

## Paediatric Dermatoses : A Clinico-Epidemiological Study In A Tertiary Care Hospital Of South India

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### Abstract

**Introduction:** Skin diseases in the paediatric population is a common community health problem with impact on the parents, children and society. The paediatric dermatoses has a wide variation in clinical and morphological presentation, which could be due to environmental factors, region of study, standard of living, per-capita income, education, type of population studied, personal hygiene, season in which study conducted and nutritional status of the person.

**Aims and Objectives:** To study the clinical pattern of various skin disorders and their prevalence in the paediatric age group under 18 years of age.

**Material and Methods:** This is a hospital based cross-sectional observational, retrospective study conducted at department of Dermatology, Venereology and Leprosy, Government general hospital Suryapet, Telangana, for a period of 3 years (2019-2021). Out of 10,044 cases, 28.31% were under 18 years age. A detailed history including the biographic data was taken. General, physical, cutaneous and systemic examination was carried out. The data was collected and analysed.

**Results:** Out of 10,044 patients, 2,844 subjects under the age of 18 years were recruited for the study. 67.51% were males and 32.49% were females (M:F=2.07:1). The maximum

number of patients were in the age group of 12-18 years (51.09%). Clinico epidemiological analysis revealed that infections and infestations were the most common dermatoses (60.76%) followed by dermatitis and eczemas (11.6%), appendageal(8.86%), keratinization disorders(4.85%), urticaria (4.85%), pigmentary disorders(2.95%), papulosquamous disorder(2.11%) vascular malformations (1.48%) and others(2.32%).

**Conclusion:** Paediatric dermatoses is responsible for significant morbidity in the children and society. Infections and infestations were most common dermatoses seen in our study and that could be due to poverty, overcrowding, undernutrition, poor hygiene, low standard of living and lack of health education. Early diagnosis would possibly decrease the transmission of infection and infestation that would in turn reduce the disease burden in the society.

#### **Introduction:**

Skin diseases in the paediatric age group are common health problems with wide variation in clinical presentation<sup>1</sup>. Immature immune system renders children more susceptible to cutaneous infections and infestation<sup>2</sup>. Paediatric dermatoses differ from adult dermatoses in clinical presentation, treatment, prognosis and complication. This variation among dermatoses is due to region of study, environmental factors, standard of living, education, type of population studied, hygiene and nutritional status<sup>3</sup>. Skin diseases are a major health problem in the paediatric age group and are associated with significant morbidity. Skin diseases constitute 30% of all outpatient visit<sup>4</sup>. The prevalence of paediatric dermatoses in various parts of India has ranged from 8.7% to 35% in school-based surveys<sup>5</sup>. Cutaneous infections are common in children during school going years.

**Material and Methods:** The present study is a hospital based cross-sectional, retrospective, observational, descriptive study, conducted in the department of dermatology, venereology and leprology, government general hospital Suryapet, Telangana over a period of 3 years (2019-2021). All the patients under and equal to the age of 18 years were included under the study and the patients above 18 years of age were excluded from the study. Out of 10044 total dermatoses, 28.31% (2844) were diagnosed as paediatric dermatoses and were in the age group of 0-18 years. A detailed general, physical, cutaneous and systemic examination were carried out and recorded in proforma for analysis and interpretation of data.

**Results:** Out of 10044 patients, 28.31% (n=2844) subjects under the age of 18 years were recruited for the study. 67.51% were males and 32.49% were females with M:F ratio 2.07:1(Image:1). The maximum number of patients were in the age group of 12-18 years (51.09%). Etiological analysis revealed that infections and infestations (Image-2) were the most common dermatoses (60.76%) followed by dermatitis and eczemas (11.6%), appendageal (8.86%) (Image-3), keratinization disorders (4.85%), urticaria (4.85%), pigmentary disorders (2.95%), papulosquamous disorder (2.11%) vascular malformations (1.48%) and others (2.32%) (Table-1).

Image 1: Distribution of patients by Age group and sex.

