

## Dermatoses in Children at a Tertiary Care Hospital: A Clinico-Etiological Investigation

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Conflict of interest: Nil

### Abstract:

**Background:** A dermatosis is a broad word for any kind of skin lesion or imperfection. When something is systemic, it impacts the entire body, not just a specific area and is possible that issues in other organs are associated with systemic dermatoses. Dermatoses are a prevalent health issue in children, significantly impacting their quality of life and necessitating specialist medical attention.

**Aim:** This study aimed to examine the clinical and etiological characteristics of skin diseases in children admitted to a specialized hospital.

**Hypothesis:** Our hypothesis suggests that the clinical characteristics and causes of skin diseases in children may differ based on specific risk factors and environmental factors.

**Materials & Methods:** This is a prospective study; various dermatoses were studied in pediatric patients up to 14 years of age attending the department of pediatrics OPD of our Rajendra Institute of medical science, Ranchi over a period of 12 months. All patients were divided into four different study groups: 1 month to 1 year, >1 to 6 years and 7 to 14 years.

**Results:** There were 298 boys and 212 girls in a total of 510 study populations. The majority of the skin conditions among children aged > 1 month to 14 years were found to be affected most by scabies (26%), impetigo (7%), pyoderma (7%), molluscum contagiosum (7%), tinea capitis (5%), leprosy (1%), and viral warts (2%)(1.35%), while among non-infectious disorders, they were affected by atopic dermatitis (6%), pityriasis alba (5%), seborrheic dermatitis (4%), pityriasis rosea (4%), others (3%), phrynoderma (3%), lichen planus (2.5%), contact dermatitis (2%), and ichthyosis (1%).

**Conclusion:** The study shows important findings on pediatric skin diseases at a major hospital. More research is needed to enhance diagnosis and treatment, examine long-term effects, and understand environmental and genetic factors.

**Keywords:** Dermatoses, Pediatric skin diseases, Psychological Issues, Dermatological conditions, Diagnosis, Dermatitis, Genetic factors, Environmental factors.

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### Introduction

A dermatosis is a broad word for any kind of skin lesion or imperfection. When something is systemic, it impacts the entire body, not just a specific area and is possible that issues in other organs are associated with systemic dermatoses. Dermatoses are a prevalent health issue in children, which significantly impacts their quality of life and necessitates specialist medical attention [1,2]. The occurrence of skin diseases in children in different regions of India has varied from 8.7% to 35% according to surveys conducted in schools [3,4]. Dermatological conditions in children can either be temporary or chronic and recurring. Chronic skin diseases are linked to substantial suffering and psychological consequences [2]. An in-depth

examination of dermatoses in children is essential for comprehending the causes, development, and prevalence of skin illnesses in pediatric patients [1,5,6]. This knowledge can then be utilized to devise efficient methods for preventing and treating such conditions. Prior research has examined the frequency and characteristics of several skin conditions in children, but there is a scarcity of thorough investigations into their causes and development. Clinico-etiological research of dermatoses in children is necessary to have a deeper understanding of the root causes and risk factors connected with these disorders [7]. This study seeks to fill the information void in the field by performing a comprehensive investigation of the

causes and clinical features of skin diseases in children at a specialized hospital. This study aims to examine the clinical and etiological characteristics of skin diseases in children in a specialized hospital. Our hypothesis suggests that the clinical characteristics and causes of skin diseases in children may differ based on the specific risk factors and environmental influences.

### Materials & Methods

This research involved a comprehensive analysis of pediatric patients who were seen at the outpatient department of pediatrics Rajendra Institute of medical science, Ranchi over the course of 12 months. The center is a significant referral site in the region, ensuring a diverse range of conditions, including complex issues typically seen by primary care providers in healthcare centers. The researchers included 510 consecutive pediatric patients, up to 14 years of age, in the study.

Guardians of each participant provided written informed consent. Patients were divided into four groups based on age: 1 month to 1 year, 1 to 6 years, and 7 to 14 years. The researchers recorded the patients' age, sex, address, religion, caste, nationality, and socioeconomic status. Diagnosis of dermatological conditions was made through a thorough review of the patient's history, clinical features, and physical examination of the skin.

Laboratory tests, including KOH mount, Gram's strain, Wood's lamp examination, diascopy, Tzanck test, hematological and biochemistry analysis, purified protein derivative, and skin biopsy as needed, were used to confirm the diagnosis when necessary.

The dermatoses were classified according to the Tenth Revision of the International Statistical Classification of Diseases (ICD-10) [8]. This study focused on the sex and age distribution and percentage frequency of dermatoses. Patients with more than one dermatological condition were excluded from this study.

