

## Original Research Article

# A study of dermatoses in patients attending pediatric OPD in a tertiary care hospital of Gandhinagar, Gujarat, India

Geet Gunjana<sup>1\*</sup>, Nisha Upadhyay<sup>2</sup>

<sup>1</sup>Department of Pediatrics, GMERS Medical College, Sola, Ahmedabad, Gujarat, India

<sup>2</sup>Department of Pediatrics, GMERS Medical College, Gandhinagar, Gujarat, India

**Received:** 02 January 2017

**Accepted:** 25 January 2017

### \*Correspondence:

Dr. Geet Gunjana,

E-mail: [gunjankhaitan73@gmail.com](mailto:gunjankhaitan73@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

## ABSTRACT

**Background:** Skin diseases in paediatric population are common all over the world. There is a wide variation in the presentation of Dermatoses in various studies. The variation among dermatoses can possibly be due to region of study, prevalent environmental factors, type of population studied, and hygiene and nutritional status and environmental factors. The objective of this study was to study prevalence, pattern of presentation and aetiologies of various dermatoses in paediatrics.

**Methods:** A prospective, observational, single center study involving 500 patients of Dermatoses was carried out in a pediatric outpatient department. Detailed history, clinical presentation and other relevant parameter were recorded in a case record form and analyzed.

**Results:** Majority of patients with dermatoses (39.40%) belong to age group of 6 - 16 years with male preponderance. Etiological analysis showed infections and infestations were most common dermatoses. Bacterial infection (184, 36.80%) was most common followed by viral (87, 17.40%), parasitic (51, 10.20%) and fungal (25, 5.00%) infection. Dermatitis was present in 30.6% patients. Diaper dermatitis (19 patients) was the commonest dermatitis present in infants while eczema and urticaria were the commonest dermatitis in school going children. Pyoderma was the commonest dermatoses in this study, present in 111 patients (22.20%) followed by varicella (14.40%), impetigo (12.80%); scabies (10.20%), eczema (10.20%) and urticaria (7.60%).

**Conclusions:** Dermatoses in children are a wide spread problem which are responsible for significant morbidity in children. The high incidence of infections and infestations are possibly due to poverty, overcrowding, undernutrition, poor hygiene and lack of health education. Skin of the young children is more prone to develop skin disease.

**Keywords:** Clinical profile, Dermatoses, Paediatrics

## INTRODUCTION

Dermatoses is one of the commonest childhood illness. This is because of the delicate nature of skin of infants and children. Around one third of patients attending paediatric out-patient department (OPD) have dermatoses, be it infectious or allergic.<sup>1-4</sup> Majority of dermatoses in children are transient, but some may convert into chronic or recurrent cases.<sup>5</sup> Some diseases can be hereditary also. Chronic dermatoses are associated with significant morbidity and psychological impact.<sup>4</sup>

Majority of the dermatoses result from intrinsic genetic abnormalities have onset in the paediatric age group.<sup>6,7</sup>

The pattern of dermatoses may differ according to the geographical area, age, gender, climatic conditions, seasonal, socio- economic and environmental variations.<sup>8</sup> Malnutrition and pyoderma are more prevalent in developing countries while eczemas are more common in developed countries. Different climatic, cultural and socioeconomic factors may be responsible for development this different representation.<sup>9</sup> Several

problems including lack of education, social backwardness, and lack of healthcare facilities in the rural area, lack of sanitation, excess pollution and overcrowding contribute to more incidences of infectious disorders in developing countries like India.<sup>2,8,10,11</sup>

According to different school based surveys, the incidence of skin diseases amongst children was found to be ranged from 8.7% to 38.8% in various parts of India.<sup>12</sup> Paediatric dermatoses requires a different view from adult dermatoses as there are important differences in clinical presentations, treatment and prognosis.<sup>3</sup> Skin diseases in children are encountered frequently and their characterization are essential for the preparation of academic, research and health plans.<sup>5,13</sup> World Health Organization also has advocated for the strengthening of the community dermatology for developing countries while others have called for training of health workers in the diagnosis and the management of skin disease in a workshop in 20014.<sup>14</sup> These efforts may help in addressing the problem of misdiagnosis and management of these disorders. Paediatric age group, which constitutes the cornerstone of the community, can play an important role in determining the policies of protective medicine and public health. So, this study was planned with the aim to find out the prevalence, pattern and aetiologies of various dermatoses in children and adolescents in tertiary care hospital at Gandhinagar.