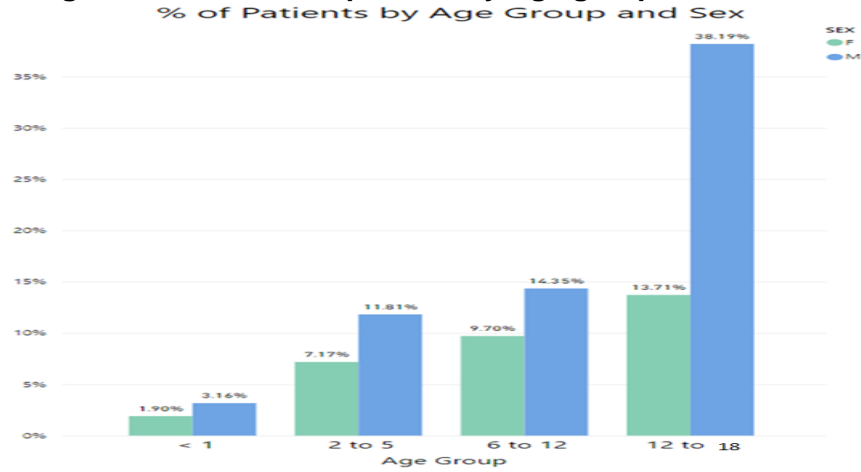


Image 2: Fungal Infections and Parasitic Infestation

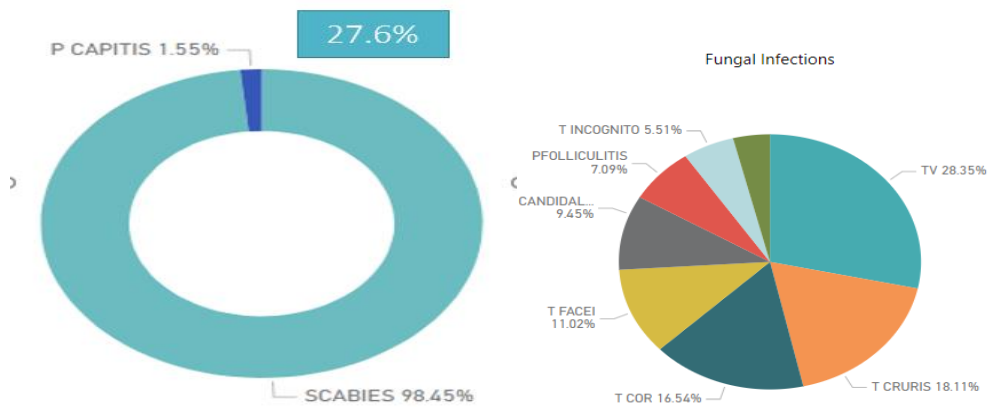


Image 3: Appendageal disorders

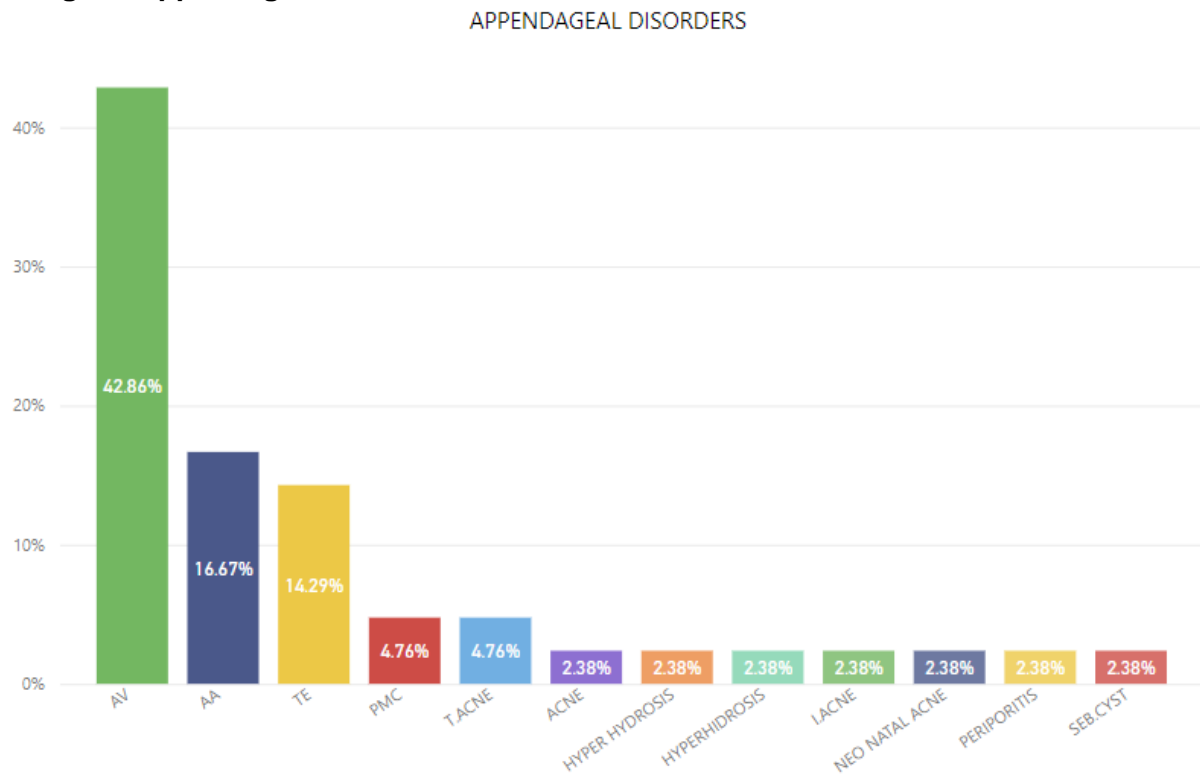


Table 1: distribution of various dermatoses

Table showing the distribution of various dermatosis		
PARAMETERS	NUMBER	PERCENTAGE
<b>INFECTIOUS</b>		
Bacterial	114	4.01
Viral	216	7.59
Fungal	612	21.52
Protozoal	786	27.64
<b>NON-INFECTIOUS</b>		
Keratinization	138	4.85
Eczema	72	2.53
Dermatitis	258	9.07
Urticaria	138	4.85
Papulo Squamous	60	2.11
Bullous	6	0.21
Vascular	42	1.48
Pigmentary	84	2.95
Appendageal	252	8.86
Others	66	2.32

**DISCUSSION:**

The clinical and morphological pattern of skin lesions in paediatric age group as in adult age group is greatly influenced by many factors like climate, environment, diet, education and socioeconomic status<sup>3</sup>.

In our study, the age group of 12–18 years constituted the maximum number of cases (51.09%). This may be due to the fact that the adolescent population are keener towards their skin health and approached the dermatologist early for seeking treatment and also the parents of this age group were anxious regarding the clinical appearance of lesions and hence approached the dermatologist at the earliest. In contrast Sacchidanand et al.<sup>6</sup> study had observed 5–11 years (33.21%) as the common age group followed by adolescents with 29.81% of patients. Sharma et al. Study was similar to our study where adolescents constituted the majority of patients<sup>7</sup>. Male patients (67.51%) outnumbered the female patients (32.49%) in our study, this could be due to the reason that male gender was distributed in more number in the region and also due to their early approach to the dermatologist because of outdoor job when compared to females who approach late due to their busy schedule at home. Infections and infestations were the most common dermatoses encountered, which were seen in 60.76% of the total cases.

