

Original Article

Clinical Spectrum of Dermatoses among Paediatric Patients in a Tertiary Care Hospital, Mymensingh Bangladesh

DOI: dx.doi.org

Kutub Uddin^{1*}, Sanjida Yesmin²

Received: 19 November 2024
Accepted: 28 November 2024
Published: 15 December 2024

Published by:
Gopalganj Medical College,
Gopalganj, Bangladesh

*Corresponding Author



This article is licensed under a
[Creative Commons Attribution
4.0 International License](https://creativecommons.org/licenses/by/4.0/).

**ABSTRACT**

Introduction: Skin conditions in babies and children may include rashes, hives, warts, acne, bruises, etc. Such conditions may be caused by dermatitis, viral infections, bacterial infections, fungal infections, or other illnesses. Treatments vary depending on the symptoms and can range from anti-itch creams to painkillers to antibiotics. **Objective:** To assess the clinical spectrum of dermatoses among paediatric patients.

Methods & Materials: It was a retrospective descriptive study conducted in children attending the out-patients Department of Dermatology & Venereology, Mymensingh Medical College & Hospital, Mymensingh, Bangladesh from January to December 2022. There were total of 300 patients in this study. Children from day 1 to 14 years were enrolled in the study.

Results: Total 300 patients in this study. The mean age of the patients was 4.18 ± 2.97 years. There were 178 (59.3%) male

patients and 122 (40.7%) female patients. M: F ratio was 1.45:1. Majority of the patients were of preschool age (34%) followed by school aged children, adolescents and infants. Infants constituted 12% of all the patients. According to the descending order of prevalence they were infections (45%), eczema (18%), urticaria (6%), pilosebaceous unit disorders (3.6%). Infection was common in preschoolers and eczema among school children. Bacterial infection constituted 40% of infections. Bacterial infection was most common in preschool children, fungal infection in adolescents and parasitic infection in preschool children. Viral infection was of equal prevalence in preschool, school children and adolescents. Viral infection was of low prevalence in infants. **Conclusion:** Infectious and allergic skin diseases

(The Insight 2024; 7(1): 167-174)

1. Indoor Medical Officer, Department of Dermatology & Venereology, Mymensingh Medical College & Hospital, Mymensingh, Bangladesh
2. MD Student, Department of Pediatrics, Mymensingh Medical College & Hospital, Mymensingh, Bangladesh

were the major skin problems among children.

Keywords: Prevalence, Impetigo, Paediatric Dermatoses

INTRODUCTION

Skin conditions in babies and children may include rashes, hives, warts, acne, bruises, etc. These situations may be caused by dermatitis, viral infections, bacterial infections, fungal infections, or other diseases. Treatment differs depending on the symptoms, ranging from anti-itch creams to painkillers to antibiotics. Skin diseases are a major health problem for the pediatric age group and are associated with significant morbidity^[1]. These are common worldwide as children's skin is more susceptible to diseases^[2]. Skin diseases account for 30% of all outpatient visits and 30% of all dermatology consultations among children^[3,4]. A WHO prevalence survey study among children found the prevalence of skin diseases to be 21%-87%^[5]. Infectious skin diseases such as superficial fungal infections (tinea capitis and tinea versicolor) and scabies are commonly experiential. Commonly observed non-infectious skin diseases were papular urticaria, gonioderma, melanocytic nevi, trunk and therapeutic moles. Atopic eczema and viral warts were almost absent^[6,7]. Skin problems are relatively common in children. However, we have few epidemiological or hospital-based studies. Therefore, the exact burden of skin diseases on the pediatric population in our region is unknown. Assessment of skin diseases is an important part of primary health care^[8]. The skin is often a gateway to underlying systemic diseases and a marker of genetic syndromes^[9].

Age during childhood can be a marker of environmental risk^[10]. We can assess the health, hygiene and personal cleanliness of the population of our society by examining the prevalence of certain diseases among children in our community^[9]. Pediatric skin diseases must be differentiated from adult skin diseases, since there are important differences in clinical symptoms, treatment and prognosis^[11]. Changes in environmental factors (pollution, urbanization, etc.) are associated with various skin diseases (eczema, etc.). Therefore, it is likely that the frequency of pediatric skin diseases has changed in recent years. In most cases, children are treated by pediatricians rather than dermatologists. The results of this study will be beneficial for both pediatricians and dermatologists, as they will reveal the most common pediatric dermatitis and help to take treatment measures for patients.

