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Analysis of Pattern of Common Dermatoses in School Children of Rural Area : A Cross Sectional Study

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ABSTRACT

Introduction

Dermatoses are common among children residing in the hostel due to over crowding and poor hygiene which can cause significant morbidity. School survey is a very useful indicator to assess the health status of children.

Objective

The present study was conducted to assess the pattern of various dermatoses among boys of high school residing in hostel in a rural background.

Materials and methods

A cross sectional study was conducted in a government residential boys school of rural background in Kurnool district in April 2023. A total of 275 students of age group 11-16 years were examined for diseases of skin & appendages. Data was collected using a semi structured questionnaire and by head to toe examination. Then the data was analysed and tabulated.

Results

A total of 275 children were enrolled in the study. The overall prevalence of skin diseases was 80.72%. Almost 32 types of dermatoses were identified among the students. Of these 27 were non-infectious and 5 were of infectious nature. The most common disease was acne 14.68%, followed by scabies 9.13%, varicella scars 8.73%, xerosis 7.92%, Fissured foot 7.54%. There was presence of more than one dermatoses among some children.

Conclusion

The most common disease was Acne among the children. Scabies was the second highest suggesting poor hygiene maintenance. Health education of children, teachers, and caregivers regarding signs and symptoms of dermatoses and hygiene practices is needed for prevention, early detection and timely intervention.

Keywords

Dermatoses, Residential school , prevalence , rural , hygiene practices.

INTRODUCTION

Skin is the largest organ of our body which forms about 16% of the body weight and covers the entire body. So, the skin becomes a major target for infections. Paediatric age group is more prone to these conditions because of thin and delicate skin, greater absorption because of greater ratio of skin surface area to body volume and poor ability to regulate the temperature. Though these are not responsible for mortality they do cause high morbidity.[1]Skin disorders are mostly seen among the school children with a prevalence ranging from 8.7% to 35% depending on school based surveys conducted in India. Status of health, hygiene, and personal cleanliness of a society can be assessed from the prevalence of certain skin diseases in the children of the community.[2]

Paediatric dermatoses differ in clinical presentation, treatment, and prognosis from adult dermatoses so that they have to be addressed in a different way. Pattern of dermatoses vary from area to area. This can be attributed to differing climatic, cultural, and socioeconomic factors.[3]School survey is a useful indicator as it is easy to conduct, less time consuming and large number of children of specific age group can be screened for presence of diseases at a single time.[4] The purpose of studying the prevalence of paediatric dermatoses is to assess the level of health awareness and availability of health-care services which is useful to build child health-care strategies that cope with actual community requirements.[5] The present study is aimed to find the prevalence of paediatric dermatoses in children studying in residential schols located in the rural background .

MATERIALS & METHODS

This was an observational cross sectional study.

It was conducted in a government boys residential school located in rural background in Kurnool district, Andhra Pradesh in April 2023. The study population included the high school students aging between 11-16years age group. School visit was conducted after getting consent from the principal of the school. Each child was questioned regarding their age, residence, and any specific complaint related to skin. Then, the student was evaluated for hygiene status. Each child was then subjected to a complete dermatological examination including skin, nail, hair and mucosa in adequate daylight. Digital Photographs were taken after getting the consent.

After examination, skin diseases were divided into

two broad categories for the purpose of analysis: (1) Infectious dermatoses, (2) noninfectious dermatoses.

The findings were entered in a proforma for the analysis and interpretation of data. The data obtained analysed using appropriate statistical techniques.

Results:

A total of 275 students of age group 11-16yrs were included in the study. Majority of the study subjects were of 12yrs (24.36%).

Of 275 study subjects, only 53(19.2%) were totally normal without any skin lesion and the remaining 222 children had any one of the skin lesions, which makes the prevalence of dermatoses was almost 80.72%.Almost 32 types of dermatoses were identified among the students. Of these 27 were non-infectious and 5 were of infectious nature. Non infectious dermatoses constituted 82% of total prevalence.

Non infectious Dermatoses:

Non infectious dermatoses were further classified into Inflammatory, pigmentary, nutritional and appendageal dermatoses. Out of these appendageal dermatoses constituted highest 36.9%. Acne was the first most common condition among students to about 14.68%. Followed by Post varicella scars in 8.73% , xerosis in 7.94%. Among non infectious dermatoses, xerosis constituted the major presentation among nutritional dermatoses

Infectious Dermatoses:

Scabies was the common infection present in 9.13% of study population, followed by Tinea corporis in 4.3% . Warts were observed in 1.19% of total children.

