

## Original Research Article

**A Prospective Study to Assess the Scabies Outbreak in a Known Population: A Hospital Based Study****Sonakshi Pargi<sup>1\*</sup>, Pratap Singh Parmar<sup>2</sup>, Harendra Meena<sup>3</sup>**<sup>1</sup>*Assistant Professor, Department of Dermatology, Venereology & Leprology, Government Medical College Dungarpur, Rajasthan, India*<sup>2</sup>*Professor, Department of General Medicine, Government Medical College Dungarpur, Rajasthan, India*<sup>3</sup>*Senior Resident, Department of Dermatology, Venereology & Leprology, Government Medical College Dungarpur, Rajasthan, India***Received: 11-05-2021 / Revised: 06-07-2021 / Accepted: 23-10-2021****Abstract**

**Background:** Scabies is a skin disease caused by infestation with the mite, *Sarcoptes scabiei* var. *hominis*. The present study was conducted to assess the Scabies Outbreak in a Known Population. **Materials and Methods:** The prospective study was conducted to assess the Scabies Outbreak in a Known Population over a period of 1 year. Data was recorded and examinations were done. The recorded data was compiled, and data analysis was done using SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA). **Results:** In the present study a total population of 565 participants were included in which 325 participants (57.52%) had scabies. 33.53% males had scabies and 66.46% females had scabies. Maximum cases were in the age group 71-80 years (54.76%). 17.84% patients had sign & symptoms. Itching was present in 50% patients, scratching in 20.68% patients, rashes in 39.65% patients. **Conclusion:** The present study concluded that the prevalence of scabies was 57.52% in a known population and prevalent in females than males.

**Keywords:** Scabies, *Sarcoptes scabiei* var. *hominis*, outbreak.

This is an Open Access article that uses a fund-ing model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

**Introduction**

Scabies is a skin disease caused by infestation with the mite, *Sarcoptes scabiei* var. *hominis*. The female mite, measuring less than 0.5 mm, burrows into the skin, where antigens on the exoskeleton of the mite, along with its saliva, excreta, and eggs, elicit a hypersensitivity reaction[1]. The resulting skin lesions most commonly affect the hands, wrists, ankles, and feet. In the vast majority of cases of common scabies (also known variably as ordinary, classical, or typical scabies) there is a low number of mites on the patient's body (5 to 15). Crusted scabies (formerly known as Norwegian scabies) is a rare form of the disease characterized by hyperinfestation with thousands to millions of mites and hyperkeratotic 'crusted' skin[2]. Transmission is by direct close contact and, to a lesser extent, via fomites,[3] with a 4–6 weeks incubation period in people never previously infested. Signs include papules, burrows, and nodules[4]. Excoriation due to scratching and parasite-induced inhibition of local immune response can lead to secondary bacterial infection,[5] with resultant risks of impaired renal function and rheumatic heart disease[3,6]. The normal parasitic burden is around 11 burrowing adult female mites per individual[7].

However, some people develop crusted scabies, with hyperkeratotic skin lesions harbouring more than 4700 mites per g[8]. The present study was conducted to assess the Scabies Outbreak in a Known Population.

**Materials and methods**

The prospective study was conducted to assess the Scabies Outbreak in a Known Population over a period of 1 year. All outbreaks were eligible for inclusion. Before the commencement of the study ethical approval was taken from the Ethical Committee of the institute and written consent was taken from the patient after explaining the study. Data for age, medical history, and medication used were collected at preliminary visits and initial clinical visits. Characteristics of outbreaks that were recorded included demographics, number and proportion of residents affected. Examinations were done. Skin scrapes from participants were examined under microscopy the day after the sample was taken. The recorded data was compiled, and data analysis was done using SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA).

**Results**

In the present study a total population of 565 participants were included in which 325 participants (57.52%) had scabies. 33.53% males had scabies and 66.46% females had scabies. Maximum cases were in the age group 71-80 years (54.76%). 17.84% patients had sign & symptoms. Itching was present in 50% patients, scratching in 20.68% patients, rashes in 39.65% patients.

---

\*Correspondence

**Dr. Sonakshi Pargi**

Assistant Professor, Department of Dermatology, Venereology & Leprology, Government Medical College Dungarpur, Rajasthan, India.

