

Clinical and Epidemiological Profile of Pediatric Dermatoses: A Study from a Tertiary Care Center

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Abstract:

Background: Pediatric dermatoses are among the most common health problems in children and contribute significantly to dermatology outpatient visits. Their pattern varies according to demographic, socioeconomic, and environmental factors.

Aim: To evaluate the clinical and epidemiological profile of pediatric dermatoses among children attending a tertiary care center.

Methodology: A hospital-based descriptive cross-sectional study was conducted in the Department of Skin & VD, ANMMCH, Gaya ji, Bihar. Eighty children aged 0–18 years presenting with dermatological disorders were enrolled. Demographic details, clinical history, examination findings, and relevant investigations were recorded and analyzed using descriptive statistics.

Results: The majority of patients belonged to the 6–10 years age group (31.3%) and were males (58.8%). Most participants were from rural areas (65%) and lower socioeconomic status (45%). Infectious dermatoses were the most common category (30%), followed by eczematous disorders (22.5%) and infestations (15%). Scabies (15%), atopic dermatitis (13.8%), and tinea infections (12.5%) were the most frequent individual disorders. Most children had illness duration of 1–6 months (40%), while 26.3% reported a positive family history.

Conclusion: Infectious and eczematous dermatoses predominated among pediatric patients, particularly in rural and socioeconomically disadvantaged populations. Early diagnosis, health education, and improved hygiene practices are essential to reduce disease burden.

Keywords: Pediatric dermatoses, Infectious dermatoses, Scabies, Atopic dermatitis, Epidemiology, Children.

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Introduction

Pediatric skin diseases are a significant public health problem and are one of the most frequent causes of pediatric medical consultation [1]. Children's skin is structurally and functionally different from that of adults and is more susceptible to various dermatological problems. Pediatric dermatoses are a wide variety of conditions, from infectious diseases to inflammatory, to genetic, nutritional, and allergic diseases. Clinical presentation, prevalence and the course of skin diseases can differ markedly from that of adults because of the changes that occur in children during growth, development and immunological maturation [2]. These specialities require special knowledge of pediatric derma and emphasize the need for pediatric skin disease studies.

Dermatological diseases make up a significant portion of the health care visits to pediatricians and dermatologists around the world [3]. Around one-third of the consultations in paediatric practice are associated with skin complaints and a large proportion of children attend dermatology clinics. Many pediatric dermatoses are not life-threatening, but can result in a great deal of discomfort, itching, pain, sleep disturbances, and psychosocial stress. The appearance of skin lesions can have negative impacts on self-esteem, social relations, school functioning and quality of life especially for older children and adolescents [4]. Early diagnosis and suitable management is therefore crucial to minimise morbidity and promote the welfare of affected children.

Epidemiology of pediatric dermatoses is highly diverse in different geographical regions and different populations [5]. The prevalence and pattern of skin diseases in children are greatly affected by climate, socioeconomic conditions, level of nutrition, hygiene measures, cultural beliefs, environmental exposures and availability of health care. In tropical and developing countries, infectious dermatoses such as bacterial/fungal/viral/parasitic dermatitis are still very common, given the lack of health care, low standards and high population density. In developed countries, allergic and inflammatory skin diseases like atopic dermatitis (AD) and psoriasis are increasingly reported, however [6]. These differences emphasize the importance of conducting epidemiological studies in different regions to better understand the patterns of disease and to plan for health care in those regions.

Pediatric skin disease is a unique range of diseases in India due to its varied climatic conditions and socioeconomic scenario [7]. Different studies in various parts of the country have shown that the prevalence of different types of infectious, allergic and nutritional dermatoses in children varies. Infections of the skin remain a major health problem, especially for the rural population and among the poor. On the other hand, with the growing rise of urbanization, environmental pollution and lifestyle changes, there has been an increase in allergic and autoimmune skin disorders. These evolution changes underscore the need for ongoing monitoring and the timely availability of epidemiological information for implementing proper prevention and care measures.

