

Epidemiology and prevalence of dermatological diseases among schoolchildren of Medak district, Telangana—a clinical survey

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Abstract

Background: Children are vulnerable to many skin diseases and more prone to infections, because of their socio-economic, environmental, racial, ecological, habitual, mental, and literacy levels. Epidemiological studies in pediatric skin diseases are less, and it offers most powerful and direct method to evaluate the cause and prevalence of skin diseases in human populations.

Objective: To evaluate the epidemiology and prevalence of various dermatological diseases among schoolchildren of Sangareddy, Medak, Telangana state, India.

Materials and Methods: This study is a cross-sectional study and was conducted in 1,000 schoolchildren of Sangareddy town and surrounding rural village of Medak district, Telangana state, India. Cases were subclassified according to the etiology and type of skin disease.

Results: Total number of affected children was 754 (75.4%), while the number of nonaffected children was 246 (24.6%); 345 (45.15%) of the diseased children were boys, while 409 (54.24%) were girls; 255 of diseased children (33.81%) were living in urban residence, of which 141 (55.1%) were boys and 114 (44.9%) girls; while 499 (66.18%) of the diseased children were from rural residence, of which 205 (40.98%) were boys and 294 (59.02%) girls.

Conclusion: This study reveals that girls are more commonly affected by dermatological diseases (41%) and skin diseases were more in rural (49%) children than in urban children (26.40%).

KEY WORDS: Skin diseases, epidemiology, prevalence

Introduction

The skin is not a mere inactive covering of the body but a delicate active boundary and is a vital organ of social contact. The look of skin and its related structures majorly affects the body image, which is extremely rooted within the culture of any given social group.^[1]

Skin diseases are very common, and a minute level of morbidity affecting a many people can sum up to far more than huge level morbidity affecting only a few people.^[2] The kind and the extent of a disease in any community reflect the genetic distribution of its people, the socioeconomic status, the nutrition and the crowding. The lower standards of hygiene and the climate are crucial factors for the spreading and incidence of skin diseases. In addition, they are affected by the quality of the accessible medical care.^[3]

Skin disease is seldom deadly. however, it can exert a noteworthy influence in terms of treatment cost, days absent from school and psychological distress.^[4,5] It is frequently indicated that overpopulation^[6] and worse living environments support the development of many skin diseases.^[7,8]

Several factors such as ecological, environmental, racial, social, mental and literacy level influence the pattern of skin

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disease in India.^[9] In our country, 100–150 million children are of school-going age.^[10]

Children are vulnerable to many skin diseases and more prone to infections owing to their household and school environment, especially in overcrowded or poor socioeconomic levels.^[11] Only limited data are obtainable regarding the frequency of specific skin diseases.^[12]

Although the known causes that lead to the incidence and spread of skin diseases are genetic, race, geographical conditions, occupation, diet, habits and public health, however, in many countries, the occurrence of skin diseases is yet to be established well. We are unaware of the specific model of prevalence of skin diseases and association among the needs, supply and demands for dermatological care. Moreover, we are not aware the extent of skin disease as a public health problem. For this reason, performing epidemiological studies is very crucial.^[13]

Epidemiological studies offer one of the most influential and direct methods assessing the cause of skin diseases in human populations. To assess the occurrence of several skin diseases and health and hygiene statuses of the society, school surveys act as important indicators. Moreover, they offer an approximation of the extent and demographic factors of those who seek medical care.^[14]

Only very few epidemiological studies in pediatric skin diseases are available. Together, these surveys propose that around one-fifth to one-quarter of schoolchildren experience one or more skin diseases.^[15] This study was aimed to estimate the prevalence of commonest skin diseases among the schoolchildren.

Materials and Methods

This study was conducted under Department of Dermatology, Venereology and Leprosy, MNR Medical College and Hospital, Sangareddy, Medak, Telangana, India. The aim of study is to estimate the commonest skin diseases among schoolchildren in Sangareddy (subdistrict) and surrounding rural villages of Medak district, Telangana, by selection of 1,000 schoolchildren over a period of July 2014 to April 2015.

