

Original Research Article

A study of clinical profile and quality of life in patients with scabies

Bindushree R.*, Abhineetha Hosthota

Department of Dermatology, The Oxford Medical College and Research Centre, Bangalore, Karnataka, India

Received: 20 May 2021

Revised: 30 May 2021

Accepted: 05 June 2021

*Correspondence:

Dr. Bindushree R.,

E-mail: bindushreederjay@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Scabies is an ectoparasitic dermatosis caused by *Sarcoptes scabiei* and is a public health issue in all countries regardless of socioeconomic status. Scabies can lead to stigmatization, depression, insomnia, and may significantly affect the quality of life. The aim of the study was to find the demographic profile, clinical morphology and quality of life in patients suffering from scabies.

Methods: This was a prospective, non-interventional, hospital-based cross-sectional study. Adult patients with scabies reporting to the dermatology department were enrolled in the study. Demographic details, clinical findings, past history and family history was recorded in a proforma. Questionnaire about quality of life was given to the patients and a detailed analysis was done.

Results: A total of 120 cases of scabies were enrolled in this clinical study. The most affected age group was between 18 and 30 years. Most common site involved was interdigital spaces (83%) followed by genitalia (48%) and abdomen (42%). The most common lesion was excoriation (91%) followed by papule (88%) and nodules (33%). Out of 120 patients, 111(92%) patients experienced difficulty in working at the work place, 83.3% of patients had feeling of embarrassment, social relationship was affected in 82.5% of patients. Majority of the patients (38.5%) had mild impairment of quality of life.

Conclusions: Feeling of embarrassment, difficulty in work place, social stigmata and depression were frequently observed in patients with scabies. In our study scabies mildly affected the quality of life.

Keywords: Scabies, *Sarcoptes scabiei*, Quality of life, Embarrassment

INTRODUCTION

Scabies is an ectoparasitic highly contagious dermatosis caused by *Sarcoptes scabiei* and is a public health issue in all countries regardless of socioeconomic status. In developed countries, delay in diagnosis can lead to institutional outbreaks whereas in developing countries, poor access to health care contributes to disease under-treatment and long-term systemic sequelae.¹ Scabies affects an estimated 300 million people around the world every year. Although it can affect individuals at any socioeconomic level, individuals who live in poverty or in overcrowded conditions are at much higher risk for scabies.² Infestation with the scabies mite results in an

intensely itchy skin eruption consisting of papules, nodules and vesicles.³ While the pruritis itself causes significant distress, break in the epidermis due to burrowing of the mite, and the skin damage caused by the excoriation serve as portals of entry for pathogenic bacteria. The clinical consequences of secondary bacterial infection, especially with group A streptococci results in significant and frequently unrecognized morbidity.⁴ Skin diseases like scabies has detrimental effect on the quality of life of patients. This psychosocial aspect of skin disease has important implications for optimal management of patients with scabies. Although dermatologists and other clinicians have long recognized the impact of skin disease on a patient's life, it is only recently that quality of life measures have been used as assessment parameters in the

management of skin diseases.⁵ The aim of the study was to find the demographic profile, clinical morphology and quality of life in patients suffering from scabies.

METHODS

This was a prospective, non-interventional, hospital-based, cross-sectional study undertaken from March 2020 to February 2021 at the dermatology department of Oxford medical college hospital, Bangalore. One hundred and twenty consecutive patients of scabies were enrolled in the study. Diagnosis of scabies was made by the presence of typical lesions in the site of predilection, nocturnal itching, occurrence of similar complaints in the contact person.

Adults above 18 years of age were included in the study. Pregnant and lactating women and patients having other chronic cutaneous and systemic conditions like psoriasis, acne, diabetes, hypertension, bronchial asthma were excluded from the study. A written consent was taken from the patients. Demographic details, clinical findings, past history and family history was recorded in proforma. Questionnaire about quality of life was given to the patients to be filled. Modified dermatology life quality questionnaire for scabies by Worth et al was slightly modified as per the requirement of Indian population.⁶

Total score was calculated by summing the score of each 5 question (Table 1) resulting in a possible maximum of 15 and minimum of 0. The higher the score, the more the quality of life is impaired. A score of 0-1 shows no effect at all on patient's life, 2-5 indicates mild quality of life impairment, 6-10 indicates moderate impairment and 11-15 demonstrates severe impairment.⁷

Table 1: Modified dermatological life quality questionnaire.

