

## A STUDY ON THE IMPACT OF DERMATOPHYTOSIS ON QUALITY OF LIFE

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### Abstract

**Introduction:** Dermatophytosis is a type of skin infection caused by fungi. This infection is also known as ringworm. In this infection, itchy, scaly, red-colored, circular rashes appear on the skin. Almost 25% of the population is affected by dermatophytosis, and this infectious creature affects almost 12-15% of the population in its lifespan.

**Aims and Objectives:** The study intended to find out the Quality of Life of the patients with dermatophytosis and analyze them in more details.

**Materials and Methods:** This is a prospective observational study conducted with 40 patients. The study followed Dermatology Quality of Life Index (DQLI) questionnaire to assess the Quality of Life (QoL) of the patients with dermatophytosis. Based on Likert scale, each question was marked by the participant and then scored.

**Result:** The study found that there are 27.5% of the patients whose QoL impacted severely while Moderate Impact on QoL was being found on 35% of the patients which was highest. Only 5% of the patients had totally impaired QoL, followed by 20% of the patients with Mild Impact and 12.5% of patients with no impact on QoL.

**Conclusion:** The study concluded that mostly the patients had moderate to severe impact on Quality of Life (QoL) due to dermatophytosis. The study further concluded that the impact is more on the females' lives than males.

**Keywords:** dqli, dermatophytosis, fungal infection, quality of life

### Introduction

Dermatophytosis is a type of skin infection caused by fungi. This infection is also known as ringworm. In this infection, itchy, scaly, red-colored, circular rashes appear on the skin. Due to this infection, hair loss issues can be raised on the

affected part of the skin. Symptoms of this infection usually begin after 4-14 days of exposure. In this period, the infection may appear in multiple areas [1]. Below is figure 1 that shows common Dermatophytosis infection:



Figure 1: A typical lesion of tinea dermatophytosis

### *Epidemiology*

According to studies, almost 25% of the population is affected by dermatophytosis, and this infectious creature affects almost 12-15% of the population in its lifespan. "Tinea pedis + onychomycosis, Tinea corporis, and Tinea capitis" are commonly found dermatophytoses in human beings. Tinea capitis is less common in adults, but it commonly affects children. Tinea capitis epidemics have been spreading across the American and European regions due to an increase in the incidence of dermatophytes [2]. According to the expert, this fungal infection is most common in cats. There are a lot of factors that may be the cause of dermatophytosis in pets, such as stress, age factor, breed, illness, any kind of injury or chronic illness, etc. This infection is most common in children in the African region. It is commonly found in children aged 4 to 11 years. It is

most commonly found in the African regions where the atmosphere is hot and in areas where there is over-polluting. The greatest number of cases of this infection are found in India and Brazil. The ratio of this infection is 38-78% in India, and the *Trichophyton rubrum* type of this infection is found in Brazil with a ratio of 49.4%. The research was conducted in 2013 in which (Sen et al, 2020). Tinea pedis (43.4 percent) was determined to be the most common kind of this infection from 5175 samples [2-4].

### *Clinical features*

The clinical features of this fungal infection include inflammation in the form of a ring with a visible core lesion. In this infection, itchy, scaly, red-colored, circular rashes appear on the skin [1-3]. A few cases of dermatophytes infection spreading to deep tissues beneath the skin have been described.



**Figure 2: A ring shaped dermatophytosis lesion**

### *Current Treatment*

No proper vaccine has yet been invented for human beings against this infection. But in pets and other animals, the vaccine name "Insol Dermatophyton" is used against some dermatophytosis infections. But there are 2 types of medical drugs that can be used to treat this infection. These drugs are tropical and systematic. Studies found that lesions that are small in size and on the outer surface can be treated with different kinds of topical shampoos and prescribed creams such as miconazole. But other infections, like hair infections, can be treated with the help of systematic treatment such as Itraconazole. Treatment for this may take up to 2 weeks. Several kinds of this infection take almost 6 months to recover from, such as onychomycosis [4].

### **Materials and Methods**

This is a prospective observational study conducted between November 2021 and January 2022. The study included patients who visited the Outpatient Department of Dermatology with diagnosed dermatophytosis. The patients who showed interest to participate in our study were included. The patients who had other underlying abnormalities were excluded. The study followed Dermatology Quality of Life Index (DQLI) questionnaire to assess the Quality of Life (QoL) of the patients with dermatophytosis. Based on Likert scale, each question was marked by the participant and then scored as given in the table below.

**Table 1: The scoring of DQLI based on 4-points system of Likert Scale**

Score	Implies
0	Not Relevant/Not applied/Not at all
1	Mild/Little
2	Much/Lots
3	Very Much/Severe

DQLI score is obtained by addition of all the answers which can give maximum of 30 and minimum of 0. The higher score implies the severity of impairment of QoL. During the study time, the authors questioned 40 participants who cooperated with the authors and the institution.