## METHODS

This was a prospective, observational, single centre study carried out on the patients attending paediatric OPD at GMERS Medical College, Gandhinagar. All the children between one month to 16 years of age and any gender presented with any dermatoses to the outpatient department between the period of March 2016 to July 2016 were included in the study. Newborns and patients required hospitalization or intensive care treatment were excluded from the study. The study protocol was approved by the institutional ethics committee and written informed consent from the parents or guardians were obtained before enrolling the patient for the study.

A total of 500 children who attended the paediatric OPD during the study period could be included in the study. Detailed history, clinical presentation and other relevant parameter were recorded in a case record form. Primary diagnosis was made by the paediatricians based on the clinical history and clinical features and the diagnosis was confirmed by the dermatologists of GMERS Medical College, Gandhinagar. A detailed general, systemic and cutaneous examination was done. Relevant investigations were carried out whenever deemed necessary. Dermatoses were classified according to the tenth revision of International Statistical Classification of the Diseases (ICD-10).<sup>15</sup> The data obtained was analysed for age and gender wise distribution of patients, clinical profile and aetiologies. Data collected was statistically

analysed using Microsoft excel 2010 and represented as actual frequencies and percentages.

## RESULTS

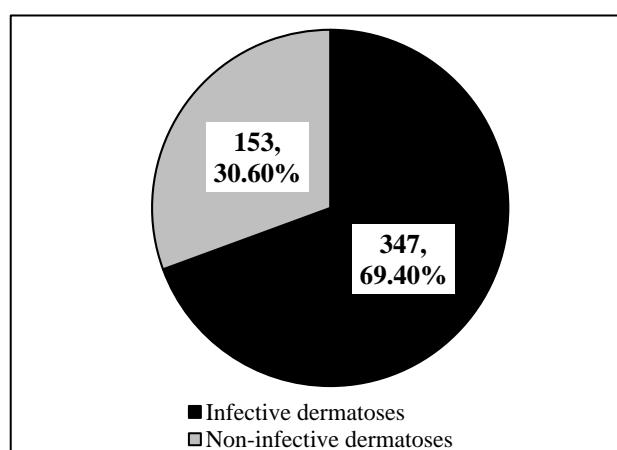
Total 500 patients were included in the present study. Majority of the patients (212, 39.40%) belong to the age group of 6 - 16 years followed by the age group of 1 - 5 years - pre-school age group (197, 39.40%) and of less than 1 year - infants (91, 18.20%). Males (307, 61.40%) were more commonly affected as compared females (193, 38.60%) in the present study with male: female ratio of 1.59:1 (Table 1).

**Table 1: Age and gender distribution.**

Age groups (years)	Gender		Total N (%)
	Male	Female	
< 1	60 (63.73)	31 (36.23)	91 (18.20)
1 - 5	114 (57.87)	83 (42.13)	197 (39.40)
6 - 16	133 (62.74)	79 (37.26)	212 (42.40)
<b>Total N (%)</b>	<b>307 (61.40)</b>	<b>193 (38.60)</b>	<b>500 (100.00)</b>

**Table 2: Age wise distribution of various infections and infestations (n = 500).**

Infections	Age groups (years)			Total N (%)
	<1	1 - 5	6 - 16	
Bacterial	20	74	90	184 (36.80)
Viral	11	31	45	87 (17.40)
Fungal	2	8	15	25 (5.00)
Parasitic	19	25	7	51 (10.20)
<b>Total</b>	<b>52</b>	<b>138</b>	<b>157</b>	<b>347 (69.40)</b>



**Figure 1: Type of dermatoses.**

According to Figure 1, infections were the most common dermatoses in pediatric age group which was present in 347 (69.40%) patients as compared to non-infective dermatoses which was present in 153 (30.60%) patients.

Overall, bacterial infection (184, 36.80%) was more prevalent as compared to viral infection (87, 17.40%), parasitic infection (51, 10.20%) and fungal infection (25, 5.00%) (Table 2). In the different age groups, more or less similar type of infective pattern was observed.

**Table 3: Various dermatitis in different age group (N = 500).**

Type of dermatitis	Age groups (years)			Total N (%)
	<1	1 - 5	6 - 16	
Atopic dermatitis	2	2	4	8 (1.60)
Seborrhoeic dermatitis	3	1	0	4 (0.80)
Diaper dermatitis	19	1	0	20 (4.00)
Eczema	9	19	23	51 (10.20)
Urticaria	4	19	15	38 (7.60)
Alopecia	0	0	3	3 (0.60)
Pityriasis alba	2	17	10	29 (5.80)
<b>Total</b>	<b>39</b>	<b>59</b>	<b>55</b>	<b>153 (30.60)</b>

Out of 500 patients included in the study, only 153 patients (30.6%) had dermatitis. Diaper dermatitis (19 patients) was the commonest dermatitis present in infants. This was followed by eczema and urticaria in 9 and 4 patients, respectively. Eczema and urticaria were the commonest dermatitis in pre-school children 19 patients. Pityriasis Alba was present in 17 patients. Eczema and urticaria were the commonest dermatitis in school going children in 23 and 15 patients, respectively (Table 3).