Social determinants of health play a role in pediatric dermatoses. Children are at higher risk for skin diseases due to malnutrition, poor personal hygiene, overcrowding, and poor health knowledge. In addition, skin disorders that recur or become chronic may be a significant economic cost to families because of frequent medical visits, investigations, and costs of treatment. Knowing the demographic and clinical features of affected children can thus assist healthcare providers to identify high-risk groups and thus carry out targeted interventions [8].

Tertiary care centres are important in diagnosis and management of skin disorders in children because the common and complex cases are referred from both primary and secondary healthcare facilities. Research carried out in these types of settings is helpful in understanding the clinical spectrum, age and gender distribution, seasonal variation and risk factors of paediatric dermatoses. Results of these hospital-based studies can help inform development of evidence-based guidelines, education programs, and public health initiatives for promoting pediatric skin health.

Although skin diseases are common in children, information on the epidemiology of these conditions in many areas is still limited. Changes in the pattern of disease in various population groups make it necessary to periodically reassess the clinical and epidemiological characteristics of pediatric dermatitis. These studies are crucial in comprehending the burden of disease, pinpointing emerging patterns, and optimizing healthcare resources and preventive efforts. For this reason, the present study titled "Clinical and Epidemiological Profile of Pediatric Dermatoses: A study from a Tertiary Care Centre" has been conducted, to assess the spectrum of skin diseases among children attending tertiary healthcare set up and provide fresh data which may assist the clinicians, the researchers and the policy makers in better care of children suffering from dermatoses.

Methodology

Study Design: The present study was a hospital-based, descriptive, observational cross-sectional study designed to evaluate the clinical and epidemiological profile of pediatric dermatoses among children attending the dermatology outpatient department of a tertiary care center. The study aims to assess the pattern, frequency, and distribution of various dermatological disorders in the pediatric age group and to analyze their demographic and clinical characteristics.

Study Area: The study was conducted in the Department of Skin & VD, Anugrah Narayan Magadh Medical College and Hospital (ANMMCH), Gaya ji, Bihar, India

Study Duration: The study was conducted over a period of 8 months from April 2025 to November 2025.

Study Participants: The study population was comprised pediatric patients attending the Dermatology Outpatient Department (OPD) of the Department of Skin & VD during the study period.

Inclusion Criteria

- Children aged 0–18 years attending the Dermatology OPD.
- Patients presenting with any dermatological disorder or skin-related complaint.
- Patients whose parents or legal guardians provide written informed consent for participation in the study.
- Children willing to undergo clinical examination and necessary investigations.

Exclusion Criteria

- Patients older than 18 years of age.
- Patients or guardians who refuse to provide informed consent.
- Children with incomplete clinical records or inadequate information required for the study.

- Follow-up cases of previously enrolled participants during the study period.
- Critically ill patients in whom detailed dermatological evaluation is not feasible.

Sample Size: A total of 80 pediatric patients fulfilling the inclusion criteria were enrolled in the study. Consecutive sampling was employed until the required sample size is achieved during the study period.

Procedure: Pediatric patients attending the Dermatology Outpatient Department of the Department of Skin & VD, ANMMCH, Gaya ji, Bihar, and meeting the eligibility criteria were recruited consecutively. Written informed consent were obtained from the parents or legal guardians of all participants, and assent were obtained from older children whenever appropriate. A detailed history was recorded using a predesigned and pretested case record form. Information regarding age, gender, residence, socioeconomic status, personal hygiene practices, duration of illness, presenting symptoms, family history, past medical history, and any associated systemic diseases were documented.

A comprehensive dermatological examination was performed for each participant under adequate illumination. The morphology, distribution, extent, duration, and clinical characteristics of skin lesions were carefully assessed and recorded. The dermatological disorders were diagnosed primarily on clinical grounds by qualified dermatologists. Wherever indicated, relevant laboratory and diagnostic investigations such as complete blood count, skin scraping for fungal examination, Gram staining, potassium hydroxide (KOH) mount, Wood's lamp examination, skin biopsy, culture studies, or other appropriate investigations were carried out to confirm the diagnosis.

