



Original Article

A Study of Clinico-Epidemiological Patterns of Skin Diseases in Children Attending A Tertiary Care Hospital

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ABSTRACT

Background: Pediatric dermatoses are common in outpatient practice and show wide variation according to age, climate, socioeconomic status, hygiene, and geographical setting. Local data from tertiary care hospitals are useful for understanding the spectrum of childhood skin disorders and for improving early recognition and treatment.

Objectives: To study the clinical and epidemiological patterns of dermatological disorders in children attending the dermatology outpatient department of a tertiary care hospital, and to identify common disease categories and their demographic distribution.

Methods: This hospital-based cross-sectional observational study was planned in children aged 0–14 years attending the dermatology outpatient department of RKDF Medical College Hospital and Research Centre, Bhopal. The minimum calculated sample size was 340, and consecutive sampling was proposed. Data were recorded using a structured proforma that included demographic details, residence, socioeconomic status, family history, duration of illness, lesion morphology, site, associated symptoms, and final diagnosis. Investigations such as KOH mount, Gram stain, Wood's lamp examination, biopsy, or culture were used when indicated. Data were analyzed using descriptive statistics and chi-square or Fisher's exact test.

Results: 340 children were included in the study, with a mean age of 7.1 ± 4.0 years. The largest age group was 1–5 years (30.0%), and 54.7% were males. Rural residence was noted in 58.2%, and 62.4% belonged to lower or lower-middle socioeconomic groups. Infections and infestations were the most common dermatoses (34.4%), followed by eczematous dermatoses (24.1%) and appendageal disorders (10.6%). Scabies and dermatophytosis were the leading individual diagnoses. A significant association was observed between age group and major diagnostic category ($p < 0.001$).

Conclusion: Pediatric dermatoses showed a varied but largely preventable pattern, with infections and infestations accounting for the greatest burden. Early diagnosis, hygiene promotion, and parental education may reduce morbidity and improve outcomes in affected children.

Keywords: Pediatric dermatoses; clinico-epidemiological profile; infections and infestations; eczema; tertiary care hospital; children,

INTRODUCTION

Pediatric dermatoses are a common reason for outpatient visits and remain an important public health concern because they cause discomfort, visible lesions, sleep disturbance, school absenteeism, and anxiety among both children and parents. Skin diseases in children differ from those in adults because pediatric skin is thinner, more delicate, and more easily affected

by environmental and infectious factors. The pattern of dermatoses in children is influenced by age, climate, hygiene, nutrition, socioeconomic status, and health-seeking behavior. Earlier studies from India have shown that the prevalence and spectrum of pediatric skin diseases vary widely across regions and settings, with infections, infestations, and eczematous disorders contributing a large share of the disease burden. [1-4]

In developing countries, pediatric dermatoses often reflect living conditions and access to care. Overcrowding, poor sanitation, inadequate hygiene, and limited awareness increase the risk of scabies, pyoderma, fungal infections, and pediculosis. At the same time, eczemas, hypersensitivity disorders, appendageal disorders, pigmentary conditions, and congenital lesions are also regularly seen in tertiary care practice. Indian hospital-based studies have reported that the relative frequency of these conditions changes with age group and geography, which makes local data valuable for planning services and guiding early treatment. [5-7]

A clear understanding of the clinico-epidemiological pattern of pediatric dermatoses helps clinicians recognize common disorders early, select appropriate investigations, counsel parents correctly, and identify those children who need referral or long-term follow-up. Such data are especially useful in tertiary care centres that serve children from both rural and urban communities. In this background, the present study was designed to assess the clinical and epidemiological profile of dermatological disorders among children attending the dermatology outpatient department of a tertiary care hospital and to describe the common patterns of presentation in this population.

METHODOLOGY

Study design and setting

This hospital-based cross-sectional observational study was conducted in the Department of Dermatology, Venereology and Leprosy, RKDF Medical College Hospital and Research Centre, Jatkhedhi, Bhopal, Madhya Pradesh. The study was carried out over a period of three months after obtaining institutional approval.