Questionnaires	Response
Over the last week, how embarrassed or self-conscious have you been because of your skin?	A/B/C/D
Over the last week did your skin condition affect your work activities?	A/B/C/D
Over the last week did your skin condition cause problem in your sexual relationship?	A/B/C/D
Over the last week did you feel inferiority complex or depressed?	A/B/C/D
Over the last week did your skin condition affect your social contacts?	A/B/C/D

A- very much, B- quite a lot, C- only a little, D- not at all.

Statistical analysis

Data was compiled in Microsoft excel after coding and was analyzed using SPSS 20 version software. Qualitative data

was represented by frequencies and proportions and analyzed.

RESULTS

A total of 120 cases of scabies were enrolled in this clinical study. The mean age of the study population was 35.18 ± 5.44 (18-78) years. The duration of the symptoms ranged from 2 days to 3 months. In our study, 67 (56%) patients were males and 51 (44%) were females. 56 (47%) patients belonged to urban area and 64 (53%) patients were from rural area. The most affected age group was between 18 and 30 years. 82 (68%) patients were literates. Among 120 patients, 45 (37.5%) were employed, 33 (27.5%) were students, 24 (20%) were housewives. Nocturnal exacerbation of itching was present in 96 (80%) patients. Positive family history was seen in 80 (67%) patients. Skin lesions was present in 103 (86%) patients. Past history of scabies was seen in 25 (21%) patients and secondary infection was seen in 10 (8%) patients. Multiple sites were involved in majority of the patients. Most common site (Table 4) involved was interdigital spaces (82.5%) followed by genitalia (48%) and abdomen (42%). The most common lesion (Figure 2) was excoriation (91%) followed by papule (88%) and nodules (33%).

Out of 120 patients, 111 (92%) patients experienced difficulty in working at the work place, 83.3% of patients had feeling of embarrassment, social relationship was affected in 82.5% of patients, sexual relationship was affected in 71% of patients. 64% of the patients had depression (Table 5). Majority of the patients (38.5%) had mild impairment of quality of life, Moderate effect was seen in 28% of patients, severe effect was seen in 16% and 17% patients did not have any effect on quality of life (Figure 3).

Table 2: Age distribution.

Age (years)	Frequency	Percentage (%)
18-30	48	40
31-40	29	34.8
41-50	20	16.67
51-60	10	8.3
Above 60	13	10.8
Total	120	100

Table 3: Clinical profile of patients with scabies.

Complaints	Frequency	Percentage (%)
Nocturnal aggravation of itching	96	80
Skin lesions	80	67
Family history	103	86
Past history	25	21
Secondary infection	10	8