Inclusion Criteria

All schoolchildren who were attending the school were included.

Exclusion Criteria

Schoolchildren younger than 5 years and older than 14 years were excluded.

Parent Data Collection

Sociodemographic data were gathered, including: age in years, nationality, residence, educational and occupational status of the parents, family income, family size, birth order of the child, type of current residence, pets in the house, and presence of skin lesions among family members and their

nature (physician-based diagnoses). Consent was taken from the parents.

Habits of Children

Habits were assessed through a personal interview with the children on the day of their screening examination, using a structured form for gathering data regarding personal habits, including: bathing frequency, towel sharing, use of soap and other cleansing materials while bathing, frequency of underwear changing, nail trimming, and contact with pets/other animals.

Clinical Screening for Skin Diseases

A complete head-to-foot examination was performed in a private room in each school, using day light. The studied cases were further divided according to causative factors and type of skin disease in to:

- bacterial skin infections,
- parasitic skin infestations,
- fungal skin infections.
- viral skin infections,
- dermatitis/eczema,
- allergic skin diseases,
- hair disorders,
- others skin disorders/miscellaneous.

Results

All the selected children were dermatologically examined. The number of affected children was 754 (75.4%), while the number of nonaffected children was 246 (24.6%); 345 (45.15%) of the diseased children were boys, while 409 (54.24%) girls.

Of the 255 diseased children (33.81%) living in urban residence, 141 (55.1%) were boys and 114 (44.9%) girls; 499 (66.18%) of the diseased children were from rural residence; of them, 205 (40.98%) were boys and 294 (59.02%) were girls.

Number of students in class in urban schools ranged from 35 to 40 with average number 37.5 ± 5 , while that in rural schools ranged from 40 to 60 with average number 50 ± 5 . Number of members of the family for students in urban schools ranged from 3 to 6 with average number 4.5 ± 0.5 , while that in rural schools ranged from 3 to 8 with average number 5.5 ± 0.5 [Table 1].

Discussion

Skin diseases in children are common health problems. They are extremely visible, cause discomfort, and may result in social burden with socioeconomic consequences. In many localities, they represent the prime reason for medical attention.^[16]

This study reveals that girls were more commonly affected by dermatological diseases (41%). But, the study of Rao et al.^[17]

Table 1: Distribution of various skin diseases among rural and urban schoolchildren

Disease	Urban		Rural		P	Total	
	Number	%	Number	%		Number	%
Eczematous diseases							
Pityriasis alba	45	4.55	55	5.55	<0.05	100	10.1
Atopic dermatitis	21	2.10	11	1.05	<0.05	32	3.15
Seborrheic dermatitis	16	1.60	10	1.00	<0.05	26	2.60
Contact dermatitis	9	0.90	3	0.25	<0.05	12	1.15
Fungal infections							
Tinea capitis	6	0.65	16	1.60	<0.05	22	2.25
Tinea corporis	2	0.20	2	0.25	>0.05	4	0.45
Pityriasis versicolor	2	0.10	2	0.15	>0.05	4	0.25
Candidiasis	1	0.10	1	0.10	>0.05	2	0.20
Bacterial infections							
Impetigo contagiosum	14	1.45	20	2.00	<0.05	34	3.45
Folliculitis	4	0.40	5	0.50	>0.05	9	0.90
Erysipelas	1	0.10	1	0.05	>0.05	2	0.15
Viral infection							
Warts	6	0.60	6	0.60	>0.05	12	1.20
Chicken pox	6	0.60	3	0.35	<0.05	9	0.95
Herpes simplex	3	0.30	2	0.15	<0.05	5	0.45
Molluscum contagiosa	1	0.05	0	0.00	—	1	0.05
Parasitic infections							
Pediculosis capitis	47	4.7	258	25.85	<0.05	305	30.55
Scabies	9	0.9	37	3.7	<0.05	46	4.60
Allergic diseases							
Papular urticaria	25	2.55	36	3.60	<0.05	62	6.15
Urticaria and angioedema	5	0.55	2	0.20	<0.05	7	0.75
Drug eruptions	4	0.40	3	0.25	<0.05	7	0.65
Hair diseases							
Alopecia areata	13	1.35	12	1.20	<0.05	25	2.55
Traction alopecia	3	0.30	4	0.35	>0.05	7	0.65
Miscellaneous							
Acne	4	0.40	2	0.15	<0.05	6	0.55
Pityriasis rosea	4	0.45	9	0.95	<0.05	13	1.40
Psoriasis	1	0.10	1	0.05	>0.05	2	0.15
Vitiligo	1	0.10	0	0	—	1	0.10