METHODS & MATERIALS

It was a retrospective descriptive study conducted in children attending the outpatients Department of Dermatology & Venereology, Mymensingh Medical College & Hospital, Mymensingh Bangladesh from January to December 2022. Total of 300 patients was children from day 1 to 14 years were enrolled in the study. The patients were grouped into four categories: infants (day 1–1 year old); preschool children (2–5 years old); school children (6–10 years old); and adolescents (11–14 years old).

Children suffering from serious life-threatening illnesses such as chronic liver disease or renal failure, or taking medication (steroids, antituberculous drugs, anticancer drugs) were excluded from the study. After informed consent from the children's parents, a detailed medical history and physical examination were performed for the presence of infections, parasites, and skin diseases such as eczema and sweat gland disorders. All information was collected on a pre-designed form. Statistical analysis was done using SPSS software version 21 for windows.

RESULTS

Total 300 patients in this study. The mean age of the study patients was 4.18 ± 2.97 years. There were 178 (59.3%) male patients and 122 (40.7%) female patients. M: F ratio was 1.45:1 (Table I).

Table - I: Demographic Data of Study Population (n=300)

Characteristic	n	%
Male	178	59.3
Female	122	40.7
Age		
≤1-5	120	40.0
6-10	100	33.3
11-12	80	26.7
Mean	4.18 ± 2.97	

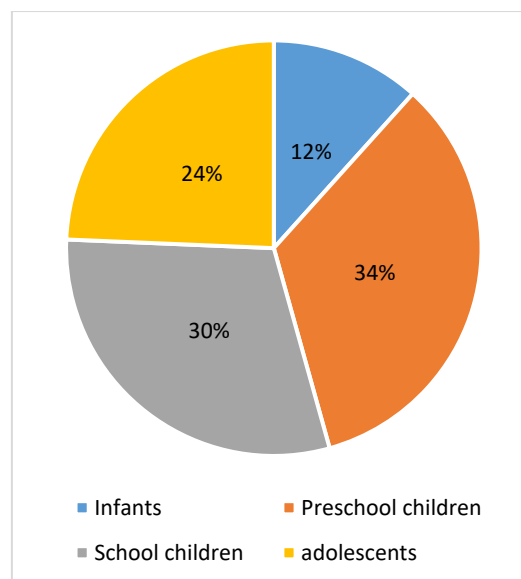


Figure - 1: Distribution of Dermatoses Among Paediatric Patients

Majority of the patients were of preschool age (34%) followed by school aged children, adolescents and infants. Infants constituted 12% of all the patients (Figure 1).

Urticaria constituted 10% of all cases. Papulosquamous disorders were mainly observed in the adolescents and school children. They constituted of psoriasis, lichen planus and pityriasis rosea. Sweat gland disorder mainly constituted of miliaria and hyperhidrosis. Miliaria was observed mostly in infants. Deficiency disorders included cases of acrodermatitis enteropathica and riboflavin deficiency. Drug reaction was noted high in adolescents, low in preschool and school aged children. There was no case of drug reaction in infants (Table II).

Table – II: Frequency of Paediatric Dermatoses

Diagnosis	Frequency	Percent
Infections	145	48.3
Eczema	55	18.3
Urticaria	28	9.3
Pilosebaceous unit disorders	15	5.0
Pigmentary disorders	11	3.6
Papulosquamous disorders	08	2.3
Sweat gland disorders	07	2.3
Keratinization disorders	06	2.0
Naevoid conditions	05	1.6
Deficiency disorders	04	1.3
Photodermatoses	06	2.0
Drug reaction	03	1.0
Others	07	2.3
Total	300	100

Table – III: Dermatoses in Different Age Groups

Diagnosis	Infants	Preschool children	School children	Adolescents
Infections	16	64	40	25
Eczema	7	20	16	12
Keratinisation disorders	1	1	2	5
Drug reaction	0	1	1	4
Naevoid conditions	2	2	2	2

Papulosquamous disorders	0	1	4	4
Photodermatoses	1	0	1	2
Pigmentary disorders	1	2	4	4
Pilosebaceous unit disorders	1	2	2	6
Sweat gland disorders	2	2	4	1
Urticaria	2	5	10	3
Vitamin deficiency	2	0	1	2
Others	0	2	3	3
Total	35	102	90	73

According to the descending order of prevalence they were infections (45%), eczema (18%), urticaria (6%), pilosebaceous unit disorders (3.6%), pigmentary disorders (3.6%), papulosquamous disorders (3%), sweat gland disorders (3%), keratinization disorders (3%), naevoid skin conditions (2.6%), deficiency disorders (1.6%), photodermatoses (1.3%), drug reactions (2%), and others (2.6%). Infection was common in preschoolers and eczema among school children (**Table III**).

