 were females. They were matched for educational qualification, income group, age, gender and locality. Inclusion criteria for the groups were 18 years to 28 years, educational level from class 8 to graduation, monthly income ranging from 10k to 30k rupees and all individuals were resident of south part of West Bengal, India. The exclusion criteria for control group was any chronic disease or disorder diagnosis and for the patients' groups other types of skin disorder diagnosis were excluded.

Method

Firstly, conscious consent of the participants were taken before indulging into the data collection and sociodemographic details were collected. Four standardized tools were used:

- **Coping Orientation to Problems Experienced Inventory (Brief- COPE) (Carver CS. 1997)-** The Brief- COPE is a 28item self-report inventory that is intended to assess coping methods to deal with stressful life situations and is comprised of 14 scales, out of these, 6 coping styles have been taken for the present study. Respondents rate on a 4-point Likert scale. Total scores on each scale range from 2 to 8. Higher scores indicate increased utilisation of that specific coping strategy. The reliability and validity of the scale indicated acceptable values of Cronbach's alpha: Active coping ($\alpha=0.68$), Positive Reframing ($\alpha=0.64$), Acceptance ($\alpha=0.57$), Self-distraction ($\alpha=0.71$), Denial ($\alpha=0.54$), and Self-blame ($\alpha=0.69$).

- State Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs. 1983)- The STAI is a 40-item self-report inventory that measures "state" and "trait" anxiety. The state measurement rates individuals on how they feel "right now" and the trait anxiety rates individuals' general feelings on a four-point scale. Among Form X and Y, Form Y is its most popular version. The scale's internal consistency coefficients have ranged from.86 to.95, while test-retest reliability coefficients over a two-month period have ranged from.65 to.75 (Spielberger et al. 1983).

- **Perceived Stress Scale (PSS-10) (Cohen S, Kamarck T, and Mermelstein R. 1983)-**The (PSS-10) is a 10-item questionnaire and is widely used to assess stress levels. In each case, respondents rate items on a five-point scale from 'never' to 'very often'. Higher levels of perceived stress are represented by higher scores. The internal consistency of the scale reflected by Cronbach's alpha ranged from.71 to .91. The test-retest reliability, among various populations, has typically been seen at r > .70.

- Locus of Control Scale (LCS) (Rotter JB. 1966)- The (LCS) is a 29-item questionnaire that assesses a person's level of internal vs. external control of reinforcement. In LCS, for each item, the respondent must select the statement from an 'a' or 'b' option. Lower scores indicates internal control and higher scores indicates external control. The scale's split half reliability is between 0.65 and 0.79. Estimates for reliability via the split half method are equal to 0.73 and test-retest samples six weeks apart are equal to 0.67. The test reported good discriminant validity.

Statistical Analysis

Mean and Standard Deviations of all the variables for all the groups were calculated to present the characteristics of data on all the measures used in the study. Analysis of Variance (one-way ANOVA) and Pearson correlation technique (or, product-moment correlation technique) were employed. All statistical analyses were performed using IBM SPSS Statistics (Version 29)**.**

RESULTS

- **Table 1:** *Mean and Standard deviations of the control group, Psoriasis group, and Eczema group with respect to the Coping styles, Perceived Stress, Locus of Control and State and Trait Anxiety.*

Coping styles	Groups	Mean	Standard deviation
Self-Distraction	Control group	2.70	0.750
	Psoriasis group	6.13	1.306
	Eczema group	5.77	1.305

Coping styles	Groups	Mean	Standard deviation
Active Coping	Control group	6.90	0.759
	Psoriasis group	4.77	2.063
	Eczema group	5.13	1.871
Denial	Control group	2.60	0.724
	Psoriasis group	5.10	1.561
	Eczema group	4.57	1.612
Positive reframing	Control group	6.37	1.129
	Psoriasis group	4.27	1.780
	Eczema group	4.60	1.940
Acceptance	Control group	6.67	0.922
	Psoriasis group	4.30	1.579
	Eczema group	4.30	1.579
Self-blame	Control group	2.77	0.858
	Psoriasis group	5.57	1.794
	Eczema group	5.03	1.921
Perceived Stress	Control group	10.70	1.968
	Psoriasis group	23.83	4.587
	Eczema group	24.03	4.460
Locus of Control	Control group	14.70	1.878
	Psoriasis group	11.70	2.680
	Eczema group	11.50	2.474
State Anxiety	Control group	33.90	3.661
	Psoriasis group	55.00	5.813
	Eczema group	55.00	5.717
Trait Anxiety	Control group	31.20	3.633
	Psoriasis group	55.13	5.958
	Eczema group	53.77	5.309