After determining the scores, the assessment is done by the implication of the score ranges which is as follows:

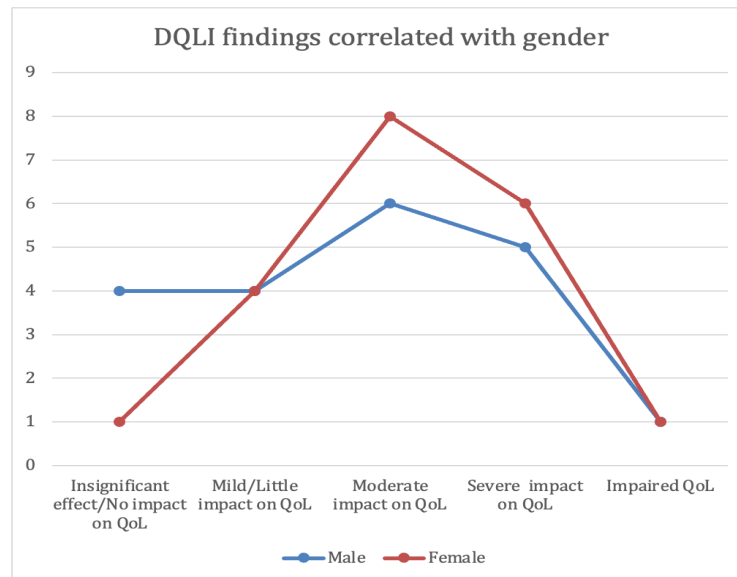
**Table 2: The scoring of DQLI based on 4-points system of Likert Scale**

Score	Implies
0-1	Insignificant effect/No impact on QoL
2-5	Mild/Little impact on QoL
6-10	Moderate impact on QoL
11-20	Severe impact on QoL
21-30	Impaired QoL

### Results

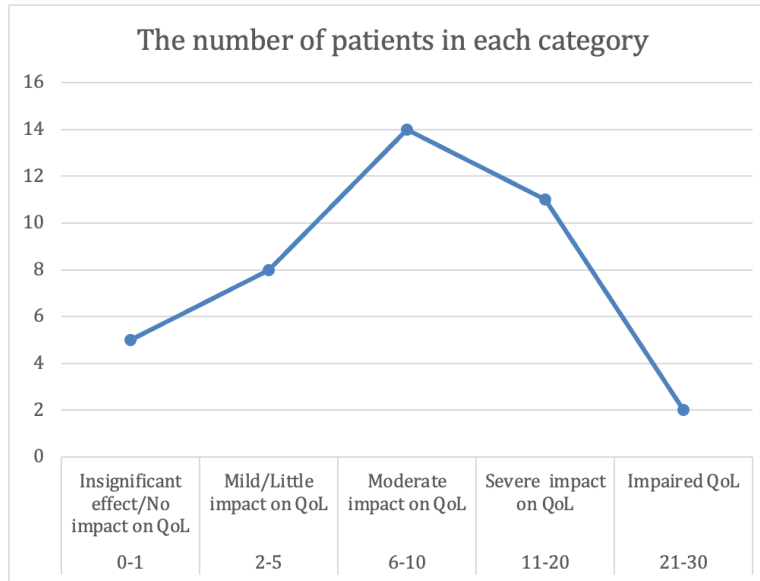
The study found that the age of the patients was  $29.46 \pm 9.12$  years old. The male and female ratio was found to be 1:1 (20 males and 20 females). The study followed DQLI questionnaire which contains series of questions attributing to the QoL of patients with dermatophytosis. It was found

that the impairment in QoL is more among female population as compared to male population. Female patients had moderate to severe impact on QoL while male patients mostly had insignificant to mild impact on QoL due to dermatophytosis. The male and female distribution is shown in Figure 3.

**Figure 3: The distribution of male and female in each category OF DQLI**

The distribution of each patient was found to be highest under moderate to severe category. While only 2 patients QoL was impaired due to dermatophytosis. The study found that there are 27.5% of the patients whose QoL impacted severely while Moderate Impact on QoL was

being found on 35% of the patients which was highest. Only 5% of the patients had totally impaired QoL, followed by 20% of the patients with Mild Impact and 12.5% of patients with no impact on QoL. The detailed analysis is depicted in Figure 4.



