

Burden of Skin Diseases: A Camp-based Cross-sectional Study in a Tribal Area of Maharashtra

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Abstract

Background: Skin diseases, though highly prevalent in tribal regions, are not given due importance. Not much research has been done on skin diseases and their management in these areas. The study aimed to describe the prevailing types of skin conditions in the tribal predominant area, Sakwar, in Maharashtra. **Materials and Methods:** Community Health Workers in the field practice area created awareness about skin diseases and recruited cases to camp on a single day. A total of 384 beneficiaries attended the camp, which was assessed by four qualified dermatologists. Data collected from clinical case sheets and patient interviews were used for the study. **Results:** Fungal infection was the most prevalent type of skin disease, followed by scabies, eczema, acne, and hyperpigmentation disorders. **Conclusion:** Skin diseases especially fungal infections should be given due importance in primary healthcare settings. Capacity building of primary care physicians, as well as frontline workers for accurately diagnosing and managing skin conditions, needs to be done.

Keywords: Fungal infections, leprosy, Maharashtra tribal population, marginal population, skin diseases

INTRODUCTION

Skin diseases can range anywhere from simple acne to serious conditions like squamous cell carcinoma. It affects people of all cultures, regions, and age groups. Despite affecting a majority of the population at a time, they do not get much importance from the public health point of view. The Global Burden of Disease Study 2017 reported that years of life lost due to disability for skin disease is between 30 and 40 months for an adult.^[1,2] The quality of life is also affected due to the chronicity of some of the diseases like psoriasis. They pose a financial burden along with psychosocial consequences due to the stigma attached to them.^[3] Skin conditions exist equally in developed and developing countries with skin infections being more common in developing countries. Several skin diseases are often neglected and people refrain from going to the doctor or end up doing self-treatment.^[4-7]

The study area Sakwar is a tribal predominated village of Maharashtra. The rural health training center is located

in Sakwar village. People from five tribal blocks: Wada, Jawhar, Mokhada, Dahanu, and Talsari, which covers a total population of 8,96,596 (2011 Census of India) seek services from this center. Dermatologists are a scarce resource in this area. The outpatient department (OPD) cases reported at the center represent the tip of an iceberg. Similar studies across the state have contributed to the mass drug administration of scabies in different rural areas of the state. This study aims to understand the different types of skin infections prevailing in the region, across different age groups and gender, so that appropriate interventions can be instituted.

MATERIALS AND METHODS

This cross-sectional study was undertaken in a rural field practice area of a tertiary medical hospital. The ethical aspect of the study was reviewed and approved by

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Submission: 12-09-2021 Revision: 20-11-2021
Acceptance: 16-01-2022 Web Publication: 09-03-2022

Access this article online

Quick Response Code:



Website:
www.tjdonline.org

DOI:
10.4103/tjd.tjd_111_21

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How to cite this article: Manapurath RM, Hadaye R, Varughese CS, Gadapani B. Burden of skin diseases: A camp-based cross-sectional study in a tribal area of Maharashtra. Turk J Dermatol 2022;16:12-5.

Institutional Ethics Committee, Seth GS Medical College, and KEM Hospital Mumbai. The study duration was for three months from September to November 2019. Study investigators, Community Health Workers (CHWs), and frontline health workers raised awareness about skin-related complaints and details of the skin camp during their regular field visits in tribal villages of the Sakwar region over a month. A team of four dermatologists evaluated the patients on a single-day camp. The diagnoses were made based on the clinical symptoms by a qualified dermatologist. The sample size was 402 as per OPD records. Out of them, 18 did not give consent to participate in the study. Thus, the final sample size was 384. Data were collected through patient interviews. Diagnoses of the skin conditions were obtained from the clinical case sheet.

Data were entered into a Microsoft excel sheet and analyzed using SPSS version 16. Based on the diagnosis from the interview schedule, the proportion of all types of skin diseases was calculated. Those diseases whose proportions were above 10% were further compared based on gender and age group.

RESULTS

The baseline survey has shown that out of all the 384 beneficiaries, 160 (41.6%) were males and 224 (58.4%) were females. The mean age group of the participants was 43.21 ± 17.7 years. Approximately 66.7% were Hindus, 16.9% were Christians, 16.1% were Muslims, and 0.3% were Buddhist by religion. Maximum participants belong to 41–60 years of age (46.4%), followed by 21–40 (26.5%), above 60 (15.1%), 11–20 (6.25%), and below 10 years (5.72%). The majority of the participants were farmers by occupation (34.6%), unemployed and irregular jobs constitute (31.2%), housewives (17.4%), street vendors (10.9%), teachers (6.1%), and mason (0.7%). About 69.7% of participants

were married and only 14.9% reported having any chronic disease such as diabetes, hypertension, or chronic asthma. Approximately 77.1% were living in three to six-membered houses, 16.4% in more than a four-membered house, and only 6.5% in less than a three-membered house.