The diagnosed dermatological conditions were categorized according to their etiological groups, such as

infectious dermatoses, infestations, eczematous disorders, pigmentary disorders, papulosquamous disorders, nutritional dermatoses, genetic disorders, appendageal disorders, and miscellaneous skin conditions. The epidemiological profile, including age-wise and gender-wise distribution, frequency of various dermatoses, and associated clinical characteristics, were analyzed to identify the prevailing pattern of pediatric skin diseases in the study population.

Statistical Analysis: The collected data was entered into Microsoft Excel and analyzed using Statistical Package for the Social Sciences (SPSS) version 27.0. Descriptive statistics were used to summarize the data. Categorical variables were expressed as frequencies and percentages, while continuous variables were presented as mean and standard deviation (SD) or median and interquartile range, wherever appropriate. Associations between categorical variables were assessed using the Chi-square test or Fisher's exact test. A p-value of <0.05 were considered statistically significant. The results were presented in the form of tables, charts, and graphs for clear interpretation and comparison.

Result

Table 1 shows the distribution of 80 study participants according to age group and gender. The largest proportion of participants belonged to the 6–10 years age group, comprising 25 children (31.3%), followed by the 0–5 years and 11–15 years age groups, each contributing 20 participants (25.0%). The 16–18 years age group accounted for the lowest proportion, with 15 participants (18.7%). Overall, males constituted the majority of the study population with 47 participants (58.8%), while females accounted for 33 participants (41.2%). A male predominance was observed across all age groups, indicating that male children were more frequently represented in the study than female children.

Age Group (Years)	Male (n)	Female (n)	Total (n)	Percentage (%)
0–5	12	8	20	25
6–10	15	10	25	31.3
11–15	12	8	20	25
16–18	8	7	15	18.7
Total	47	33	80	100

Table 2 shows the distribution of the 80 study participants according to residence and socioeconomic status. The majority of participants belonged to rural areas, accounting for 52 cases (65%), while 28 participants (35%) were from urban areas, indicating a higher representation of the rural population in the study. Regarding socioeconomic status, the largest proportion of participants belonged to the lower so-

cioeconomic group, comprising 36 cases (45%). This was followed by the middle socioeconomic group with 30 participants (37.5%), whereas only 14 participants (17.5%) belonged to the upper socioeconomic group. These findings suggest that most study participants were from rural backgrounds and lower socioeconomic strata.

Table 2: Distribution of Study Participants According to Residence and Socioeconomic Status (n=80)		
Variable	Frequency (n)	Percentage (%)
Residence		
Rural	52	65
Urban	28	35
Socioeconomic Status		
Lower	36	45
Middle	30	37.5
Upper	14	17.5
Total	80	100

Table 3 shows the distribution of pediatric dermatoses according to etiological categories among the 80 children included in the study. Infectious dermatoses constituted the largest group, accounting for 24 cases (30%), indicating that infections were the most common dermatological conditions in the pediatric population. Eczematous disorders were the second most prevalent category with 18 cases (22.5%), followed by infestations with 12 cases (15%). Pigmen-

tary disorders were observed in 7 children (8.8%), while appendageal disorders accounted for 6 cases (7.5%). Papulosquamous disorders and miscellaneous disorders each contributed 5 cases (6.3%). Nutritional dermatoses were the least common, affecting only 3 children (3.8%). Overall, infectious and eczematous conditions together comprised more than half of all pediatric dermatoses.