The most common skin disease was infection, accounting for 47.8%. Among infections, bacterial infections were the most common, followed by fungal infections, viral infections, and parasitic infections. Forty percent of infections were bacterial. Bacterial infections were most common in preschool children, fungal infections in adolescents, and parasitic infections in preschool children. Viral infections were equally common among preschool children, school children, and adolescents. Viral

infection was of low prevalence in infants (**Table IV**).

Table – IV: Types of Infections in Different Age Groups

Infections	Infants	Preschool Children	School Children	Adolescents	Total
Bacterial	7	31	18	4	60
Fungal	4	7	12	16	38
Parasitic	4	7	4	4	19
Viral	1	9	9	9	28

Among the bacterial infection, impetigo constituted most of the cases followed by furunculosis, both of them most common in the preschool children (**Table V**).

Table – V: Types of Bacterial Infections in Different Age Groups. (n=66)

Bacterial	Infants	Preschool Children	School Diseases	Adolescents
Impetigo	6	30	10	2
Furunculosis	0	3	2	1
Ecthyma	1	1	2	1
Abscess	0	2	1	0
Folliculitis	1	1	0	1
Cellulitis	0	0	1	0
Total	8	37	16	5

There was only one case of leprosy. The most common type of eczema was seborrheic eczema followed by atopic eczema, pityriasis alba, allergic contact eczema and irritant contact eczema. Seborrheic eczema and atopic eczema predominated in the preschool children, pityriasis alba in the adolescents and contact eczema in the school children. There were no cases of contact eczema in infants. Acne constituted 4.2% of all the disorders, most prevalent in the adolescent age group. Among the dermatoses in adolescents, acne constituted of 11%. It was 1.5-fold higher in females (**Table VI**).

Table – VI: Types of Eczema in Different Age Groups. (n=55)

Types of eczema	Infants	Preschool Children	School Children	Adolescent	Total n (%)
Seborrheic eczema	2	4	3	1	10(18.2)
Atopic	3	4	1	2	10(18.2)
Pityriasis alba	1	1	2	4	8(14.5)
Allergic contact	0	1	5	2	8(14.5)
Irritant contact	0	1	4	1	6(10.9)
Infective	1	2	2	0	5(9.1)
Pompholyx	0	1	1	1	3(5.4)
Others	0	1	1	3	5(9.1)
Total	7	15	19	14	55

DISCUSSION

Assessment of skin disease is an important part of basic medical care for everyone, including children^[12]. The health, hygiene, and personal cleanliness of a community can be assessed by the prevalence of certain skin diseases among children in that area^[13]. Many different primary skin diseases occur in childhood, and the skin is often a marker of underlying systemic diseases and genetic syndromes^[14]. Patterns of skin disease vary from country to country, with pyoderma and malnutrition being more common in developing countries, whereas eczema is more common in developed countries. Total 300 patients were included in the study. The mean age of the patients was 4.18 ± 2.97 years. There were 178 (59.3%) male patients and 122 (40.7%) female patients. M: F ratio was 1.45:1. The majority of the patients (40%) were of age group <1-5 years followed by age group 5-8 years (33.3%). This high frequency of patients with dermatoses in age group 1-5 years has also been noticed by *Thakare et al.*^[15] who observed that 54.4% patient were of age group 1-4 years. However, in a large trial done by *Balai et al.*^[16] 46,321 patients were examined and only 2.16% patients were children up to five years of age. So, there is a variation of age groups in different studies. There was a slight male dominance in our study i.e. 59.3% male patients. In the study by *Thakare et al.*^[15] 57.2% were males and 41.7% were females. *Javed et al.*^[17] also noted male dominance, 58.2% males and 41.8% females. So male dominance is observed in these studies. Dermatological problems constitute at least 30% of all outpatient visits to a