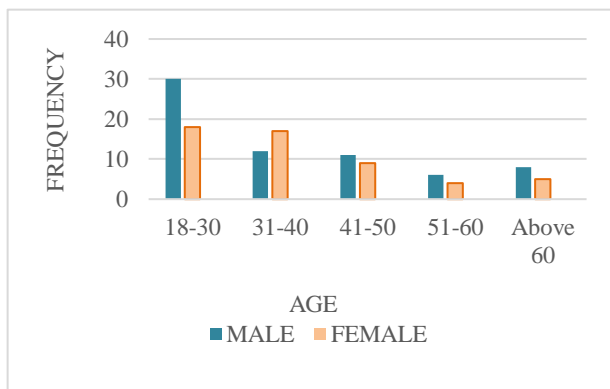
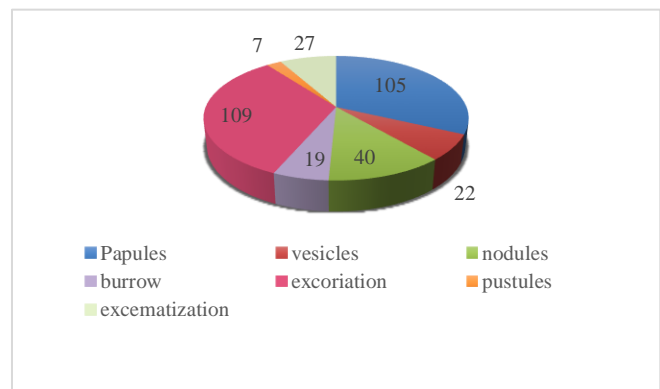
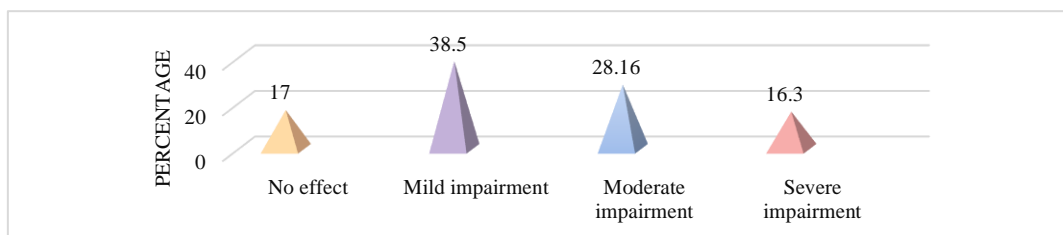
Table 4: Distribution of lesions according to the site.

Site	Frequency	Percentage (%)
Interdigital spaces	99	82.5
Hands	45	37.5
Wrist	23	19
Forearm	35	29
Arm	25	21
Axilla	36	30
Abdomen	50	41.7
Thorax	16	13
Gluteal area	22	18.3
Genitalia	58	48.3
Groin	37	31
Legs	11	9

Table 5: Impairment of quality of life in adult patients.

Severity of impairment of quality of life (N=120)					Sex wise distribution (N=120)		
Questions	A (%)	B (%)	C (%)	D (%)	Male N=67 (%)	Female N=53 (%)	Total N=120 (%)
Feeling embarrassed	9 (7.5)	39 (32.5)	52 (43.3)	20 (16.6)	58 (48.3)	42 (35)	100 (83.3)
Affected the work activities	21 (17.5)	51 (42.5)	39 (32.5)	9 (7.5)	65 (54)	46 (38)	111 (92)
Social contacts	5 (4)	22 (18.3)	72 (60)	21 (17.5)	57 (47.5)	42 (35)	99 (82.5)
Sexual relationship	13 (10.8)	45 (37.5)	27 (22.5)	35 (29)	45 (37.5)	40 (33.3)	85 (70.8)
Feeling depressed	11 (9)	12 (10)	41 (34)	56 (46.7)	34 (28)	30 (25)	64 (53)

A- very much, B- quite a lot, C- only a little, D- not at all.

**Figure 1: Age and sex distribution.****Figure 2: Morphology of lesions.****Figure 3: Effect on quality of life.**

DISCUSSION

Human scabies is a highly contagious infestation of the skin caused by the mite *Sarcoptes scabiei* var. *hominis*, which can be easily passed from an infected person to their household members and sexual partners. Transmission is generally by direct, prolonged skin-to-skin contact, but occasionally, the mite can spread indirectly, via clothing, towels, or bedsheets.⁸ The life cycle of the scabies mite (*S. scabiei* var. *hominis*) begins with the pregnant female burrowing into the human epidermis and laying 2-3 eggs per day. Larvae emerge after 48-72 h and form new burrows. The larvae reach adulthood in 10-14 days, mate, and the cycle is repeated.^{3,9} Human scabies mites are capable of surviving in the environment, outside the human body, for 24-36 h in normal room conditions and during this time, they remain capable of infestation.¹⁰ In classic scabies, lesions favour the finger webspaces, hands, the volar surfaces of the wrists, axillae, feet, waistline, lower buttocks, inner thighs, the areola in women, and genitalia in men. The average mite load is 5 to 15.¹¹ Generalized pruritus that is worse at night is a hallmark feature and may be mediated by nonhistaminergic itch mechanisms. Pruritus can be severe, negatively