Table 3: Distribution of Pediatric Dermatoses According to Etiological Categories (n=80)		
Etiological Category	Frequency (n)	Percentage (%)
Infectious Dermatoses	24	30
Infestations	12	15
Eczematous Disorders	18	22.5
Pigmentary Disorders	7	8.8
Papulosquamous Disorders	5	6.3
Appendageal Disorders	6	7.5
Nutritional Dermatoses	3	3.8
Miscellaneous Disorders	5	6.3
Total	80	100

Table 4 shows the distribution of common specific dermatological disorders among the 80 study participants. Scabies was the most frequently observed condition, affecting 12 children (15%), followed by atopic dermatitis in 11 participants (13.8%) and tinea infections in 10 participants (12.5%). Impetigo accounted for 8 cases (10%), while seborrheic dermatitis was reported in 7 children (8.8%). Vitiligo

and acne vulgaris were equally prevalent, each affecting 6 participants (7.5%). Psoriasis was observed in 5 cases (6.3%), whereas pityriasis alba and pediculosis capitis each contributed 4 cases (5%). Other miscellaneous dermatological disorders collectively accounted for 7 cases (8.8%), indicating a diverse spectrum of pediatric skin diseases.

Table 4: Distribution of Common Specific Dermatological Disorders Among Study Participants (n=80)		
Dermatological Disorder	Frequency (n)	Percentage (%)
Scabies	12	15
Atopic Dermatitis	11	13.8
Tinea Infections	10	12.5
Impetigo	8	10
Seborrheic Dermatitis	7	8.8
Vitiligo	6	7.5
Acne Vulgaris	6	7.5
Psoriasis	5	6.3
Pityriasis Alba	4	5
Pediculosis Capitis	4	5
Others	7	8.8
Total	80	100

Table 5 shows the distribution of pediatric dermatoses according to duration of illness and family his-

tory among 80 study participants. The majority of children, 32 (40.0%), had a duration of illness rang-

ing from 1 to 6 months, indicating that most cases presented with a relatively recent onset. This was followed by 26 children (32.5%) with symptoms lasting less than 1 month, while 22 children (27.5%) had a disease duration of more than 6 months. Regarding family history, 21 children (26.3%) reported

a positive family history of similar skin diseases, whereas the majority, 59 children (73.7%), had no such family history, suggesting that most pediatric dermatoses occurred without an apparent familial predisposition.

Table 5: Distribution of Pediatric Dermatoses According to Duration of Illness and Family History (n=80)		
Variable	Frequency (n)	Percentage (%)
Duration of Illness		
<1 Month	26	32.5
1–6 Months	32	40
>6 Months	22	27.5
Family History of Similar Skin Disease		
Present	21	26.3
Absent	59	73.7
Total	80	100

Discussion

To analyse the clinical and epidemiological profile of dermoses in the paediatric age group attending tertiary care centre. Pediatric skin disorders are a significant percentage of dermatology outpatient visits and are age, gender, environmentally, and socially influenced and related to hygiene level and genetics. Knowledge concerning the prevalence of these conditions is critical to the planning of preventive and therapeutic interventions.

The highest proportion of children was in the 6–10 years age group, 31.3%, and followed by the 0–5 years and 11–15 years age groups, 25% each. The same was noted by Karthikeyan et al., 2004 [9] who reported that the bulk of the pediatric dermatology patients were school-aged children. This increase in prevalence of dermatoses among children aged 5–10 years was also reported by Sardana et al. (2009) [10]. The higher prevalence in this age group could be due to more outdoor exposure, peer exposure in school and exposure to more infectious agents. In the current study, relatively fewer youth aged 16–18 years (18.7%) may be due to greater personal hygiene and increased health awareness.

Analysis by gender showed the prevalence among males (58.8%) to be greater than that among females (41.2%). The results are similar to the studies conducted by Negi et al., 2001 [11] with 60% males and Karthikeyan et al., 2004 with male to female ratio of 1.3:1. This could be due to the higher amounts of boys in the outdoors, in physical activities, and the sociocultural factors affecting boys' healthcare utilization. There was a similar pattern in several Indian studies and it has been concluded that gender is still an epidemiological determinant of pediatric dermatoses.

