

## Psychological Burden And Quality Of Life Impairment In Patients With Chronic & Recurrent Dermatophytosis



Dr.Jasleen Kaur Sandhu<sup>1\*</sup>, Dr. Divjot Kaur Arora<sup>2</sup>, Dr.Harjot Singh<sup>3</sup>, Dr. Nitin Kumar<sup>4</sup>, Dr Sydney Moirangthem<sup>5</sup>

<sup>1</sup>\*Senior Resident; Department of Psychiatry, SGRDIMS; Consultant psychiatrist (PART TIME); Dr Harjot Neuropsychiatry Hospital; Email: drjasleensandhu@gmail.com

<sup>2</sup>Senior resident; SGRDIMS, Amritsar, Email: Kaurdivjot96@gmail.com

<sup>3</sup>Senior Staff Specialist Psychiatrist; Rockhampton Base Hospital, Qld, Australia; Email: drharjot@yahoo.com

<sup>4</sup>Assistant professor; Ananta institute of Medical Sciences and Research Centre, Rajsamand; Email: npareek44255@gmail.com

<sup>5</sup>MD, FRANZCP; Senior Staff Specialist Psychiatrist; Gladston hospital, Qld, Australia ; Sydney. Email: Moirangthem@health.qld.gov.au

\*Corresponding Author Email: drjasleensandhu@gmail.com

### Abstract

**Background:** Dermatophytosis, when chronic or recurrent, poses a substantial burden on patients' psychosocial quality of life.

**Aim:** To assess impact on quality of life in patients with chronic & recurrent dermatophytosis using DLQI & Skindex-16 scores.

**Methodology:** The study included 150 patients over the age of 16 who had chronic and recurrent dermatophytosis. A thorough history was obtained, and examination findings were entered into a proforma. Patients were made to fill Skindex-16 and DLQI in English and local languages. Skindex-16 scores (0–96) were converted to a linear scale from 0 to 100. Statistical analysis was done using SPSS version 26.

**Results:** Data of 150 patients was analysed. Mean DLQI score was  $12.18 \pm 5.13$  with main domain affected being "symptoms and feelings," followed by "work and school". 54% of the patients with CRD had a "very large effect" on their quality of life (DLQI score 11–20). Mean Skindex-16 score was  $67.44 \pm 21.35$ . According to Skindex-16, "Emotions" was the most impacted domain, followed by "Function" and then "Symptom." Higher DLQI scores were seen in patients belonging to age group 30–50. ( $\chi^2 = 33.99$ ,  $p < .001$ ). Occupation was also found to be a risk factor for higher DLQI scores with homemakers constituting the major sub-group. ( $\chi^2 = 25.183$ ,  $p < .01$ ). Higher mean percentage Skindex-16 scores were observed in younger age group (18–30 years) ( $p < .05$ ). Mean percentage emotion score was significantly higher in females. ( $p < .05$ ). Functional impairment was noticed in younger population. ( $p < .05$ )

**Conclusion:** CRD can cause a significant reduction in quality of life. Patients should be treated by a multidisciplinary team that includes psychiatrists and psychologists.

**Keywords:** Quality of life (QoL), Chronic and recurrent dermatophytosis, DLQI, Skindex-16.

### Introduction

Chronic and recurrent dermatophytosis (CRD), also referred to as ringworm, is a superficial fungal infection affecting skin, hair and nails with a global prevalence estimated between 20–25% with regional variations, notably higher in North India. [1,2] Although dermatophytosis is primarily understood as a dermatological condition, its chronic and recurrent nature imposes a substantial psychosocial burden on affected individuals which extends beyond the physical symptoms of itching, burning and skin discoloration. [3]

Growing evidence highlights that individuals with CRD endure profound body-focused stigma that fosters emotional dysregulation, diminished self-esteem and impairments in interpersonal and occupational domains. [4,5,6] These psychosocial sequelae are further compounded by internalized

shame and social withdrawal, which can alter adherence to prevailing gender norms and exacerbate psychological distress such as health anxiety, somatic preoccupation, and avoidance behaviors.[7,8,9] The cost of ongoing medical care and treatment further adds to the stress.