**Table 4: Distribution of aetiology of various dermatoses in children according to gender (N = 500).**

Skin disorder	Male	Female	Total N (%)
Pyoderma	59	52	111 (22.20)
Varicella	54	18	72 (14.40)
Impetigo	38	26	64 (12.80)
Scabies	31	20	51 (10.20)
Eczema	37	14	51 (10.20)
Urticaria	22	16	38 (7.60)
Pityriasis alba	17	12	29 (5.80)
Tinea	11	11	22 (4.40)
Diaper dermatitis	15	5	20 (4.00)
Measles	7	4	11 (2.20)
Folliculitis	6	3	9 (1.80)
Atopic dermatitis	4	4	8 (1.60)
Seborrhoeic dermatitis	3	1	4 (0.80)
Molluscum contagiosum	1	3	4 (0.80)
Candidiasis	2	1	3 (0.60)
Alopecia	0	3	3 (0.60)

Pyoderma was the commonest dermatoses in this study, present in 111 patients (22.20%) followed by varicella (14.40%). This was followed by impetigo (12.80%); scabies (10.20%) eczema (10.20%) and urticaria (7.60%).

Nearly equal number of both males and females suffered from pyoderma. Varicella was more common in males as compared to females. Impetigo was present in 38 males and 26 females. Scabies was present in 31 males and only 20 females. Males were more commonly affected with eczema and urticaria compared to females (Table 4).

## DISCUSSION

Skin diseases in pediatric patients are common all over the world including urban and rural settings. Though dermatoses are not significantly responsible for mortality of these patients, it causes considerable morbidity. The pattern of skin disease can be a consequence of poverty, malnutrition, overcrowding, poor hygiene, illiteracy, and social backwardness in many parts of India.<sup>16</sup> The evaluation for skin disorders is an important component of health care practice for all, including children.<sup>17</sup> Status of health, hygiene and personal cleanliness of a society can be judged from the prevalence of certain skin diseases in the children of the community.<sup>12</sup>

In this study, dermatoses were most common in school going children (42.4%), more so in males (61.4%) compared to the females (38.6%). The infants are mostly confined to their household, while preschool children are exposed to their neighborhood and more prone to environment exposure which can be a possible reason for more occurrence of Dermatoses in this age group.

Most common dermatoses in our study population were infections and infestations (69.4%). This is comparable to various other studies by Khalid A et al (63.2%), Karthikeyan K et al (54.5%), Jain N et al (54.5%), Jawade SA et al (56.4%) and Thakare S et al (46.33%).<sup>1-3,11,18</sup> Bacterial infections were the most common among all the age groups (36.8%) followed by viral (17.4%), parasitic infections (10.2%) and fungal infections (5%) in this study. This finding were also comparable with bacterial infection rate in other study by Patel N et al (39.1%) and also to the study by Thakare S et al (33.1%).<sup>2,10</sup> The high incidence of infections and infestations in our study could possibly be due to large rural population attending our hospital belonging to low socio economic strata.

Pyoderma was the most common bacterial infection (22.2%) observed in the study population which was present equally in both males (53.2%) and females (46.8%). This was also confirmed by other study by Neela Patel et al showing presence of pyoderma in 53.85% patients.<sup>10</sup> Varicella was the commonest viral infection observed (14.4%) in this study which was similar to the study by Saurabh Sharma et al.<sup>12</sup>

Dermatitis was present 30.6% of the study population in this study. Eczema and urticaria were the commonest dermatitis. This is comparable to the study by Jitendra Singh Bist et al (35.8%).<sup>8</sup> In the studies by Saurabh Sharma et al, dermatitis was present in 27.3% patients

and in the study by Jawade S et al, it was 20.6%.<sup>11,19</sup> Diaper dermatitis was the commonest dermatitis in infants (20.9%). Eczema and urticaria were the commonest dermatitis in pre- school and school going children. This is probably because of increased exposure to external environment (Table 3).

There is a wide variation in the presentation of Dermatoses in various studies. The variation among infective dermatoses can possibly be attributed to the region of study, prevalent environmental factors, type of population studied, and hygiene and nutritional status. The prevalence of certain dermatoses may be influenced by seasonal and climatic changes like atopic dermatitis and seborrhoeic dermatitis are more common predominantly in winters while papular urticaria is seen more frequently in rainy season. Such type of seasonal variation could not be studied during the limited period of our study.