paediatrician and 30% of all visits to a dermatologist involve children^[18,19]. A community survey conducted in south London in the U.K. identified skin disease that warranted medical treatment in 22.6% of people^[20]. A school-based survey of skin disease in Romania found a very similar rate of skin disease of 22.8%^[21]. The pattern of skin diseases in children is greatly influenced by climate, external environment, diet and socio-economic status^[20]. Similar to other authors, infectious diseases were the most common skin disease in half of our children, followed by eczema and dermatitis^[22,23]. In our study, bacterial infections were the most common, followed by fungal, viral and parasitic infections. While bacterial infections preceded other infections in India and Egypt, parasitic infections, mainly scabies, predominated in Pakistan, and viral infections in Kuwait, Turkey and Switzerland^[24,25]. In many developing countries, where malnutrition, overpopulation and poor sanitation are prevalent, infectious diseases and ectoparasitic skin diseases such as scabies and pediculosis are widespread^[26]. Several studies conducted in Ethiopia, Kuwait and Switzerland reported a predominance of allergic skin diseases over infectious diseases, reflecting efficient control of infectious skin diseases^[27,28]. Eczema, including atopic dermatitis, is more common in developed countries and is influenced by socioeconomic and environmental factors such as excessive hygiene, carpets, and central heating^[29]. The prevalence of eczema was 21.5%. In another study, the prevalence of eczema/dermatitis was 6.5%^[17].

Population studies conducted in Western countries have reported prevalence rates ranging from 11.4 to 22.3%^[10]. The most common type of eczema identified in our study was seborrheic eczema, followed by atopic eczema. Other studies have reported that atopic eczema is the most common type of eczema in children^[30]. Acne accounted for 4.2% of all diseases and was most common in the adolescent age group. Acne is the third most common disease in adolescents after infections and is more common after the onset of puberty due to the effects of androgens on the sebaceous glands. In previous studies, acne was common in 25% of adolescents^[30]. The higher prevalence of acne in female patients may be due to increased concerns about cosmetic issues among patients and their parents. Diseases with very low prevalence are grouped together as "other." These include cases of leukocytoclastic vasculitis, bullous diseases, pityriasis lichenoides, lipomas, connective tissue diseases, and urticaria pigmentosa. The prevalence of certain skin diseases may be influenced by seasonal and climatic changes. This was evident in our study, where atopic dermatitis and seborrheic dermatitis were mainly seen in winter, whereas papular urticaria was more prevalent in the rainy season.

CONCLUSION

This study was conducted to assess the burden of skin diseases in children. Skin diseases were found to vary across age groups. To diagnose dermatitis, a doctor will usually examine the skin and discuss your symptoms and medical history. They may need to remove a small piece

of skin for laboratory testing. This helps to rule out other diseases. Infectious diseases and allergic diseases are the most common skin problems in children. Strategies to improve socio-economic status and health education may be needed to reduce the prevalence of these infectious skin diseases.

Funding

This research was funded by the authors themselves.

Conflict of Interest

The authors declare no conflict of interest.

REFERENCES

1. Javed M, Jairamani C. *Pediatric dermatology: An audit at Hamdard University Hospital, Karachi. J Pak Assoc Dermatol. 2006; 16:93-6.* 5.
2. Jain N, Khandpur S. *Pediatric dermatoses in India. Indian J Dermatol Venereol Leprol. 2010; 76:451-4.* 6.
3. Sharma S, Bassi R, Sodhi MK. *Epidemiology of dermatoses in children and adolescents in Punjab, India. J Pak Assoc Dermatol. 2012; 22:224-30.*
4. Ferreira FR, Nascimento LF, Cirvidiu DC. *Prevalence of pediatric dermatoses in a university hospital in southeastern Brazil. An Bras Dermatol. 2011; 86:477-82.*
5. Sardana K, Mahajan S, Sarkar R, Mendiratta V, Bhushan P, Konanne RV, et al. *The spectrum of skin disease among Indian children. Pediatr Dermatol. 2009; 26:6-13.*
6. Bisht JS, Rana SK, Kumari N, Aggarwal B, Mehta A, Singh R. *Pattern of dermatoses in preschool children in a teaching hospital in Uttarakhand, India. Indian J Paediatr Dermatol. 2015; 16:198-202.*
7. Negi KS, Kandpal SD, Parsad D. *Pattern of skin diseases in children in Garhwal region of Uttar Pradesh. Indian Pediatr. 2001; 38:77-80.*
8. Sharma RC, Mendiratta RC. *Clinical profile of cutaneous infections and infestations in pediatric age group. Indian J Dermatol. 1999; 44:174-8.*