Despite these significant emotional and social consequences, psychological aspects remain under-emphasized in conventional clinical approaches focused predominantly on physical treatment. This paper aims to reframe CRD through a psychodermatological framework that integrates dermatological and psychological perspectives, emphasizing the chronic stress imposed by the condition and its resultant stigma-related emotional dysregulation.

### Materials And Methods

We conducted a cross-sectional analytical study over six months at a tertiary care hospital in North India. A total of 150 patients attending the outpatient department were enrolled using a purposive sampling technique. The study commenced after obtaining institutional ethical committee approval, and written informed consent was provided by all participants in Hindi, Punjabi, or English. Patients aged 16 years and above, diagnosed with chronic or recurrent dermatophytosis, were included, while individuals with other concurrent dermatological conditions were excluded. Based on Lakshmanan et al study, who observed the prevalence of dermatophytosis in rural India to be 27.6%, and with 95% confidence intervals, the sample size was calculated using the formula given below. [10]

$$N = Z\text{-}\alpha/2 * p * (1 - p) / d^2$$

p (%) - prevalence of = 0.276, and an allowable error of 8%, the total sample required for the study came to be 125. Adding a non-response rate of 20%, the sample size was calculated to be 150. After obtaining their consent, eligible participants underwent a detailed history and clinical examination and the findings were recorded in a structured proforma. Patients completed the Dermatology Life Quality Index (DLQI) and Skindex-16 questionnaires, both available in English and regional languages.[7,11] Scores from Skindex-16 (0-96) were standardized to

a 0-100 linear scale. Permission to use both the assessment tools was obtained from the relevant authorities. Statistical analysis was conducted using SPSS version 26. A p-value of <0.05 was considered statistically significant.

## Results

This study examined 150 patients with CRD focusing on demographic profiles, clinical characteristics, treatment history, and quality of life (QoL) impact. The majority of patients were aged 31-50 years, with a mean age of  $39.1 \pm 14.2$  years. Females (56%) outnumbered males (44%). Occupation-wise, 43.3% (n=65) were unemployed, with housewives (n=57), forming the largest subgroup. Itching (98%) was the most common symptom, followed by redness (92%) and discoloration (84%). History of previous treatment was present in most of the patients (83.3%, n=125) with topical antifungals (79.2%, n=99) being most commonly used followed by oral antifungals (78.4%, n=98). 58.4% patients had a history of topical steroid use. 48.7 % patients reported involvement of two anatomical sites. The most frequent overall diagnosis was Tinea cruris et corporis (44.7%). Amongst patients with single site involvement, Tinea corporis (n=39,52.5%) was the most common diagnosis.

**Table 1: Frequency distribution of demographic and clinical variables in the study**

|                                            | No. of cases (n) | Percentage (%) |
|--------------------------------------------|------------------|----------------|
| Age (in years)                             |                  |                |
| 16-30                                      | 50               | 33.4           |
| 31-50                                      | 68               | 45.3           |
| >50                                        | 32               | 21.3           |
| Gender                                     |                  |                |
| Female                                     | 84               | 56             |
| Male                                       | 66               | 44             |
| Symptoms                                   |                  |                |
| Itching                                    | 147              | 98             |
| Redness                                    | 138              | 92             |
| Discoloration                              | 126              | 84             |
| History of Previous Treatment              |                  |                |
| Yes                                        | 125              | 83.3           |
| No                                         | 25               | 16.7           |
| No of Sites Involved                       |                  |                |
| 1                                          | 59               | 39.3           |
| 2                                          | 73               | 48.7           |
| ≥3                                         | 18               | 12             |
| Degree of Relief (after 3 weeks treatment) |                  |                |
| Complete relief                            | 41               | 27.3           |
| Partial relief                             | 93               | 62             |
| No relief                                  | 16               | 10.7           |