found that boys (78.74%) are highly sensible for dermatological infections than girls (71.47%). This study states that skin diseases were more in rural children (49%) than urban children (26.40%). Chances for spreading of infection in rural populated children are owing to socioeconomic conditions, agricultural requirements, household premises, dealing with animal garbage, illiteracy, lack of awareness, overcrowding, and unclean habits.

On studying the cases according to their causative factors, this study has found that parasitic infestations are the most common skin diseases (35.15%). The percentage of parasitic infestations is high because the elevated rate of affection with pediculosis capitis (30.55%), especially among the

girls (27.05%). It is more common in girls than boys (3.50%). In some epidemiological studies performed in elementary schools, pediculosis capitis was the most frequent skin disorder,^[18,19] and scabies was present in 4.6%.

Eczematous diseases were present in 17% of children. Pityriasis alba was the most common eczematous disease, present in 10.1% of children. In addition, atopic dermatitis represented 3.15% and seborrheic dermatitis 2.6%. Superficial fungal infections represented 3.15% in the current study sample. All the previous studies revealed that tinea capitis was the most common fungal infection in children, which were in agreement with our study where tinea capitis came on the top of the list of fungal infections with a percentage of 2.25%.

Tinea corporis represented a small percentage of the current study (0.45%). In a study done for prevalence of skin condition in primary schoolchildren in Turkey suggested that keratosis pilaris, pityriasis alba, and xerosis were the most common eczematoid condition observed in more than one-tenth of children.^[20]

In the current study, bacterial skin infections percentage was 4.5%. Prevalence of impetigo contagiosa was 3.45%, allergic skin diseases groups represented 7.55%, and papular urticaria was seen in 6.15%. Viral skin infections represented 2.65% of total skin diseases. Viral warts were the most common viral infection 1.2%, followed by chicken pox (0.95%) in the current study. In this study, hair diseases represented 3.2% of all skin diseases. Prevalence of alopecia areata was 2.55% and pityriasis rosea 1.4%.

As regard residential distribution of the studied sample, atopic dermatitis, seborrheic dermatitis, and chicken pox were more common in urban sample of the current study; this may be attributed to the exposure of environmental and industrial pollution, while pityriasis alba, pediculosis, scabies, impetigo, tinea capitis, and papular urticaria were more common in rural sample, which indicates more prevalence of infectious skin diseases and allergic diseases in rural areas as a result of overcrowding, lack of health care and education, defect in personal hygiene, and flaring of mosquitoes and other insects.

Conclusion

It is important to determine the prevalence of skin disorders so that necessary educational programs and preventive measures can be performed. The infectious diseases show relatively high prevalence owing to the poor hygiene of the children and the overcrowding of the classes. Some skin diseases were more common among boys than girls such as pityriasis alba, atopic dermatitis, scabies, impetigo contagiosa, viral warts, herpes simplex, tinea capitis, tinea corporis, pityriasis versicolor, alopecia areata, papular urticaria, drug eruptions, and acne vulgaris. However, other diseases were more common among girls than boys such as pediculosis capitis, contact dermatitis, traction alopecia, and candidiasis. This study provides a baseline for further studies into morbidity and use of health-care services by children with skin disease in the community. Health education and good personal hygiene will definitely help to improve the health status of schoolchildren. School-based health programs should also include education for teachers and students' families about commonly observed skin diseases and their prevention.

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