impacting quality of life. However, sensitization to mite antigens occurs 4 to 6 weeks after the initial infestation, and therefore asymptomatic carriage is common during this period. With reinfestation, itching begins within days, and presentations may be more severe. Pruritus may be absent in infants, elderly, patients inappropriately treated with topical corticosteroids, or those taking immunosuppressive/anti-inflammatory agents.¹ Burrows are only occasionally visible as short, linear, or wavy tracks with an intact or eroded vesicle/pustule containing the mite. Most burrows are found on the hands and wrists but can also be seen on the elbows, genitalia, buttocks, and axillae. More commonly, nonspecific secondary lesions are seen, which includes excoriated papules, eczematous plaques, and impetigo.

Prolonged scratching can result in lichenification and prurigo nodularis.^{1,12} Besides the skin lesions, scabies even causes substantial morbidity from secondary infections and post-infective complications such as acute post-streptococcal glomerulonephritis.¹³ Furthermore, scabies can lead to stigmatization, depression, insomnia, and significant direct and indirect financial costs and may affect the quality of life.¹⁴ Crusted scabies also called as Norwegian scabies is a rare condition caused by the host response to control the mite, resulting in hyperinfestation with millions of mites, severe inflammation and hyperkeratotic reaction. Approximately one-half of patients with crusted scabies do not report itching. Crusted scabies can occur in immunologically normal hosts, although it is more often associated with immunodeficiencies such as HIV, human T-lymphotropic virus 1, leukemia, T-cell lymphoma or autoimmune disease, as well as developmental delay and malnutrition.¹⁵ Various treatment options of scabies are 25%

benzylbenzoate, 1% gamma benzene hexachloride (GBHC), 6% precipitated sulfur and 5% permethrin (which is regarded by most as the treatment of choice) and oral therapy with Ivermectin 200 µg/kg is fast emerging as another choice.¹⁶

Many patients experience persistent symptoms for up to two weeks after curative treatment. This is likely due to the ongoing immune response to mite antigens. However, if symptoms persist beyond this period, a number of possible explanations should be considered. These include incorrect initial diagnosis, incorrect application of the topical scabicide, poor penetration of the agent into scaly skin or hyperkeratotic fingernails, reinfection from untreated contacts or contaminated fomites, misdiagnosis of secondary eczema as treatment failure, contact dermatitis caused by the topical therapy, or finally drug resistant infection.^{2,4}

In our study, a total of 120 adult patients with scabies were enrolled. Males outnumbered females which is in concordance with previous studies by Das et al and Gang et al.^{13,16} Whereas in a study done by Nair et al males and females were equally affected.

The most common age group affected in our study was 18-30 followed by 31-40 years of age group. Whereas in a study by Nair et al the common age group affected was 21-40 years. In our study 53% patients were from rural area which was similar to the study by Nair et al where maximum patients belonged to rural area.

Nocturnal exacerbation of itching was present in 80% patients and positive family history was present in 86% of the patients which was in accordance with previous studies.^{7,13} Majority of our patients had multiple body site involvement. Most common site involved was interdigital spaces (83%) followed by genitalia (48%) and abdomen (42%). These findings are in concordance with the study done by Nair et al. In the study done by Das et al genitalia were the commonest site followed by interdigital spaces. The most common lesion was excoriation (91%) followed by papule (88%) and nodules (33%) which is in contrast to the study by Nair et al where majority of the patients had papules (84.3%) followed by excoriations.

Eczematization and secondary bacterial infection was noted in 22.5% and 8% patients respectively. Nair et al found eczematization in 50% cases and secondary infections in 21.56% patients and Das et al found papular lesions in 76% cases, papulovesicular and eczematous lesions in 23 and 24% patients respectively.