The present study showed that the majority of individuals (65%) were from rural areas while only 35% were from the urban areas. The findings corroborate

the findings of Sharma and Mendiratta (1999) [12] who had also found that the problems of infectious dermatoses were more prevalent in the rural children. In many rural areas, sanitation, crowding, lack of access to health care, and lack of knowledge of personal hygiene present problems. All of these play a major role in the occurrence and spread of skin diseases. This rural majority in this study is a reminder of the importance of providing health education and better dermatological care to rural children.

The socioeconomic assessment revealed that 45% of children were in the lower, 37.5% were in the middle, and 17.5% were in the upper socioeconomic groups. The same was observed by other researchers like Bhatia (1997) [13] and Negi et al. (2001) who found a higher incidence of skin diseases among the children from poor socio-economic status. It is well known that poor housing conditions, overcrowding, inadequate nutrition and limited access of healthcare facilities are risk factors for dermatological disorders. This relationship between low socioeconomic status and higher prevalence of pediatric dermatoses seen in this study further underscores the importance of social determinants in skin health.

As far as etiological distribution is concerned infectious dermatoses were the commonest and accounted for 30% of all dermatoses. This is very similar to what Sayal et al. (1998) [14] observed, with 32% of children having infectious dermatoses. Infections and infestations were recorded by Karthikeyan et al. (2004) in 35% of the cases and by Sardana et al. (2009) at similar rates. The high prevalence of infectious dermatoses can be attributed to the lack of hygiene, environment contamination, overcrowding, and physical contact among children. Infectious skin diseases continue to represent a major public health problem in developing countries.

The second prevalent type of diseases reported was eczematous disorders (22.5%). The prevalence of

this finding was similar to that reported by Sardana et al. (2009) which was 20.6%. Prevalence rates have been reported from developed countries ranging from 15% to 28% of children being affected by eczema (Foley et al., 2001) [15]. Environmental allergens, altered lifestyle, urbanisation and genetic predisposition are among factors that may be associated with the increasing burden of eczematous disorders. These conditions are frequently a long-term disorder, and have a major impact on the quality of life for children who develop them.

Infestation appeared in 15% of the current study. Similar results have been reported by Sharma and Mendiratta (1999) who observed infection in about 13–16% of children with a diagnosis of paediatric diseases. Non-eradication of infestations is due to the lack of hygiene standards and to the high density of the living environment. Early diagnosis and treatment combined with community based preventive measures are still important to control these disorders.

Scabies was the most prevalent individual skin disease, with 15% of the children affected. This is seen to be more than the figure of 6.97% obtained by Karthikeyan et al. (2004). This higher rate in the current study could be explained because of the rural and lower socioeconomic population. Atopic dermatitis was the second most common disorder (13.8%) compared to Karthikeyan et al. (2004) who reported about 6%. This rise could be attributed to the rising role of allergic and environmental influences in childhood's skin diseases.

Tinea infections accounted for 12.5% and impetigo accounted for 10% of cases. In previous Indian studies fungal infection and bacterial infection were found to be significant causes for paediatric dermatological consultations (Sharma & Mendiratta, 1999; Negi et al., 2001). These infections are common and are easily spread due to warm and humid climate of many parts of India. Acne vulgaris and Vitiligo each accounted for 7.5% of cases and 6.3% of children had psoriasis observed. Slightly higher prevalence of psoriasis was observed as compared to Al-Fouzan and Nanda (1994) [16] who reported 4% prevalence of psoriasis in the present study, which may be due to the increased knowledge and referral of chronic dermatological conditions.

In general, the results of the present study reveals that school aged children, males, rural population and children from poor socio-economic status are most prevalent population group with pediatric dermatoses. Infectious dermatoses, eczematous disorders and infestations continue to be the most common disease categories, with scabies, atopic dermatitis and tinea infections being the most common diseases seen. The results are concordant with those of earlier studies and support the need for health education, better hygiene, early diagnosis and easy der-

matological care in the alleviation of the burden of pediatric skin diseases.