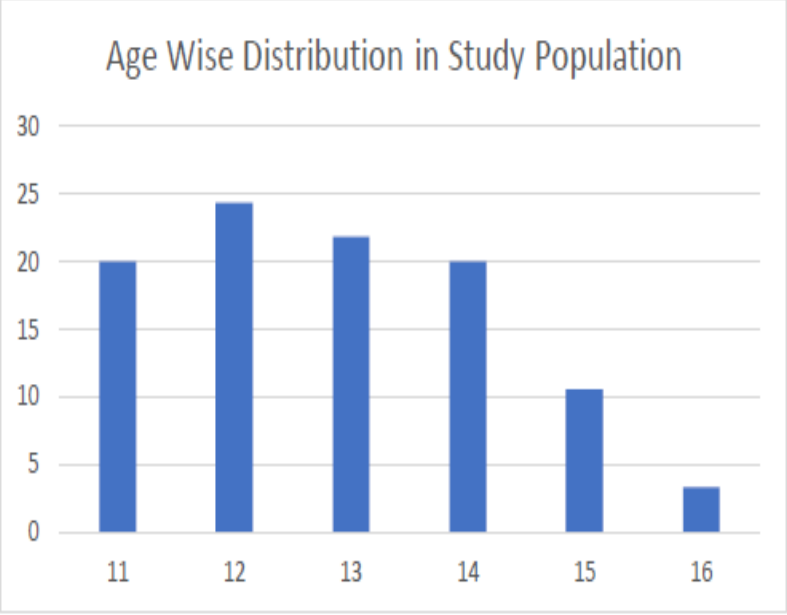

Chart1: Age wise distribution in study population

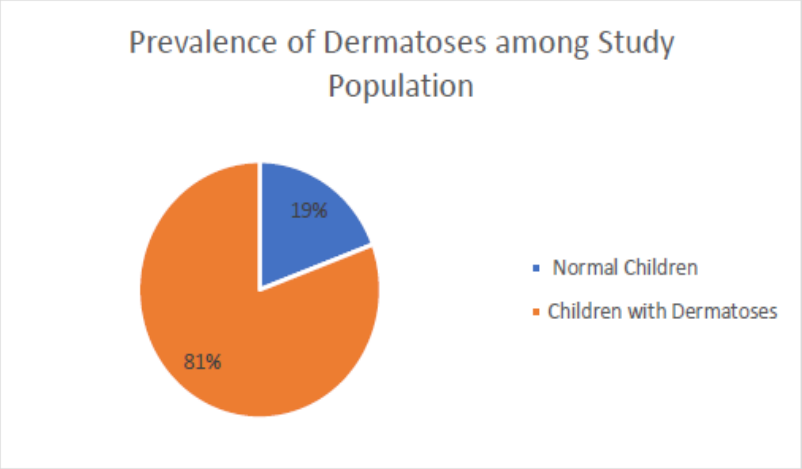

Chart2: Prevalence of dermatoses among study population

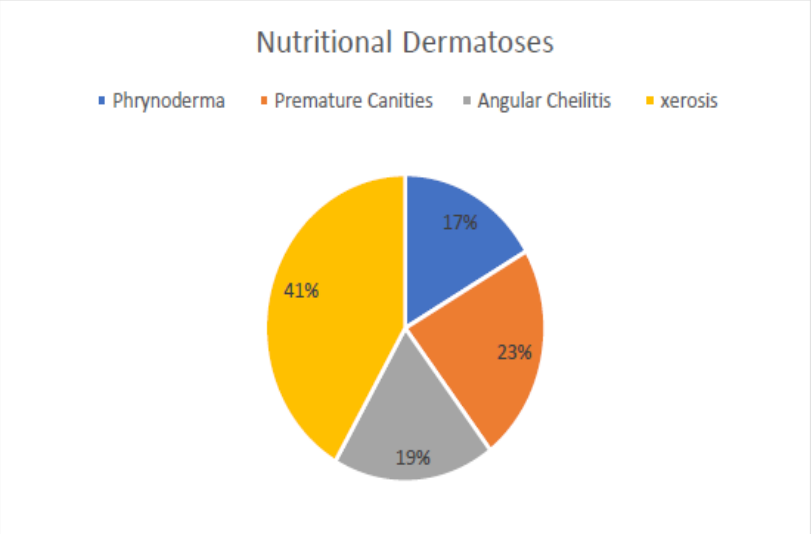

Chart3: Nutritional Dermatoses among study population

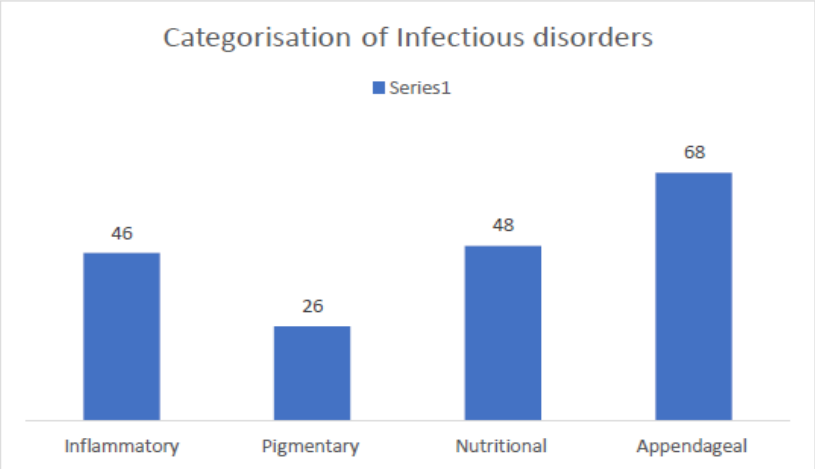

Chart4: Categorisation of infectious disorders among study population

Table 1: Categorisation of Noninfectious Dermatoses

Condition	Number .of students affected	Percentage
Inflammatory	46	18.26%
a) Photo aggravated:		
• PMLE	4	1.59%
• Actinic cheilitis	4	1.59%
b) Papulosquamous :		
• Lichen nitidus	2	0.79%
• Lichen planus	1	0.40%
c) Eczematoid:		
• Fissured foot	19	7.54%
• Urticaria	4	1.59%
• Eczema	3	1.19%
• Liplick dermatitis	2	0.79%
• Contact dermatitis	2	0.79%
• JPD	1	0.40%
d) Allergic :		
• IBR	4	1.59%
Pigmentary	26	10.32%
a)Post Varicella scars	22	8.73%
b)Melanocytic nevi	3	1.19%
c)CALM	1	0.40%
Appendageal	68	26.98%
a) Acne	37	14.68%
b) Hyperhydrosis	10	3.97%
c) Keratolysis Exfoliativa	10	3.97%
d) Miliaria	6	2.38%
e) Milia	3	1.19%
f) Sebaceous cyst	2	0.79%
Nutritional Dermatoses:	48	19.05%
a) Xerosis	20	7.94%
b) Premature canities	11	4.37%
c) Angular cheilitis	9	3.57%
d) Phrynoderma	8	3.17%

Table2: Categorisation of Infectious Dermatoses

Condition	Number of students affected	Percentage
• Scabies	23	9.13%
• Tinea corporis	10	3.97%
• Folliculitis	6	2.38%
• Pityriasis versicolor	3	1.19%
• Warts	3	1.19%

Discussion

Skin disorders in children may result in considerable discomfort, parental anxiety, and embarrassment to the child and unnecessary leaves from school and work. This, will in turn, leads to loss of confidence and disruption of social relations, feeling of stigmatization, and major changes in lifestyle.[6] Sociodemographic factors like age, gender, economic status, and overcrowding play a crucial role in assessing the pattern of skin disorders in this age group.[7]

Information on the epidemiological characteristics and economic constraints in a particular area are needed to formulate standardized recommendations for treating the common skin diseases prevalent there.[8]

Population-based prevalence studies are very important to estimate the true burden of skin disorders among children.[8] The incidence of these diseases appears to be fluctuating and is influenced by social, economic, public health, nutritional, environmental, and climatic factors, as well as the genetic make-up of the population studied.[9]

In our study, skin disorders were found in 80.72% which is comparable to Rao Et al. (76.65%) .[10]However, In Dogra and Kumar[11] and Sharma[12] et al.'s study, the Prevalence of dermatoses was 38.80% and 14.30% which is less when compared to our study. This might be due to rural area and low socioeconomic status of the population in our study.