From the data it can be seen that in *Self Distraction coping style* (CS1), in *Denial coping style* (CS3), and in *Self-blame coping style* (CS6), the Psoriasis group(group 2) has the highest mean value among the three groups. Whereas, in *Active Coping* (CS2), in *Positive reframing coping style* (CS4), and in *Acceptance coping style* (CS5), the control group(group 1) has the highest mean value. In Perceived stress, the Eczema group(group 3) has the highest mean value. In Locus of control, the control group (group 1) has the highest mean value among the three groups. In State anxiety, both the Psoriasis group(group 2) and Eczema group(group 3) has the highest mean values. In case of

Trait anxiety, the Psoriasis group (group 2) has the highest mean value.

Table 2: *Comparison among the control group, psoriasis group, and the eczema group with respect to the coping styles, perceived stress, locus of control, and state and trait anxiety.*

Coping styles	F ratio	Significance level	Remarks
Self-Distraction	80.577	.001	Significant
Active Coping	14.060	.001	Significant
Denial	28.059	.001	Significant
Positive Reframing	13.966	.001	Significant
Acceptance	28.789	.001	Significant
Self-Blame	26.022	.001	Significant
Perceived Stress	117.268	.001	Significant
Locus of Control	17.183	.001	Significant
State Anxiety	167.192	.001	Significant
Trait Anxiety	211.473	.001	Significant

From the data it can be seen that in terms of coping styles, perceived stress, locus of control, and state and trait anxiety, the three groups differ significantly. Thus, alternative hypothesis is accepted, that is, there are differences in the level of selected psychological variables between the three groups of individuals.

Table 3: *The correlation of the six different types of coping styles with perceived stress in group 1(control group).*

Variables	Self-Distraction Coping style	Active Coping style	Denial Coping style	Positive reframing Coping style	Acceptance Coping style	Self-Blame Coping style
Perceived Stress	-.273	.164	.228	.222	-.418*	-.063
Locus of control	-.238	.172	.061	-.174	.299	-.066
State Anxiety	-.288	-.153	.193	-.241	-.061	.179
Trait Anxiety	-.180	-.180	.110	-.287	.062	.325

*= Correlation is significant at 0.05 level

From the above data it can be seen that perceived stress has significant negative correlation with Acceptance coping style (p<0.05) in group 1.

Table 4: *The correlation values of perceived stress and locus of control with state and trait anxiety in group 1(control group).*

Variables	Perceived Stress	Locus of Control
Locus of Control	-.249	1
State Anxiety	0.187	.111
Trait Anxiety	0.057	.140

From the above data it can be seen that there is no significant relationship of perceived stress and locus of control with state and trait anxiety in control group.

Table 5: *The correlation values of the coping styles with perceived stress, locus of control, and state and trait anxiety in group 2(psoriasis group).*

Variables	Self-Distraction Coping style	Active Coping style	Denial Coping style	Positive reframing Coping style	Acceptance Coping style	Self-Blame Coping style
Perceived Stress	.499**	-.631**	.450*	-.560**	-.321	.469**
Locus of Control	-.520**	.742**	-.405*	.480**	.421*	-.236
State Anxiety	.400*	-.391*	.118	-.337	-.075	.344
Trait Anxiety	.401	-.522**	.147	-.303	-.059	.189

*= Correlation is significant at 0.05 level . **= Correlation is significant at 0.01 level.*

From the data it can be seen that there is a significant positive correlation of perceived stress with Self-Distraction, Denial, Self-blame coping styles. There is a significant negative correlation of perceived stress with Active Coping and Positive-Reframing coping styles. There is a significant negative correlation of locus of control with Self-Distraction and Denial coping styles. There is a significant positive correlation of locus of control with Active Coping, Positive reframing and acceptance styles. There is a significant positive correlation between state anxiety and Self-distraction coping style. There is a negative correlation of state and trait anxiety with Active coping style. Thus, in these cases, alternative hypotheses are accepted.

Table 6: *The correlation values of perceived stress and locus of control with state and trait anxiety in group 2(psoriasis group).*

Variables	Perceived Stress	Locus of Control
Locus of Control	-.759**	1
State Anxiety	.537**	-.416*
Trait Anxiety	.465**	-.505**

*= Correlation is significant at 0.05 level. **=Correlation is significant at 0.01 level

From the data it can be seen that there is a significant negative correlation between perceived stress and locus of control. There is a significant positive correlation of perceived stress with state and trait anxiety.