Our findings were similar to a study by Sacchidanand et al.<sup>6</sup> and Bisht et al.<sup>8</sup> in which infection and infestation were constituted for 32.47% and 36.46% respectively.

Scabies alone constituted 98.5% of parasitic infestation, making 27.64% of the total dermatoses (Image 4). This predominant skin condition among the children could be due to the contagious nature of the infection and also the factors found in the community like overcrowding, low education, lack of hygiene, low standard of living etc which had contributed to the more incidence and prevalence of the disease. Our study results were in contrast to Sacchidanand et al.<sup>6</sup> study where the incidence of scabies was only 6.97%. Sarkar and Kanwar in their study reported the percentage of scabies in the general population of

rural communities in India to be 5%<sup>9</sup>. In our study pediculosis constituted around 1.5% of total infestations.

Bacterial infections constituted 4.01% of total paediatric dermatoses. Among this, Furunculosis was the most common bacterial infection with 38% of it, followed by impetigo with 28.5% (Image 5), then secondary bacterial infections with 14.2% of bacterial infections. This could also be attributed to the above factors which were mentioned for scabies. In a study conducted by Bhatia and Ghosh et al.<sup>10,11</sup> pyodermas were the most common dermatoses they found.

In our study Fungal infections of the skin constituted 21.5% of total dermatoses. Tinea cruris and corporis were the most common among these infections making up to 34.65% of fungal infection followed by tinea versicolour which accounted to be 28.3%. This fungal infection was predominant in the males due to the lifestyle adaptations like wearing tight jeans, lack of personal hygiene, occlusive socks, sharing common soaps and towels, outdoor jobs, excessive sweating etc.