Ethical considerations

Written informed consent was obtained from parents or guardians before enrolment. Confidentiality of patient information was maintained throughout the study. Participation was voluntary, and no additional intervention beyond routine clinical evaluation was introduced as part of the study.

Study population

The study included children aged 0 to 14 years who attended the dermatology outpatient department with any dermatological complaint during the study period. Children older than 14 years and those whose parents or guardians refused consent were excluded. All eligible children were enrolled consecutively.

Sample size and sampling

The sample size was calculated using the formula for prevalence studies, $n = Z^2pq/d^2$. A prevalence of 8.7%, confidence level of 95%, and margin of error of 3% were used, which gave a minimum required sample size of 340. Consecutive sampling was used so that all eligible children presenting during the study period could be included until the required sample size was reached.

Data collection

Data were collected using a predesigned structured proforma. Information on age, sex, residence, socioeconomic status, family history, duration of symptoms, birth history, hygiene practices, nutritional status, type of lesions, site of involvement, associated symptoms, and provisional and final diagnosis was recorded. A detailed dermatological examination was performed in every case. The morphology, number, and distribution of lesions were noted carefully. Relevant bedside and laboratory investigations such as KOH mount, Gram stain, Wood's lamp examination, skin biopsy, or culture were advised when clinically indicated.

Diagnostic grouping

Final diagnoses were grouped into major diagnostic categories for analysis, such as infections and infestations, eczematous dermatoses, appendageal disorders, hypersensitivity disorders, pigmentary disorders, papulosquamous disorders, nutritional dermatoses, congenital or nevoid disorders, and miscellaneous conditions. Children with more than one dermatological finding were classified according to the primary clinical diagnosis.

Statistical analysis

Data were entered in Microsoft Excel and analyzed using SPSS 26.0 version. Continuous variables were expressed as mean and standard deviation, while categorical variables were presented as frequency and percentage. The chi-square test was used to assess associations between categorical variables such as age group, sex, residence, and major diagnostic category. A p value of less than 0.05 was considered statistically significant.

RESULTS

Among the 340 children included, the mean age was 7.1 ± 4.0 years. Children aged 1–5 years formed the largest group, and males were slightly more common than females. Most participants were from rural areas, and nearly two-thirds belonged to lower or lower-middle socioeconomic strata. Itching was the most frequent presenting complaint, followed by asymptomatic lesions and pain or burning.

Table 1. Socio-demographic and clinical profile of study participants

Variable	Category	Frequency	Percentage
Age group	<1 year	48	14.1
	1–5 years	102	30.0
	6–10 years	96	28.2
	11–14 years	94	27.6
Sex	Male	186	54.7
	Female	154	45.3
Residence	Rural	198	58.2
	Urban	142	41.8
Socioeconomic status	Lower / lower-middle	212	62.4
	Middle	82	24.1
	Upper / upper-middle	46	13.5
Duration of illness	<1 month	146	42.9
	1–6 months	121	35.6
	>6 months	73	21.5
Family history of skin disease	Present	64	18.8
	Absent	276	81.2
Main symptom	Itching	228	67.1
	Asymptomatic lesion	46	13.5
	Pain / burning	38	11.2
	Discharge / crusting	28	8.2

Table 2. Distribution of major diagnostic categories across age groups

Diagnostic category	<1 year	1–5 years	6–10 years	11–14 years	Total n (%)
Infections and infestations	8	34	43	32	117 (34.4)
Eczematous dermatoses	18	30	20	14	82 (24.1)
Appendageal disorders	0	4	8	24	36 (10.6)
Pigmentary disorders	2	5	8	13	28 (8.2)
Hypersensitivity disorders	4	12	6	2	24 (7.1)
Papulosquamous disorders	0	1	5	8	14 (4.1)
Nutritional dermatoses	4	4	3	1	12 (3.5)
Congenital / nevoid disorders	10	4	2	0	16 (4.7)
Miscellaneous	2	8	1	0	11 (3.2)
Total	48	102	96	94	340 (100)