9. Fiqueroa JI, Fuller LC, Abraha A, Hay RJ: The prevalence of skin disease among school children in rural Ethiopia - a preliminary assessment of dermatologic needs. *Pediatric Dermatol.* 1996, 13 (Suppl 5): 378-81.
10. Inanir I, Sahin MT, Gunduz K, Dinc G, Turel A, Ozturkcan S: Prevalence of Skin conditions in Primary School Children in Turkey: Differences Based on Socioeconomic Factors. *Pediatric Dermatol.* 2002, 19 (Suppl 4): 307-11.
11. Ferie J, Dinkela A, Mbata M, Idindili B, Schmid-Grendelmeier P: Skin disorders among school children in rural Tanzania and an assessment of therapeutic needs. *Trop Doct.* 2006, 36 (Suppl 4): 219-21.
12. Kar C, Das S, Roy AK. Pattern of skin diseases in a tertiary institution in Kolkata. *Indian J Dermatol.* 2014; 59:209.
13. Sharma NK, Garg BK, Goel M. Pattern of skin diseases in urban school children. *Indian J Dermatol Venereol Leprol.* 1986; 52:330-1.
14. Ogunbiyi AO, Owoaje E, Ndahi A: Prevalence of Skin Disorders in School Children in Ibadan, Nigeria. *Pediatric Dermatol.* 2005, 22 (Suppl 1): 6-10.
15. Thakare, Jayant Gopal, et al. "Thermal barrier coatings—A state of the art review." *Metals and Materials International* 27 (2021): 1947-1968.
16. Balai, Manish Kumar, et al. "Psychological impacts among health care personnel during COVID-19 pandemic: a systematic review." *Journal of Caring Sciences* 11.2 2022; 118.
17. Javed, Muhammad Aqib, et al. "Community detection in networks: A multidisciplinary review." *Journal of Network and Computer Applications* 108. 2018: 87-111.
18. Federman DG, Reid MC, Feldman SR, Greenhoe J, Kirsner RS. The primary care provider and the care of skin disease. *Arch Dermatol.* 2001; 137: 25-9.
19. Shakya SR, Bhandary S, Pokharel PK. Nutritional status and morbidity pattern among governmental primary school children in the Eastern Nepal. *Kathmandu Univ Med J.* 2004; 2:307-14.
20. Mahe A, Hay RJ. *Epidemiology & management of common skin diseases in children in developing countries.* WHO. 2005; 1-4.
21. Thappa DM. Common skin problems in children. *Indian J Pediatr.* 2002; 69: 701- 6.
22. Karthikeyan K, Thappa DM, Jeevankumar B. Pattern of Pediatric Dermatoses in a Referral Center in South India. *Indian Pediatr.* 2004; 41: 373.
23. Sardana K, Mahajan S, Sarkar R, Mendiratta V, Bhushan P, Koranne RV et al. The Spectrum of Skin Disease Among Indian Children. *Pediatr Dermatol.* 2009; 26: 6-13.
24. El-Khateeb EA. The spectrum of paediatric dermatoses in a university hospital in Cairo, Egypt. *J Eur Acad Dermatol.* 2011; 25: 666-72.
25. Popescu R, Popescu CM, Williams HC, Forsea D. The prevalence of skin conditions in Romanian school children. *Br J Dermatol.* 1999; 140: 891-6.
26. Javed M, Jairamani C. Pediatric dermatology: an audit at Hamdard University Hospital, Karachi. *J Pak Assoc Derma.* 2006; 16: 93-6.
27. Nanda A, Al-Hasawi F, Alsaleh QA. A prospective survey of paediatric dermatology clinic patients in Kuwait: An analysis of 10000 cases. *Pediatr Dermatol.* 1999; 16: 6-11.
28. Tamer E, Ilhan MN, Polat M, Lenk N, Alli N. Prevalence of skin diseases among pediatric patients in Turkey. *J Dermatol.* 2008; 35: 413-8.
29. Wenk C, Itin PH. Epidemiology of pediatric dermatology and allergology in the region of Aargau, Switzerland. *Pediatr Dermatol.* 2003; 20: 482-7.
30. Williams HC. Epidemiology of skin diseases. In: Champion RH, Burton JL, Burns DA, Breathnach SM, eds. *Textbook of dermatology*, 6th ed. Oxford: Blackwell Science. 1998:139-58.