**Figure 4: The number of patients in each category**

## Discussion

Dermatophytosis is characterized as a type of skin infection caused by fungi. Ringworm is another name for this ailment. Itchy, scaly, red-colored, circular rashes form on the skin as a result of this infection. Hair loss might occur on the affected portion of the skin as a result of this infection[1,2,4]. Itchy, scaly, red-colored, circular rashes form on the skin as the main symptom of this infection. Hair loss is also a symptom in some cases. Symptoms of this virus usually appear after 4–14 days of exposure. The main etiology of this infection is fungi and tinea is the main and typical type of fungi that is the main cause of this infection. Microbiological tests reveal that various species of fungus, such as “fungus capitis (head), fungus faciei, mouth fungus (facial hair), fungus corporis (body), fungus manuum (hand), fungus cruris, and fungus unguium,” can be found in the lesion. Depending upon the fungal variants, different types of dermatophytosis occur[5].

### *Impact On Quality of Life*

“Trichophyton rubrum” is a type of dermatophytosis which is most common in Indian religions. The majority of dermatologists have been plagued with a flurry of dermatophytosis over the past 20 years, with the majority of them tormented by “persistent, backsliding, intermittent, stubborn, and severe” infection[6]. According to another study, chronic dermatophytosis is an illness lasting more than a half year to a year, with or without repeat, despite being adequately treated; backsliding dermatophytosis as dermatophytosis occurring after a longer period of contamination-free time in a clinically relieved patient; intermittent dermatophytosis as re-occurrence of the illness within a few months. The plight of those suffering from such a debilitating ailment is unfathomable[5,6].

Dermatophytosis affects a patient's sleep, private existence, job existence, and public participation. In general, quality of life refers to a patient's experience of wellness in numerous areas of existence, together with physical wellness, intellectual health, sexual wellness, economic wellness, occupation, and social engagement[5]. According to many clinicians, the presence of a long-standing, significant, backsliding irritated disorder most surely affects those locations that administer the quality of life; similarly, fungus sores may occasionally be found on visible body parts, causing social embarrassment. Tingling is the most common clinical feature of dermatophytosis, and its effects are one of the main reasons contributing to a lower quality of life[6].

The area of inclusion presents the following main concern; for example, fungal faciei may set off social embarrassment because of the appearance of sores on the face. Other key elements identified include the financial cost of treating dermatophytosis, the problem of making use of pores and skin remedies on large regions of the body, the inability to attend events because of a delusional worry of shame, and the shortage of sleep, among others[5,6]. In a survey analysis, Nayankumar and his team in the year 2020 surveyed to determine the impact of dermatophytosis on Quality of Life (QoL). In this study, a total of 299 studies were conducted. According to the results of this research, there was a significant association between total Body Surface Area (BSA) and the Dermatology Life Quality Index (DLQI) score[7]. According to the study conducted by Mushtaq et al (2020), the presence of fungus corporis was thought to have a significant impact on the choice of clothing. Male respondents reported losing more work or study hours as a result of their illness, which was mostly linked to the BSA involved. “35.6” percent of patients

reported problems with sexual activity, which has a strong link to the fungus cruris. The study found and analyzed extensively on the quality of life due to dermatophytosis. They concluded that the median wage for a middle-class family was considered to be 10,000 Indian rupees, with an IQR of 8000–19,000 and the gross annual income weight was found to be 3.558, while the average monetary concern expressed by knowledge was 3.1[8].

The economic burden had a strong link to "previous treatment inexact expense," monetary anxiety, and the Dermatology Life Quality Index. Both monetary concern and monetary weight had a clear relationship with the extent of the illness[7,8]. According to another study, dermatophytosis can have a big effect on a patient's emotional and economic well-being. Despite this, evidence on personal happiness (quality of life) in dermatophytosis patients is scarce. The purpose of this study was to find out how satisfied patients with dermatophytosis were with their treatment. The findings of this study by Doshi et al (2020) reveal that dermatophytosis has a significant impact on the quality of life of those affected. The severity of the illness had an effect on the dermatological life quality index score. This focus also emphasizes the viability of a dermatological life quality index score-based quality of life assessment in dermatophytosis[9].

The bottom line is that dermatophytosis has a major impact on the quality of life of patients with this disease. According to findings by Patel et al (2020) that in terms of both psychological and financial terms, dermatophytosis is affecting the lives of patients. The lifestyle and behaviors of the patients have been changed due to chronic dermatophytosis. The sleeping patterns of the patients have changed due to dermatophytosis. Hence, it is noticed that the quality of life in financial terms is also affected due to expenditures[10,11].

### Conclusion

An overview of the influence of dermatophytosis skin infection on the life of a patient has been analyzed. The approach of this research was questionnaire based. Dermatophytosis has a negative impact on the lives of patients, both "psychologically and financially." The study concluded that mostly the patients had moderate to severe impact on Quality of Life (QoL) due to dermatophytosis. The study further concluded that the impact is more on the females' lives than males.

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