There is a significant negative correlation of locus of control with state and trait anxiety. Thus, in these cases, alternative hypotheses are accepted.

Table 7: *The correlation values of the coping styles with perceived stress, locus of control, and state and trait anxiety in group 3(eczema group).*

Variables	Self-Distraction Coping style	Active Coping style	Denial Coping style	Positive reframing Coping style	Acceptance Coping style	Self-Blame Coping style
Perceived Stress	.333	-.418*	.448*	-.309	-.383*	.225
Locus of Control	-.518**	.663**	-.584**	.503**	.181	-.374*
State Anxiety	.106	-.106	-.030	.087	-.050	.433*
Trait Anxiety	.281	-.261	.149	-.110	-.086	.424*

*= Correlation is significant at 0.05 level . **= Correlation is significant at 0.01 level.

From the data it can be seen that there is a significant negative correlation between perceived stress and active coping style. There is a significant negative correlation between perceived stress and acceptance coping style. There is a significant positive correlation between perceived stress and denial coping style. There is a significant negative correlation of locus of control with self-distraction, denial and self-blame coping style. There is a significant positive correlation of locus of control with active coping and positive-reframing coping style. There is a significant positive correlation of state and trait anxiety with self-blame coping style. Thus, in these cases, alternative hypotheses are accepted

Table 8: *The correlation values of perceived stress and locus of control with state and trait anxiety in group 3(eczema group).*

Variables	Perceived Stress	Locus of Control
Locus of Control	-.511**	1
State Anxiety	.224	-.200
Trait Anxiety	.345	-.424*

*= Correlation is significant at 0.05 level. **=Correlation is significant at 0.01 level.*

From the data it can be seen that there is a significant negative correlation between perceived stress and locus of control. There is a significant negative correlation between locus of control and trait anxiety. Thus, in these cases, alternative hypotheses are accepted.

DISCUSSION

The psoriasis and eczema patients tend to use denial and self-blaming coping styles, which is consistent with previous literature which shows denial as a dysfunctional coping strategy used solely by patients of psoriasis[4]. Also, both psoriasis and eczema patients are experiencing higher perceived stress, supporting research showing that higher levels of perceived stress are expected in the group engendering dermatological disorders than the control group[9,17]. Psoriasis and eczema groups tend towards internal control. Patient groups believe they are responsible for their circumstances, as supported by a study[12] showing psoriasis patients perceive disorder as an obstacle and the health locus of control was located internally, and contradicting the previous finding, given that external locus of control is typically associated with negative outcomes and internal locus of control is typically associated with positive outcomes[11,13]. Psoriasis and eczema patients experience higher anxiety levels, which is supported by the study[1].

Among psoriasis patients, it can be seen that more they are using negative coping styles, like, self-distraction, denial, self-blame coping styles, higher is the perceived stress. This finding is supported by the study, which showed that itch intensity among patients with psoriasis and eczema was shown to correlate negatively with coping behaviour[16,18]. The finding that individuals having prevalence of higher state and trait anxiety and self-distraction, and self-blame coping styles, may predict future development of severe skin conditions like psoriasis and eczema, is in line with the finding that self-distraction coping style predicted greater anxiety[2].

The connection between the mind and skin disorders, like psoriasis, can be explained in the way that chronic stress diminishes the hypothalamic-pituitary-adrenal axis while increasing sympathetic-adrenal-medullary responses, which in turn activates pro-inflammatory cytokines. Then, it maintains and worsens psoriasis and some of its mental illnesses. High levels of pro-inflammatory cytokines create a vicious circle between psoriasis, psychological disorders, and other comorbidities of psoriasis (including atherosclerosis)[10]. Similarly, eczema is a stress-responsive disorder and involves autonomic nervous

system dysfunction and it is recognised that active illness in atopic dermatitis is influenced by impaired neuroendocrine control of the hypothalamic-pituitary-adrenal (HPA) axis[15]. Cortisol, also referred to as the stress hormone, increases in response to stress, which can cause unusually oily skin. After then, an eczema breakout may result. Stress makes it more difficult for skin to heal from irritated and damaged skin. In addition to making eczema outbreaks lasts longer, stress can also trigger eczema, which in turn causes more stress, creating what seems to be an endless cycle[25].

CONCLUSIONS

The present study have found out that the individuals with Psoriasis and Eczema, are experiencing negative psychological symptoms, which are- high perceived stress, high anxiety levels and are likely to use negative coping styles. Also, they are more inclined towards internal locus of control. Thus, the study tried to focus on the link between mind and the skin.

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