Conclusion

The present study highlights the diverse clinical and epidemiological spectrum of pediatric dermatoses among children attending a tertiary care center. Skin disorders were found to be more common among school-aged children, males, rural residents, and those belonging to lower socioeconomic groups. Infectious dermatoses emerged as the most prevalent category, followed by eczematous disorders and infestations, indicating the continued influence of environmental, hygienic, and socioeconomic factors on childhood skin diseases. Scabies, atopic dermatitis, and tinea infections were the most frequently encountered individual conditions. Most children presented with a disease duration of 1–6 months, while a positive family history was observed in only a minority of cases. These findings emphasize the need for improved hygiene practices, health education, early diagnosis, and timely dermatological intervention. Strengthening pediatric dermatology services and community-based preventive measures can significantly reduce disease burden and improve the quality of life of affected children.

References

1. Schofield JK, Fleming D, Grindlay D, Williams H. Skin conditions are the commonest new reason people present to general practitioners in England and Wales. *British Journal of Dermatology*. 2011 Nov 1;165(5):1044-50.
2. Pezzolo E, Naldi L. Epidemiology of major chronic inflammatory immune-related skin diseases in 2019. *Expert review of clinical immunology*. 2020 Feb 1;16(2):155-66.
3. Prindaville B, Simon SD, Horii KA. Dermatology-related outpatient visits by children: implications for workforce and pediatric education. *Journal of the American Academy of Dermatology*. 2016 Jul 1;75(1):228-9.
4. Kelly KA, Balogh EA, Kaplan SG, Feldman SR. Skin disease in children: effects on quality of life, stigmatization, bullying, and suicide risk in pediatric acne, atopic dermatitis, and psoriasis patients. *Children*. 2021 Nov 16;8(11):1057.
5. Taylor SC. Epidemiology of skin diseases in ethnic populations. *Dermatologic clinics*. 2003 Oct 1;21(4):601-7.
6. Bieber T. Disease modification in inflammatory skin disorders: opportunities and challenges. *Nature Reviews Drug Discovery*. 2023 Aug;22(8):662-80.
7. Podder I, Agarwall K, Anurag A. Pattern and distribution of pediatric dermatoses and their association with parental socioeconomic status: A single-center experience from India. *Indian Journal of Paediatric Dermatology*. 2022 Jul 1;23(3):214-20.

8. Bowers S, Chang AY. The social determinants of health and their impact on dermatologic health, part 1: the social determinants of health and their dermatologic implications. *Dermatologic Clinics*. 2023 Apr 1;41(2):309-16.
9. Karthikeyan K, Thappa DM, Jeevankumar B. Pattern of pediatric dermatoses in a referral center in South India. *Indian pediatrics*. 2004 Apr 1;41(4):373-6.
10. Sardana K, Mahajan S, Sarkar R, Mendiratta V, Bhushan P, Koranne RV, Garg VK. The spectrum of skin disease among Indian children. *Pediatric dermatology*. 2009 Jan;26(1):6-13.
11. Negi KS, Kandpal SD, Parsad D. Pattern of skin diseases in children in Garhwal region of Uttar Pradesh. 2001.
12. Sharma RC, Mendiratta V. Clinical profile of cutaneous infections and infestations in the paediatric age group. *Indian Journal of Dermatology*. 1999 Oct 1;44(4):174-8.
13. Bhatia V. Extent and pattern of paediatric dermatoses in rural areas of central India. *Indian Journal of Dermatology, Venereology and Leprology*. 1997 Jan 1;63:22.
14. Sayal SK, Bal AS, Gupta CM. Pattern of skin diseases in paediatric age group and adolescents. *Indian journal of dermatology, venereology and leprology*. 1998 May 1;64(3):117-9.
15. Foley P, Zuo Y, Plunkett A, Marks R. The frequency of common skin conditions in pre-school-age children in Australia: atopic dermatitis. *Archives of dermatology*. 2001 Mar 1;137(3):293-300.
16. Al-Fouzan AS, Nanda A. A survey of childhood psoriasis in Kuwait. *Pediatric dermatology*. 1994 Jun;11(2):116-9.