Prevalence of Skin Diseases among Government Primary School Children in Pulianthope Zone, Chennai, India

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Research Article

Abstract: **Introduction**: Skin diseases are common among school children. The prevalence of skin diseases among children in India range from 8.7% to 35% in school based surveys. Early diagnosis and treatment of skin diseases can decrease the childhood morbidity and their complication. **Objectives**: To find the prevalence of common skin diseases among the primary school children in Government Schools and the factors associated with the skin diseases. **Methods**: A school based cross sectional study was done among Primary School children in 19 Government schools in Pulianthope Zone of Chennai during June to December in 2011. From the 19 schools, 450 children were selected by simple random sampling method. Skin examination was done in the Schools in sunlight and the data was collected from the parents or available family members by home visits. The association between various factors and skin diseases were analyzed by using Chi Square test. **Results**: The study revealed the overall prevalence of skin diseases was 59.3% (95% C.I 54.2% to 63.7%). Pediculosis capitis was the commonest one which contributed 27% (68), followed by Miliaria rubra 21% (53), Impetigo 15 %(38), Pityriasis alba 14% (35), Scabies 11 % (28), Tinea Versicolor 5%(13), Insect bite allergy 4%(10), Viral warts3% (7).There was significant association between Mothers education, Socio economic status, overcrowding, and, Bathing habit and wearing washed clothes and toilet facility in the house. **Conclusion:** Skin diseases constitute a high prevalence in this population in spite of the routine school health programme. Hence regular health checkup should be provided to identify and treat skin diseases. Health education should be given to both teachers and parents regarding skin diseases among the children.

Key words: Prevalence, Primary school, School children, Skin diseases.

Introduction

Skin is the largest body organ provides protective covering to the underlying structures. It is thin and more delicate in children. Skin diseases are commonly seen among school children. [1] The prevalence of skin diseases among children in India range from 8.7% to 35% in school based surveys. [2] Skin manifestations occur due to primary skin diseases or manifestations of systemic diseases. Early diagnosis and prompt treatment of skin diseases decrease the childhood morbidity and their complication. Skin diseases here refer to disorders of exclusively the superficial layers of the skin. Common disorders refer to diseases that occur frequently in the general population (with a prevalence of $\geq$ 1%) or at a primary or peripheral healthcare level, since disorders that are uncommon in some areas may be common in others. [3] The common skin diseases are Pyoderma, used to describe any superficial bacterial skin infection (e.g. impetigo, impetigo contagiosa, folliculitis, "furuncle, carbuncle, tropical ulcer, scabies, and other common ectoparasitoses like Pediculosis capitis, P.corporis, Tinea capitis and other superficial mycoses (dermatophytosis, candidiasis, pityriasis versicolor, etc.); benign viral tumours (verrucae, molluscum contagiosum, etc.), dermatitis – irritative, allergic, or atopic. [3] In India, a hot and humid region in most of the parts, huge population, poor sanitation, poverty, malnutrition, low literacy level, poor public consciousness for cleanliness are the risk factors for skin diseases. So the majority of the population suffers from one or more skin diseases. School survey is a useful parameter to screen large number of children of particular age group for presence of diseases. Children from Government schools are at risk for skin disease due to poverty and lack of personal hygiene etc.

Objectives

To find the prevalence of common skin diseases and the factors associated with the skin diseases among the Primary school children in Government schools of Pulianthope zone in Chennai.

Materials and Methods

A School based Cross- sectional study was conducted in 19 Government Primary Schools in Chennai during June to December in 2011. Chennai is a metropolitan city with the population of 5,008,763 and divided in to ten zones. Among the Ten Zones, Zone 3 (Pulianthope) was chosen randomly by lottery method. The study population was Children studying from I standard to V standard. Children absent on two repeated visits in a week's interval were excluded from the study. Sample size was estimated by conducting the pilot study and estimated sample of 425 were selected by Simple random sampling technique. Pulianthope Zone contains 19 Government Primary Schools and all the schools were given permission to conduct the study. From the 19 Schools, children were selected by Probability Proportionate to sample size. At school level sampling frame was done and children were chosen randomly by random table numbers. Data collection was done after obtaining permission from Institutional Ethical Committee and Headmasters from the schools Children were examined in a separated room in sunlight which was allotted by the school Headmaster/Headmistress. Skin examination was done after removal of the dress by the help of teachers. The investigators were accompanied by a dermatologist for confirmation of skin diseases. The data was obtained from the parents or available family members at the time of home visit by the investigators. The data was collected by using semi structured, standardized, pretested questionnaire in local language from the parents or available family members.

Data Analysis

Data was analyzed by SPSS 18th version. The association between the various factors and Skin diseases were analyzed by Chi Square test and Fisher's Exact Test. A "P" value < 0.05 was considered to be statistically significant.

Results

The age of the children was ranged from 5-11 yrs. The mean age was 8 years and the standard deviation was 1.53.Among them76 (18%) were in the age group of 5-6 years, 170 (40%) were in the age group of 7-8 years, and 179 (42%) were between 9-11 yrs. Regarding Sex 217(51%) were male children and 208 (49%) were female children. Hindus, Muslims and Christians were 204 (48%), 191 (45%) and 30 (7%) respectively. About mothers education, 51 (12%) were illiterate, and 374 (88%) were literate. Majority of children belonged to Upper middle followed by upper lower socio economic class. Around 85% (361) were living in semi pucca house and 15% (64) were living in pucca house. Overcrowding was seen in 92% (391) of houses and 387 (91%) were sharing the same room for sleeping with their family members. Regarding bathing habit, 323 (76%) children had taken bath daily and only 62% (263) of children had worn washed clothes daily. The overall prevalence of skin diseases was 59.3% (252) with 95% confidence interval of 54.2% to 63.7%. Pediculosis capitis was the commonest one which contributed 27% (68), followed by Miliaria rubra 21% (53), Impetigo 15 %(38), Pityriasis alba 14% (35), Scabies11 % (28), Tinea Versicolor 5% (13), Insect bite allergy 4%(10), Viral warts3% (7)The distribution of Individual skin diseases were shown in Fig 1. There was statistically significant association between Mother's education, Socio economic status, overcrowding, bathing, and wearing washed clothes, toilet facility in the house and the skin diseases. Analysis of various factors with skin diseases was shown in Table 1.