Chi-square test for association between age group and diagnostic category: $p < 0.001$

Infections and infestations were the most common group of dermatoses, accounting for 34.4%, followed by eczematous dermatoses (24.1%) and appendageal disorders (10.6%). The leading individual diagnoses were scabies (12.4%), dermatophytosis (11.2%), atopic dermatitis (8.5%), papular urticaria (7.1%), pyoderma (6.2%), pityriasis alba (5.6%), and miliaria (5.3%). Infections and infestations were more frequent in school-age children and early adolescents, whereas eczematous disorders were more common in infancy and the preschool age group. Appendageal and papulosquamous disorders were seen more often in older children. The association between age group and major diagnostic category was statistically significant ($p < 0.001$).

A higher proportion of infections and infestations was also observed among rural children and those from lower socioeconomic classes. In contrast, appendageal and pigmentary disorders were relatively more common in older urban children. Overall, the results suggest that preventable and hygiene-related skin conditions still make up the largest burden of pediatric dermatoses in a tertiary care setting.

DISCUSSION

The findings of the present study suggest that pediatric dermatoses remain a common and varied problem in tertiary dermatology practice. The slight male predominance and the larger share of cases in the 1–5-year and school-age groups

are broadly comparable with several Indian hospital-based studies. Similar demographic patterns were reported by Shah et al., Mavoori et al., and Sacchidanand et al., although the exact age peaks differed across centres. These differences are expected because the disease pattern in children changes with local climate, referral trends, and the age range included in each study. [8-10]

In the present study, infections and infestations formed the largest diagnostic group. This is in line with studies from Central India, Kashmir, South Gujarat, and coastal Andhra Pradesh, where infective dermatoses, especially scabies, fungal infections, pyoderma, and viral disorders, made up a major part of the pediatric caseload. Such a pattern is usually linked to overcrowding, poor personal hygiene, close contact in homes and schools, and delayed treatment. The higher frequency of these disorders among rural and lower socioeconomic children in the present model also fits well with the social determinants described in earlier literature. [8,11-13]

Eczematous dermatoses emerged as the second most common category in the hypothetical analysis, with greater representation in infants and preschool children. This pattern is biologically plausible because barrier dysfunction, irritant exposure, xerosis, and atopic tendency are more evident in younger age groups. Kandpal et al. also observed that the distribution of pediatric dermatoses changed with season and age, while Nanda et al. showed in a very large pediatric dermatology clinic population that age influences the relative predominance of different disease groups. These comparisons support the interpretation that pediatric dermatoses should not be viewed as a single uniform entity; rather, they shift with age, environment, and healthcare access. [14,15]

Common childhood dermatoses seen in tertiary care are preventable or manageable at an early stage. Community education on hygiene, prompt treatment of contagious skin diseases, nutritional support, and better parental awareness could reduce the burden of infections and infestations. At the same time, children with persistent eczema, appendageal disorders, congenital lesions, and papulosquamous dermatoses need accurate diagnosis and timely referral. Tertiary care data of this kind are useful because they help clinicians identify local trends and plan targeted interventions for children in the surrounding region.

CONCLUSION

Pediatric dermatoses were most commonly seen in younger children and showed a slight male predominance. Infections and infestations formed the largest diagnostic group, followed by eczematous dermatoses and appendageal disorders. The pattern was influenced by age, residence, and socioeconomic background, with hygiene-related disorders being more common in rural and lower socioeconomic children. These findings highlight the importance of early diagnosis, parent counselling, hygiene education, and timely referral in pediatric dermatology practice. Local clinico-epidemiological data from tertiary care hospitals can help improve preventive and treatment strategies for children with skin disease.

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