In terms of treatment response, 62% reported partial relief, 27.3% experienced complete relief, and 10.7% saw no improvement after three weeks of standard

treatment. A significant correlation ( $p < .001$ ) was found between prior topical steroid use and poor treatment response. QoL assessment using the

Dermatology Life Quality Index (DLQI) revealed a mean score of  $12.18 \pm 5.31$ , with 54% reporting a 'very large effect' on their quality of life. The most affected domain was 'symptoms and feelings' (median score-5) followed by 'work and school' and 'personal relationships' (Table 2). DLQI score was not

significantly affected by gender or number of sites involved. DLQI score was significantly associated with age and occupation of the patients. Higher DLQI scores were seen in younger patients aged 31-50 years. Unemployed people had higher DLQI scores, with housewives forming the largest sub-group.

**Table 2: Median DLQI scores of different domains**

| Domains               | Median with interquartile range |
|-----------------------|---------------------------------|
| Symptoms & feelings   | 5 (6-4)                         |
| Work & School         | 3 (3-0)                         |
| Personal relationship | 2 (4-0)                         |
| Daily activities      | 1 (2-0)                         |
| Leisure               | 1 (2-0)                         |
| Treatment             | 0 (1-0)                         |

**Table 3: Association between age-groups with DLQI scores**

| Age Groups | DLQI<br>Score 0-1 | DLQI<br>Score 2-5 | DLQI<br>Score 6-10 | DLQI<br>Score 11-20 | DLQI<br>Score 21-30 |                              |
|------------|-------------------|-------------------|--------------------|---------------------|---------------------|------------------------------|
| 16-30      | 0                 | 1                 | 11                 | 35                  | 3                   | $\chi^2 = 33.99$<br>p - .000 |
| 31-50      | 0                 | 5                 | 18                 | 39                  | 6                   |                              |
| >50        | 0                 | 13                | 9                  | 8                   | 2                   |                              |

The study found that the overall Skindex-16 score was  $67.44 \pm 21.35$ , with the highest impact reported in the Emotion domain, followed by Function and Symptom. Females reported significantly higher emotional impact than males ( $p = 0.042$ ), with a moderate effect size (Cohen's  $d = 0.33$ ), while no significant gender differences were observed in the Symptom and Function domains. Age had a significant effect on both Emotion and Function scores, with younger participants (18–30 years) experiencing greater quality-of-life impairment compared to older age groups. However, no significant differences were

found in Symptom scores across age groups or between genders. Overall, the findings suggest that younger individuals, particularly females, are more emotionally and functionally affected by chronic and recurrent dermatophytosis.

A strong positive correlation ( $r = 0.744$ ,  $p < .001$ ) was found between DLQI and Skindex-16 scores, indicating that increased QoL impairment measured by DLQI was associated with severe symptoms, emotional distress, and functional limitations identified through Skindex-16.(Figure 1)