Though this study has highlighted the common patterns of dermatoses in pediatric age group, due to limited study duration, seasonal variation in the pattern of dermatoses could not be studied. This study provides a preliminary baseline data for future epidemiological and clinical research. It might also help to assess the changing trends of pediatric dermatoses. Such studies covering larger population and long duration are required to understand the pattern, variations and influencing factors for pediatric Dermatoses.

## CONCLUSION

Dermatoses in children are thus a wide spread problem which are responsible for significant morbidity in children. The high incidence of infections and infestations are possibly due to poverty, overcrowding, undernutrition, poor hygiene and lack of health education. Skin of the young children is more prone to develop skin disease. Paediatric dermatoses require a separate view in diagnosis and treatment as the clinical presentations differs from adult dermatoses. The incidence of skin infections can be reduced by increasing public awareness regarding sanitation, personal hygiene and nutrition of children.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

## REFERENCES

1. Karthikeyan K, Thappa DM, Jeevankumar B. Pattern of Pediatric dermatoses in referral centre in South India. *Indian Pediatr.* 2004;41(4):373-7.
2. Thakare S, Singh A, Madnani A, Lakhar B. Scenario of pediatric dermatoses in rural population of central

- India. *Global Journal of Dermatology and Venereology.* 2013;1(1):7-10.
3. Jain N, Khandpur S. Pediatric dermatoses in India. *Indian J Dermatol Venereol Leprol.* 2010;76:451-4.
4. Thappa DM. Common skin problems in children. *Indian J Pediatr.* 2002;69(8):701-6.
5. Sardana K, Mahajan S, Sarkar R, Mendiratta V, Bhushan P, Koranne RV, et al. The spectrum of skin diseases among Indian children. *Pediatr Dermatol.* 2009;26(1):6-13.
6. Elfaituri SS. Pediatric dermatoses in Benghazi, Libya. *Indian J Paediatr Dermatol.* 2015;16:64-71
7. Burton JL. The logic of dermatological diagnosis. *Dowling oration 1980. Clin Exp Dermatol.* 1981;6(1):1-21.
8. Bist JS, Rana SK, Kumari N, Singh R, Mehta AK. Prevalence of skin diseases among infants in a tertiary medical facility in Uttarakhand. *Int J Res Med Sci.* 2015;3(5):1172-6.
9. Sayal SK, Bal AS, Gupta CM. Pattern of skin diseases in pediatric age groups and adolescents. *Indian J Dermatol Venereol Leprol.* 1998;64(3):117-9.
10. Patel N, Barot J. Pediatric dermatoses encountered in the outpatient department of tertiary care centre. *International Journal of Science and Research (IJSR).* 2015;4(3):178-81.
11. Jawade SA, Chugh VS, Gohil SK, Mistry AS, Umrigar DD. A clinico-etiological study of dermatoses in pediatric age group in tertiary health care center in South Gujarat region. *Indian J Dermatol.* 2015;60(6):635.
12. Sharma NK, Garg BK, Goel M. Pattern of skin diseases in urban school children. *Indian J Dermatol Venereol Leprol.* 1986;52:330-1.
13. Chen GY, Cheng YW, Wang CY, Hsu TJ, Hsu MM, Yang PT, et al. Prevalence of skin diseases among schoolchildren in Magong, Penghu, Taiwan: a community-based clinical survey. *J Formos Med Assoc.* 2008;107(1):21-9.
14. Kingman S. Growing awareness of skin diseases. *Bull WHO.* 2005;83:881-8.
15. WHO. ICD 10: International statistical classification of diseases and related health problems, 10th revision. 2nd edition. Geneva: World Health Organization; 2004.
16. Kandhari S. Ecology of skin diseases in India. In: Valia RG, Valia VR, editors. *IADVL Textbook of Dermatology.* 3rd ed. Mumbai India: Bhalani Publishing House; 2008:1-6.
17. Hayden GF. Skin diseases encountered in a pediatric clinic. *Am J Dis Child.* 1985;139:36-8.
18. Khalid A, Mehmood T. Spectrum of pediatric dermatoses and seasonal variation. *J Islamic Intern Med Col.* 2013;8(3):78-82.
19. Sharma S, Bassi R, Sodhi MK. Epidemiology of dermatoses in children and adolescents in Punjab, India. *J Pak Association Dermatol.* 2012;22(3):224-9.

**Cite this article as:** Geet Gunjana, Upadhyay N. A study of dermatoses in patients attending Pediatric OPD in a tertiary care hospital of Gandhinagar, Gujarat, India. *Int J Contemp Pediatr* 2017;4:557-60.