Proportion of skin diseases among study subjects

Out of the types of skin diseases, fungal infections (36.19%), scabies (16.14%), eczema (12.2%), and acne (10.42%) were observed to be highest in prevalence, followed by hyperpigmentation disorders (9.1%), pruritus (8.07%), dandruff (6.25%), hair fall (5.73%), vitiligo (5.46%), suspected Hansen's disease (3.9%), urticaria (4.42%), contact dermatitis (4.16%), skin tags (3.38%), psoriasis (3.13%), moles (2.08%), and melasma (1.82%).

[Table 1] shows the distribution of common skin infections with age and gender. About 55.3% of the beneficiaries attended the camp as the provisions were free, 32.7% by nearest location and only 0.5% mentioned the quality of the service. About 85.6% of the total sample stated that they were satisfied with the treatment provided. Approximately 61.5% of the study sample believe their skin condition to be a minor problem. About 44.7% took over-the-counter (OTC) prescriptions for their skin-related complaints.

Health seeking behavior of suspected Hansen's disease patients

A total of 83.3% of the patients perceived their symptoms to be a minor problem. About 44.4% took OTC prescriptions. The 33.3% had symptoms for more than six months before they decided to seek medical care. Approximately 22.2% were informed by CHWs to attend the camp.

Table 1: Comparison of common skin infections according to age group and gender

Age group (years)	Fungal infections	Scabies	Eczema	Acne	Suspected Hansen's disease
<10	6	15	4	0	2
11–20	11	14	5	11	2
21–40	41	33	8	29	3
41–60	48	0	16	0	11
>60	33	0	14	0	0
Pearson χ^2 value/Fishers' exact value, <i>P</i> value	19.7, 0.001	38.9, 0.001	13.6, 0.009	0.005	6.1, 0.17
Gender					
Male	85	31	29	19	9
Female	54	31	18	21	9
Total	139	62	47	40	18
Pearson χ^2 value, <i>P</i> value	0.712, 0.39	2.1, 0.16	8.84, 0.003	0.62, 0.42	0.54, 0.46

DISCUSSION

The study population consisted predominantly of tribal people who belong to the Palghar district of Maharashtra, the majority of them being females. Maximum participants belonged to the 41–60 age group and least was from 1 to 10 age group. The 77.1% were living in a house with three to six members and nearly 16% were living in overcrowded houses.

The most common conditions seen were fungal infections, scabies, eczema, acne, and pigmentation disorders. Infective conditions outnumber noninfective conditions. HA higher proportion of fungal infection is one of the significant findings of the study, which can be attributed to the hot and humid climate of the region. Indigenous medicines are prevalent among the tribal population, which may complicate fungal infection-like conditions. Fungal infections cause increased morbidity and suffering, and they could be managed at the primary healthcare level.

The second common skin infection seen was scabies and complication vary from sleep disturbance to chronic organ disease through secondary bacterial infections if untreated. A study conducted by Sharma *et al.* in Rural India has shown a prevalence of 13% for scabies.^[8] Our study shows a slightly higher proportion than this. The Tribal Health department of SEARCH NGO is already focussing on scabies as one of the important problems to be addressed among tribals in Maharashtra and an ongoing project for a reduction in prevalence by mass drug administration is being conducted.^[9]

Eczema is the most common disease among noninfective conditions (12.2%). This is in agreement with other studies conducted in central rural India.^[8] The proportion of acne cases was higher (10.42%) as compared with another hospital-based study in Kolkata (4.37%). Considering the significant impact of acne on quality of life as shown in a hospital-based study based on Dermatology Life Quality Index scoring in Chennai, it should be treated diligently especially among adolescents.^[10] Hyperpigmentation disorders constitute 9.1% of the study sample and this is very much lesser than shown by research in four Indian cities.^[11] Adding to the literature, we can see from the table that fungal infections and eczema are more common in the older age group whereas acne was more common in the adolescent age group.

The proportion of suspects of Hansen's disease in this study (3.9%), is comparable with a pan Maharashtra study on leprosy prevalence which is 2.25 per 10,000 population in tribal areas.^[12] There is already an existing health program in India for leprosy and we have achieved elimination status. The existing surveillance system may be adequate in picking up cases but has scope for enhancing the expertise of the frontline workers. There are still pockets, especially in tribal areas, with the prevalence

of leprosy above elimination levels.^[13] A larger study done in Bihar by Lepra (an international non-governmental organization) has shown that contact surveys, focal surveys, and special surveys in underserved areas like tribal districts can pick up more than double-positive cases than traditional case detection methods.^[14] Many of the leprosy detection campaigns evolved as patch detection campaigns, whereas other common symptoms such as shiny, oily skin, and nerve involvement were missed. In our study, these symptoms constituted nearly 40% of the suspected cases of Hansen's. Hence training frontline workers for aggressive symptoms screening remains the baseline of goal towards the elimination of this disease.