Infectious Dermatoses:

These constituted 18.02% of total prevalence which was less compared to Negi et al.[13] (50.69%) and Valia et al.[14] (43%). Among the infectious dermatoses, scabies was the leading presentation in 9.13% of total study population, followed by Tinea corporis in 4.3%. This is

attributed to poor hygienic and sanitary conditions, lack of awareness, and services for the skin diseases. With control and preventive measures against these diseases ,the burden of skin diseases can be reduced by half in the community.

Among the bacterial infections , folliculitis was the only presentation in 2.38%. Warts constituted 1.19%.

Noninfectious Dermatoses:

Among the non infectious dermatoses, appendageal diseases like acne (14.68%), hyperhidrosis (3.97%) are the leading conditions. Hyperhidrosis and keratolysis exfoliativa coexisted in most of the children. Miliaria is another disorder peculiar to hot and humid tropics and was seen in 2.38% of the children. Sebaceous cyst was observed in 0.79% of the children.

Inflammatory disorders: These constituted 18.26% of the total dermatoses among children.

a) Papulosquamous conditions like lichen planus (0.40%), lichen nitidus (0.79%)
b) Photo aggravated dermatoses like PMLE(1.59%), actinic cheilitis (1.59%),
c) Eczematoid conditions like fissured foot(7.54%), followed by urticaria (1.59%), eczema (1.19%), liplick dermatitis (0.79%), contact dermatitis (0.79%), Juvenile plantar dermatosis(0.40%)
d) Allergic conditions like IBR in 1.59% of the children

Pigmentary Dermatoses: These constituted 10.32% of total dermatoses among the children.

Pigmentary Disorders included post varicella scars (8.73%) as the major leading presentation, followed by acquired melanocytic nevi in 1.19% of study

population. Post varicella scars was the third common dermatosis observed among children which suggests more of infection spread among children and their low level of awareness regarding the disease precautions that are to be followed. According to recent studies in children, nevi are the leading cause of dermatology referrals in Spain and the second leading cause in Switzerland and China but not in our country because of darker skin complexion.[15]

Nutritional Dermatoses : These constituted 19.05% of total dermatoses among children.

Among the nutritional deficiencies, xerosis (7.94%), phrynoderma (3.17%), and angular cheilitis (3.57%) , premature canities (4.37%) were the main problems. Phrynoderma was seen in 3.17% of students which is less compared to the studies done by Rao et al.,[10] and Sharma Et al.[12],where it was found to be 6.28% and 10.96%. respectively.

CONCLUSION

The overall prevalence of Dermatoses in the school going children in our study is 80.72% which is because of rural area and low socio-economic status of the population in that area.

Infectious dermatoses were observed in 18.07% of students, noninfectious dermatoses were observed in of students, and nutritional deficiency dermatoses in 19.07% of students. The top three conditions, i.e., Acne (14.68%), Scabies (9.13%), and Post varicella scars (8.73%) constituted 32.54% of the total burden of skin diseases. Thus, simple steps on promoting hygiene, sanitation, improving awareness regarding skin diseases , and availability of commonly required medicines at the community level may bring down the burden of skin diseases rapidly.

Regular examination of school children by experienced doctors with the help of school management will help in decreasing the prevalence of skin disorders in children and Society. Health education, proper nutrition and good personal hygiene will definitely improve the health status of school children. Even though most of the conditions were asymptomatic, routine school survey should be done every year for the early diagnosis and treatment of communicable and nutritional diseases. As India is a developing country, it still has relatively high prevalence of infections as a result of relatively low hygiene standards as well as ignorance, poverty, and overcrowding. We would like to highlight the fact that many of these skin diseases can be controlled by proper sanitation, improving nutrition and environment.

LIMITATIONS

As it was a school survey there was no availability of higher investigations to further confirm the diagnosis. Many further visits are needed to assess the health status of children and attribute it to the community .

ABBREVIATIONS

PMLE - Poly Morphous Light Eruption

JPD - Juvenile Plantar Dermatosis

IBR – Insect Bite Reaction

CALM - Cafe-au-lait Macules

Figure1: Dermographism

Figure2: Verruca vulgaris

Figure3: Cafe-au-lait-Macules

Figure 4: Acne vulgaris

Figure 5: Acquired melanocytic nevi

Figure6: Pityriasis versicolor

Figure7: Pityriasis alba

Figure8: Fissured foot

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