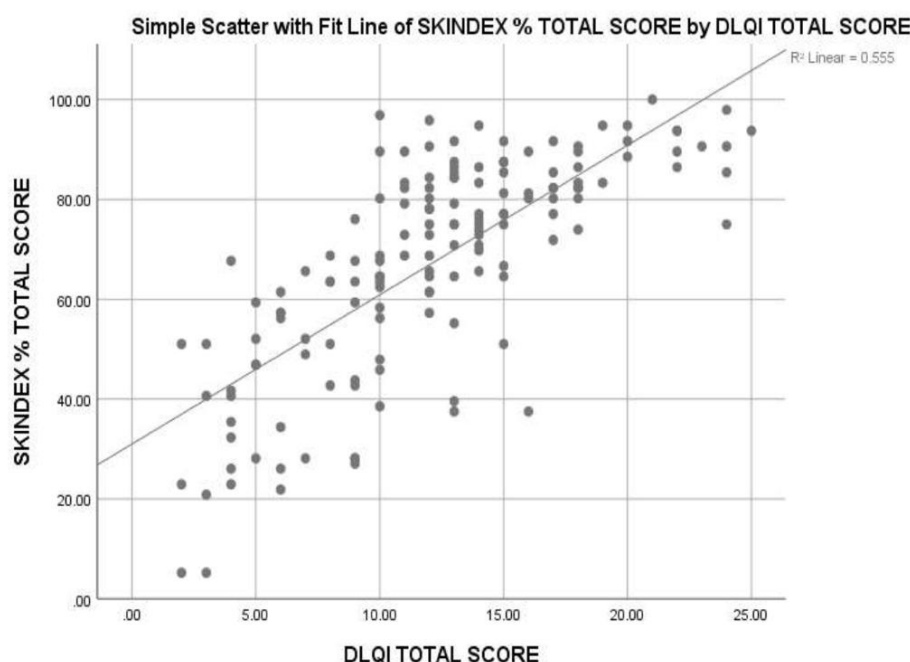


**Figure 1: The scatter diagram showing the relationship between DLQI scores (on the x-axis) and Skindex-16 % total score (on the y-axis).**

### Discussion

The findings of this study highlight chronic recurrent dermatophytosis (CRD) as not only a dermatological condition but also a complex psychodermatological disorder reflected in elevated emotional distress, functional limitations and disruptions in daily life. The mean Dermatology Life Quality Index (DLQI) score of  $12.18 \pm 5.31$  aligns with prior research demonstrating substantial impairment in quality of life among CRD patients, particularly in emotional and functional domains [3,6].

The recurrent and refractory nature of CRD may foster feelings of loss of control and pessimism about treatment outcomes, increasing vulnerability to depressive symptoms and emotional dysregulation [12,13]. This reinforces a cycle of distress wherein patients perceive themselves as unable to influence their condition, which exacerbates psychological suffering. The observed higher emotional impact among females and younger age groups substantiates the role of gender-related and developmental vulnerabilities in mediating psychological distress in dermatological illness [6,14]. This population may also be sensitive to appearance-based evaluation and prone to internalizing reactions such as anxiety and low self-worth.

Visible skin lesions challenge patients' body image and self-identity, leading to heightened discomfort, embarrassment, and perceived stigma [15,16]. These phenomena trigger avoidance of social situations and contribute to dermatology-related social anxiety, a subtype of social anxiety disorder characterized by fear of negative evaluation based on appearance [17,18]. Such anxieties further impair social functioning and quality of life [5].

Furthermore, the chronicity and recalcitrance of CRD create a feedback loop where physical symptoms exacerbate psychological distress, which in turn may amplify symptom perception and reduce treatment adherence. This bidirectional interaction aligns with neuroimmune theories in psychodermatology, where stress-related neuroendocrine and immune dysregulation modulate disease activity and quality of life [19,20]. The unpredictable course of recurrent dermatophytosis impedes patients' ability to anticipate symptoms and treatment success, generating distress tied to ambiguous illness states. This intolerance leads to increased vigilance for somatic sensations and catastrophic interpretations, perpetuating somatic preoccupation and anxiety.

The differential sensitivity of DLQI and Skindex-16 suggests the necessity for comprehensive assessment tools capturing both functional limitations and emotional distress for an accurate psychosocial evaluation [21,22]. This supports the implementation of multidisciplinary management strategies involving dermatologists, psychiatrists and clinical psychologists to address both cutaneous and psychological domains of CRD [4]. Brief psychological interventions such as CBT for appearance concerns, stigma reduction counselling, stress management and psychoeducation on treatment adherence may reduce distress and enhance quality of life.

### Conclusion

Chronic dermatophytosis significantly affects quality of life, impacting daily activities, emotions, and social interactions. Understanding CRD within a psychodermatological framework explains the multifactorial biopsychosocial impact of this

condition and highlights the critical need for integrated care models. Future interventions should focus on stigma reduction, emotional regulation therapies, and psychosocial support to improve overall patient outcomes and quality of life.

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