Since primary care physicians (PCPs) are the first point of contact in health care, they should be skilled at correctly diagnosing and treating, or referring patients presenting with skin conditions. However, they seem to lack sufficient knowledge, expertise, or even empathy for those with skin problems.^[15-17] PCPs need to be trained for this and utilize technologies like tele dermatology for improving the diagnosis and management of common skin conditions in the tribal community.^[18]

Social impact of skin diseases

The majority of the participants mentioned either free treatment or easy accessibility as the reason for attending the camp. Even though the majority were satisfied with the treatment, few of them did not approve of the quality of the treatment received. Despite being from poor socioeconomic status, nearly half of the study sample had already taken OTC prescriptions for skin-related diseases, thus leading to out-of-pocket expenditures. The number seems high concerning fungal infection, scabies, and suspected Hansen's disease. Poor hygiene, environment, and illiteracy in tribal areas are social factors increasing the risk of skin diseases. Ignorance, delay in seeking treatment, and reduced treatment compliance from patients' side coupled with inadequate knowledge, incorrect treatment, and not giving the condition its due importance from healthcare workers' side add to the morbidity and suffering among the population.^[18]

The generalizability of these results is subject to certain limitations such as not using any laboratory or diagnostic methods such as dermoscopy and biopsy. Notwithstanding these limitations, this work offers valuable insights into the burden of skin diseases in western Maharashtra for the first time.

CONCLUSION

This study has shown the burden of skin diseases in tribal predominated areas to be high. Skin diseases should be given due importance in primary health care. More focus should be given to such preventable and curable skin diseases like fungal infections and scabies. Capacity

building of PCPs and frontline workers must be done. For better planning of mass treatment and policymaking, more epidemiological data on the unique geography are required. Improving the expertise of the frontline workers for detecting leprosy by equally focusing on symptoms other than skin patches is also required. This will help in saving resources by decreasing morbidity.

Financial support and sponsorship

Diamond Jubilee Society Trust (DJST), KEM Hospital, Mumbai.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Seth D, Cheldize K, Brown D, Freeman EF. Global burden of skin disease: Inequities and innovations. *Curr Dermatol Rep* 2017;6:204-10.
- James SL, Abate D, Hassen Abate K, Abay SM, Abbafati C, Abbasi N, *et al.* Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. Available from: <https://github.com/iHmeuw/>. [Last accessed 2021 Sep 11].
- Barankin B, DeKoven J. Psychosocial effect of common skin diseases. *Can Fam Physician* 2002;48:712-6.
- Hay R, Estrada R, Grossmann H. Managing skin disease in resource-poor environments: The role of community-oriented training and control programs. *Int J Dermatol* 2011;50:558-63.
- Grover S, Ranyal RK, Bedi MK. A cross-section of skin diseases in rural Allahabad. *Indian J Dermatol* 2008;53:179-81.
- Hay RJ, Fuller LC. The assessment of dermatological needs in resource-poor regions. *Int J Dermatol* 2011;50:552-7.
- Kar C, Das S, Roy AK. Pattern of skin diseases in a tertiary institution in Kolkata. *Indian J Dermatol* 2014;59:209.
- Sharma RS, Mishra RS, Pal D, Gupta JP, Dutta M, Datta KK. An epidemiological study of scabies in a rural community in India. *Ann Trop Med Parasitol* 1984;78:157-64.
- Tribal Health Department | Search For Health [Internet]. [Last accessed 2021 Sep 11]. Available from: <https://searchforhealth.ngo/tribal-health-department/>. [Last accessed 2021 Sep 11].
- Hazarika N, Rajaprabha RK. Assessment of life quality index among patients with acne vulgaris in a suburban population. *Indian J Dermatol* 2016;61:163-8.
- Hourblin V, Nouveau S, Roy N, de Lacharrière O. Skin complexion and pigmentary disorders in facial skin of 1204 women in 4 Indian cities. *Indian J Dermatol Venereol Leprol* 2014;80:395-401.
- Katkar D, Mote BN, Adhav A, Muthuvel T, Kadam S. Epidemiological perspective of national leprosy eradication programme in Maharashtra: Focusing on “tribal hot-spot” of tribal district. *Indian J Community Med* 2017;42:174-6.
- Singal A, Sonthalia S. Leprosy in post-elimination era in India: Difficult journey ahead. *Indian J Dermatol* 2013;58:443-6.
- Enhanced active case-finding, identifying leprosy cases missed by recent detection campaigns in Munger District, Bihar, India | Infolep [Internet]. [Last accessed 2021 Sep 11]. Available from: <https://www.leprosy-information.org/resource/enhanced-active-case-finding-identifying-leprosy-cases-missed-recent-detection-campaigns>. [Last accessed 2021 Sep 11].
- Patro BK, Tripathy JP, De D, Sinha S, Singh A, Kanwar AJ. Diagnostic agreement between a primary care physician and a teledermatologist for common dermatological conditions in north India. *Indian Dermatol Online J* 2015;6:21-6.
- Rübsam ML, Esch M, Baum E, Bösner S. Diagnosing skin disease in primary care: A qualitative study of GPS' approaches. *Fam Pract* 2015;32:591-5.
- Kownacki S. Skin diseases in primary care: What should GPS be doing? *Br J Gen Pract* 2014;64:380-1.
- Singhal RR, Talati KN, Gandhi BP, Shinde MK, Nair PA, Phatak AG. Prevalence and pattern of skin diseases in tribal villages of Gujarat: A teledermatology approach. *Indian J Community Med* 2020;45:199-203.