Out of 120 patients, majority (92%) patients experienced difficulty in working at the work place, 83.3% of patients had feeling of embarrassment, social contacts were affected in 82.5% of patients, sexual relationship was affected in 71% of patients, 64% of the patients had depression. Similar findings were seen in study done by Nair et al where the major domain affected was work

activity in 74.2% cases followed by feeling of embarrassment in 64.5% patients

In our study, majority of the patients (38.5%) had mild impairment of quality of life, Moderate effect was seen in 28% of patients, severe effect was seen in 16% and 17% patients did not have any effect on quality of life.

In the study done by Worth et al about one-fifth of the patients did not feel any restriction and scabies had a mild effect on the quality of life in 28.1% patients and a moderate impact on quality of life was seen in 36.8% of adults and large effect on their quality of life was seen in 13.9% of patients with scabies.⁶

Limitations

Small sample size and pediatric population (children below 18 years) were not included in this study.

CONCLUSION

Feeling of embarrassment, difficulty in work place, social stigmata and depression were frequently observed in patients with scabies. In our study scabies mildly affected the quality of life. Early diagnosis along with pharmacological intervention and proper patient counselling and education may be an effective strategy to improve quality of life among scabies patients.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

REFERENCES

1. Thomas C, Coates SJ, Engelman D, Chosidow O, Chang AY. Ectoparasites: Scabies. J Am Acad Dermatol. 2020;82(3):533-48.
2. Banerji A, Canadian Paediatric Society, First Nations, Inuit and Métis Health Committee. Scabies. Paediatr Child Health. 2015;20(7):395-402.
3. Chandler DJ, Fuller LC. A Review of Scabies: An Infestation More than Skin Deep. Dermatology. 2019;235(2):79-90.
4. Carthy JS, Kemp DJ, Walton SF, Currie BJ. Scabies: more than just an irritation. Postgrad Med J. 2004;80(945):382-7.
5. Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI)--a simple practical measure for routine clinical use. Clin Exp Dermatol. 1994;19(3):210-6.
6. Worth C, Heukelbach J, Fengler G, Walter B, Liesenfeld O, Feldmeier H. Impaired quality of life in adults and children with scabies from an impoverished community in Brazil. Int J Dermatol. 2012;51(3):275-82.
7. Nair PA, Vora RV, Jivani NB, Gandhi SS. A Study of Clinical Profile and Quality of Life in Patients with Scabies at a Rural Tertiary Care Centre. J Clin Diagn Res. 2016;10(10):1-5.
8. Marotta M, Toni F, Dallolio L, Toni G, Leoni E. Management of a family outbreak of scabies with high risk of spread to other community and hospital facilities. Am J Infect Control. 2018;46(7):808-13.
9. Lassa S, Campbell MJ, Bennett CE. Epidemiology of scabies prevalence in the U.K. from general practice records. Br J Dermatol. 2011;164(6):1329-34.
10. Arlian LG, Runyan RA, Achar S, Estes SA. Survival and infectivity of *Sarcoptes scabiei* var. *canis* and var. *hominis*. J Am Acad Dermatol. 1984;11(2):210-5.
11. Mellanby K. The development of symptoms, parasitic infection and immunity in human scabies. Parasitology. 1944;35:197-206.
12. Walton SF. The immunology of susceptibility and resistance to scabies. Parasite Immunol. 2010;32(8):532-40.
13. Gang JA, Sheng XX, Sheng BX, Junmin W, Songmei G, Ying YD, et al. Quality of life of patients with scabies. J Eur Acad Dermatol Venereol. 2010;24(10):1187-91.
14. Heukelbach J, Mazigo HD, Ugbomoiko US. Impact of scabies in resource-poor communities. Curr Opin Infect Dis. 2013;26(2):127-32.
15. Roberts LJ, Huffam SE, Walton SF, Currie BJ. Crusted scabies: clinical and immunological findings in seventy-eight patients and a review of the literature. J Infect. 2005;50(5):375-81.
16. Das S, Chatterjee T, Banerji G, Biswas I. Evaluation of the commonest site, demographic profile and most effective treatment in scabies. Indian J Dermatol. 2006;51(3):186-8.

Cite this article as: Bindushree R, Hosthota A. A study of clinical profile and quality of life in patients with scabies. Int J Res Dermatol 2021;7:508-12.