In our study viral infections constituted 7.59% of total dermatoses. Hand foot mouth disease was the most common viral disease constituting 26.47% of these infections (Image:6). These infections could be due to the seasonal variations and due to the contagious nature of the disease among the family members. In contrast to our study, Karthikeyan et al.<sup>2</sup> study observed that incidence of molluscum contagiosum to be most common (2.5%) in children aged 1 to 15 years.

Overall, In our study predominance of infections and infestations could be due to the reason that the majority of the patients attending the government sector hospital were below poverty line and belonged to low socioeconomic status. The factors like poverty, lack of health education, large families, overcrowding, low hygiene levels, low standard of living, less annual income etc are responsible for the spread of infections and infestations among the families and thus contributed the maximum percentage in the total dermatoses

In our study Eczema and dermatitis was the second common group of dermatoses constituting 11.6% of total cases. The incidence rate of eczema in the study by Sacchidanand et al. was 20.66% whereas in the study by Karthikeyan et al.<sup>2</sup> study, it was found to be 8.6%. AD was the most common endogenous eczema and constituted 16.36% which was similar to the study by Sacchidanand et al.<sup>6</sup> which reported atopic dermatitis as the most common eczematous dermatitis constituting about 6.12%. Among exogenous eczema PMLE constituted 12.73% of total eczemas followed by ICD 10.9%.

Papulosquamous disorders were noted in 2.11% of the total cases during this study period, whereas in the study of Sacchidanand et al.<sup>6</sup> it was 6.08%. In accordance with Sacchidanand et al., among the papulosquamous disorders, psoriasis was the most common dermatoses encountered even in our study.

Appendageal disorders constituted 8.86% of total dermatoses in the present study. Acne was the most common among them with prevalence rate of 42.87% (Image-7) followed by alopecia areata of about 16.6%. The acne was common in the adolescent age group of 12 - 18 years contributing to the hormonal factors, as well as environmental and dietary factors.

Pigmentary disorders constituted 2.9% of total dermatoses in our study. Vitiligo was most common (21.43%) (Image-8), followed by post-inflammatory hyperpigmentation (14.29%).

Sacchidanand et al. and Karthikeyan et al. reported pigmentary disorders to be 5.81% and 5.7% respectively.

Vascular disorders constituted about 2.95% and had haemangiomas, Henoch Schoenlein purpura, leukocytoclastic vasculitis.

Other disorders constituted about 2.32% and includes, aphthous ulcer, ganglion, lichen amyloidosis, trauma, transient neonatal pustulosis, insect bite reaction.

Few limitations of our study were, it was retrospective, conducted in one center.

**Image 4: clinical picture showing scabies infestation**



**Image 5: clinical picture showing impetigo contagiosa**



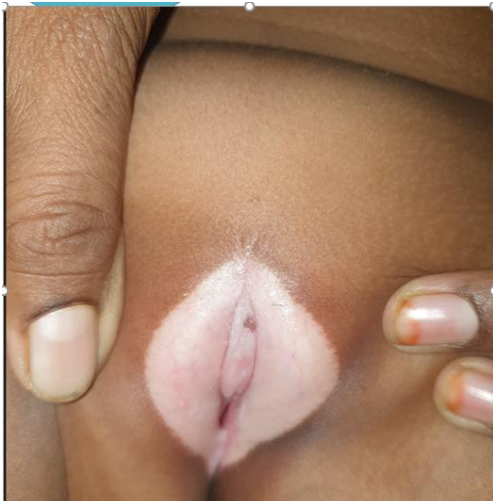
**Image 6: clinical picture showing hand foot mouth disease**



**Figure 7: clinical picture showing Acne vulgaris**



**Image 8: clinical picture showing genital vitiligo**



**Conclusion:** Dermatoses in children is a widespread and common problem all over the world responsible for significant morbidity in them. Infections and infestations were most prevalent dermatoses possibly due to poverty, overcrowding, undernutrition, poor hygiene, low standard of living and lack of health education. Early diagnosis and initiation of treatment with lifestyle modification would decrease transmission of infection and infestation that would reduce the morbidity in the society. This study might help to know the changing trends of paediatric dermatoses.

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Nil.

**Conflicts of interest**

Nil.

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