E-mail: [drsonakshibagdiya@gmail.com](mailto:drsonakshibagdiya@gmail.com)

**Table 1: Incidence of Scabies Outbreak**

Variable	Total 325 (%)
<b>Gender</b>	
Male	109(33.53%)
Female	216(66.46%)
<b>Age groups</b>	
< 60 years	16(4.92%)
61-70years	19(5.84%)
71-80years	178(54.76%)
>80 years	112(34.46%)

**Table 2: Description of skin signs and symptom**

Skin Signs & Symptoms	Total 325 (%)
<b>Resident complained about skin-related symptoms</b>	
No	209(64.30%)
Yes	58(17.84%)
Unknown	58(17.84%)
<b>Type (if present)</b>	
Itch	29(50%)
Scratching	12(20.68%)
Rash	23(39.65%)

### Discussion

The first reported public health initiatives to control scabies came from the San Blas islands (now known as the Guna Yala region) of Panama in the 1970s and 1980s. Scabies was introduced to the Guna populations and rapidly became endemic, with reported prevalence's of 40–70%[9].

Infestation with the scabies mite results in an intensely itchy skin eruption consisting of papules, nodules and vesicles. Mostly this is the result of host hypersensitivity although the direct effect of mite invasion contributes. For this reason, the incubation period before symptoms occur is 3–6 weeks in cases of primary infestation, but as little as 1–2 days in cases of reinfestation[10,11]. Sensitisation to mite antigens has been demonstrated up to 1 month after primary infestation[12].

The typical distribution of signs of infestation includes areas between the fingers, the wrists, axillae, groins, buttocks, genitals, and the breasts in women. In infants and young children, the palms, soles and head (face, neck and scalp) are more commonly involved[13].

In the present study a total population of 565 participants were included in which 325 participants (57.52%) had scabies. 33.53% males had scabies and 66.46% females had scabies. Maximum cases were in the age group 71–80 years (54.76%). 17.84% patients had sign & symptoms. Itching was present in 50% patients, scratching in 20.68% patients, rashes in 39.65% patients.

Mounsey and colleagues outlined common characteristics of institutional scabies outbreaks. These characteristics included protracted, delayed diagnoses, residents with crusted scabies, and infestation of staff[14].

In settings where scabies prevalence is of epidemic proportions, oral ivermectin seems more effective than topical therapy[15].

### Conclusion

The present study concluded that the prevalence of scabies was 57.52% in a known population and prevalent in females than males.

### References

- Hay, R.J.; Steer, A.C.; Engelman, D.; Walton, S. Scabies in the developing world—Its prevalence, complications, and management. *Clin. Microbiol. Infect.* 2012, 18, 313–23.
- Chosidow, O. Clinical practices. Scabies. *New Engl. J. Med.* 2006, 354, 1718–27.
- Fuller LC. Epidemiology of scabies. *Curr Opin Infect Dis* 2013; 26: 123–26.

- Walton SF. The immunology of susceptibility and resistance to scabies. *Parasite Immunol* 2010; 32: 532–40.
- Swe, Reynolds PM, Fischer SL, K. Parasitic scabies mites and associated bacteria joining forces against host complement defence. *Parasite Immunol* 2014; 36: 585–93.
- Chung SD, Wang KH, Huang CC, Lin HC. Scabies increased the risk of chronic kidney disease: a 5-year follow-up study. *J Eur Acad Dermatol Venereol* 2014; 28: 286–92.
- Mellanby K. The development of symptoms, parasitic infection and immunity in human scabies. *Parasitology* 1944; 35: 197–206.
- 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: 375–81.
- Taplin, D.; Porcelain, S.L.; Meinking, T.L.; Athey, R.L.; Chen, J.A.; Castillero, P.M.; Sanchez, R. Community control of scabies: A model based on use of permethrin cream. *Lancet* 1991, 337, 1016–18.
- Mellanby K. The development of symptoms, parasitic infection and immunity in human scabies [Internet]. *Parasitology*. 1944 Mar; 35(04):197–206. Available from: [http://www.journals.cambridge.org/abstract\\_S0031182000021612](http://www.journals.cambridge.org/abstract_S0031182000021612).
- McCarthy JS, Kemp DJ, Walton SF, Currie BJ. Scabies: more than just an irritation [Internet]. *Postgrad Med J*. 2004 Jul;80(945):382–7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15254301>
- Mellanby K. Scabies in 1976 [Internet]. *R Soc Health J*. 1977 Feb;97(1):32–6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/841017>.
- Heukelbach J, Wilcke T, Winter B, Feldmeier H. Epidemiology and morbidity of scabies and pediculosis capitis in resource-poor communities in Brazil [Internet]. *Br J Dermatol*. 2005 Jul;153(1):150–6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/16029341>
- Mounsey KE, Murray HC, King M, Oprea F. Retrospective analysis of institutional scabies outbreaks from 1984 to 2013: lessons learned and moving forward. *Epidemiol Infect.* 2016;44:2462–71.
- Romani L, Whitfield MJ, Koroivuetta J. Mass drug administration for scabies control in a population with endemic disease. *N Engl J Med*. 2015;373:2305–13.

**Conflict of Interest: Nil Source of support: Nil**