### Results

There were 298 boys and 212 girls in the 510 study populations. The majority of the skin conditions among children aged > 1 month to 14 years were found to be affected most by scabies (26%), impetigo (7%), pyoderma (7%), molluscum contagiosum (7%), tinea capitis (5%), leprosy (1%), and viral warts (2%)(1.35%), while among non-infectious disorders, they were affected by atopic dermatitis (6%), pityriasis alba (5%), seborrheic dermatitis (4%), pityriasis rosea (4%), others (3%), phrynoderma (3%), lichen planus (2.5%), contact dermatitis (2%), and ichthyosis (1%).

**Table 1: Pattern of various dermatoses in the >1 month age group.**

Dermatoses Variables	Age Distribution				
	1 month to 1 year	>1-6 years	7-14 years	Total	Percent (%)
Infection disorders	10	155	86	251	56
Dermatitis	18	36	17	71	16
Papulosquamous disorders	0	17	24	41	9
Miscellaneous	2	10	11	23	5
Disorders of skin appendages	6	6	7	19	5
Nutritional disorders	0	5	12	17	4
Pigmentary disorders	2	5	6	13	2
Keratinization disorders	3	4	5	12	2
Bullous disorders	0	1	1	2	1
Total	41	239	169	449	100

**Table 2: Distribution of patients (>1month age group) with infectious disorders according to their individual etiology.**

Organism	Dermatoses	Age distribution			
		1month to 1 year	>1-6 years	7-14 years	Total
Parasitic	Scabies	3	120	35	158
	Papular urticaria	0	3	1	4
	Pediculosis Capitis	0	1	1	2
Bacterial	Impetigo	1	23	3	26
	Pyoderma	0	16	9	25
	Hansen's disease	0	4	5	9
	Lupus vulgaris	0	1	1	2
Fungal	Tinea capitis	3	12	5	20
	Pityriasis versicolor	0	3	4	7
	Tinea corporis	0	4	3	7
	Cutaneous candidiasis	4	1	0	5

Viral	Molluscum contagiosum	0	13	11	24
	Wart	0	1	4	5
	Chicken pox	0	2	1	3
	Herpes simplex	0	1	1	2
	Herpes zoster	0	0	1	1

## Discussion

The present study seeks to fill the information void in the field by performing a comprehensive investigation of the causes and clinical features of skin diseases in children at a specialized hospital in this region. This study aims to examine the clinical and etiological characteristics of skin diseases in children in a specialized hospital. Our hypothesis suggests that the clinical characteristics and causes of skin diseases in children may differ based on the specific risk factors and environmental influences. Infectious illnesses accounted for 56% of dermatoses in our study in the age range of > 1 month to 14 years.

A study [9] identified only 11.4% of infectious etiology diseases in their study; other research writers have shown that infections and infestations etiology disorders contributed more than in our study [10,11]. In this study, parasitic infestation was the most common infectious skin illness, which was also reported in a previous study [12]. The most common infestation and main cause of skin problems in the current study were scabies (158 cases). Scabies incidence rates reported from various sources vary between 5% to 23% [9,11,13]. Comparing this study with a previous study [13], the incidence of pediculosis capitis infestation was 0.45%. Other studies have revealed a higher incidence of pediculosis capitis up to 54 % [10,12,13]. Numerous international studies have reported an incidence of 19%–81.5% [14-16]. The high scabies rate in our study might be a result of overcrowding, poor cleanliness, and most cases originating from lower socioeconomic levels.

Previous studies have shown the incidence of bacterial infections to be approximately 26% in their studies [17,18]. In the present study, bacterial infections were the second most prevalent infectious disease, accounting for 62 cases out of 449. The most common bacterial infections were impetigo (n = 26) and pyoderma (n = 25). This incidence was lower than that reported in another research [13,14]. The most prevalent viral infection in this study was molluscum contagiosum (24 cases), followed by viral warts (five cases), which is like the percentages reported in a previous study [19]. Studies of [16,20,21] and other nations, where a greater frequency of warts in children was observed [17, 20,21]. In our study, fungal infection was common in 39 cases, mostly in the older age group. Furthermore research, such as that supports these results [16]. The other studies showed the

prevalence to be on the higher side compared to the present study [22,23]. Similar to earlier research, tinea capitis (20 cases) was the most prevalent fungal infection, mostly in older age groups [24]. The low prevalence of fungal infections could be linked to the maturation of sweat glands, the simple availability of over-the-counter medications in metropolitan areas, and newspaper and media advertising of antifungal medications.

Leprosy prevalence in the age range of > 1 month to 14 years was observed in nine cases, which is on the lower side compared with the studies of [25,26]. Although the incidence of childhood leprosy is still alarmingly high in this area, leprosy has been statistically eradicated. The second most common dermatosis in the current study was dermatitis (71 cases), which was greater than the incidence reported in other studies [9,26,27].

## Conclusion

This study offers significant information about the clinicopathological characteristics of pediatric dermatoses at a tertiary care center, underscoring the need for additional research to enhance diagnosis and treatment methods. Future studies should focus on exploring the long-term consequences of pediatric dermatoses, evaluating the efficacy of innovative therapies, and assessing the influence of environmental and genetic elements on the onset and progression of these conditions.

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