Discussion

Out of 425 study subjects, 252 children had skin diseases with the prevalence of 59.3% which was similar to the studies conducted by Ewaldo V Komba et al [4] in Dar es Salaam and RA Valia et al [5] in Varanasi, Vikas Bhatia [6] in Chandigarh where the prevalence was 57.3% and 54%, 51% respectively. Pediculosis capitis showed highest prevalence in this study which was similar to the studies by Libu et al [7] and Vikas Bhatia et al [6], but the same disease showed low prevalence in a study conducted by Rao et al [8] in Mangalore. The prevalence of scabies in this study (8%) was similar to the study by SB Rotti et al [9] in Karnataka where it was 7%. In this study the prevalence of Tinea Versicolor was 4.5% and tinea capitis was 0.2% similar to Sharma NL et al [10] study in Himachal Pradesh. The reason for the low prevalence could be due to lack of rain. Another possible explanation for the low prevalence of dermatophytosis may be due to the fact that the study only looked at those with detectable signs of fungal infection. In this study Viral Warts and Molluscum Contagiosum were the common viral infections similar to the study done by Patel JK et al. [11] The prevalence of skin diseases was high among female children and according to the religion the prevalence was high among Muslim children however there was no significant difference between sex, religion, and the prevalence of skin diseases similar to Ewaldo et al[4] study. Inanir I et al [12] reported the prevalence of skin diseases were significantly high among children with poor socio economic status similarly in this study also high prevalence were seen among children with lower socio economic status. Prevalence of skin diseases was high in children of illiterate mothers and this statistically significant similar to Khalifa KA et al. [13] The prevalence was 62 %(243) among overcrowded houses and 27 %(9) among non overcrowded houses. The difference was found to be highly statistically significant similar to

Sharma et al [10] study among urban school children where overcrowding and poor standard of hygiene of the children are responsible for the high prevalence of skin diseases among children. There was a significant association between the prevalence of skin diseases and the factors like infrequent bathing and wearing of daily washed clothes. Similarly, Amin TT et al [14] also found a significant association between infrequent washing of clothes and infrequent bathing with soap in their study.

Conclusion

Adequate attention and periodic health checkup should be provided to identify the skin diseases. Parents and teachers are not giving much importance to skin diseases because they thought that skin diseases are benign and it will resolve in the course of time. Regular health education should be given to both teachers and parents regarding skin diseases among the children.

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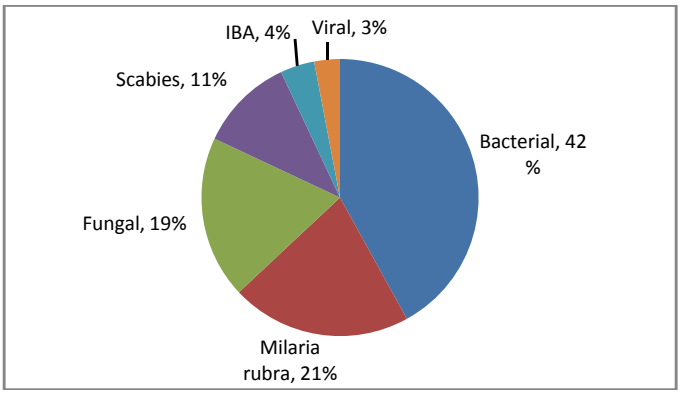

Figure 1: Prevalence of skin diseases

Table 1: Analysis of variables with Skin diseases

Sr. No.	Variables		Skin diseases		Chi Square (χ^2 Test)	p value
			Yes (N= 252)	No (N= 173)		
1	Age	5-6 yrs	45(58%)	32(42%)	0.422	0.81
		7-8 yrs	104(61%)	65(39%)		
		9-11 yrs	103(58%)	76 (42%)		
2	Sex	Male	124(58%)	93(42%)	0.473	0.49
		Female	128(61%)	80 (39%)		
3	Religion	Hindus	126(59%)	78(41%)	1.26	0.53
		Muslims	117(61%)	74(39%)		
		Christians	9(47%)	21(53%)		
4	Mothers Education	Illiterate	39 (94%)	12(%)	74.30	0.0001*
		Primary School	164(73%)	57(%)		
		High School	40(29%)	90(%)		
		Others	9(26%)	14(%)		
5	Socio Economic Status	lower middle	243(62%)	149(38%)	22.8	0.0001*
		upper lower	9 (17%)	24(83%)		
6	Type of house	pucca	33(51%)	31(49%)	1.77	0.18
		Semipucca	219(61%)	142 (39%)		
7	Overcrowding	yes	243(62%)	148(38%)	16.49	0.0001*
		no	9(27%)	25(73%)		
8	Bath daily	yes	173(54%)	150 (46%)	13.57	0.0001*
		no	79(75%)	23 (25%)		
9	Wear washed clothes	Daily	130(49%)	133(51%)	27.81	0.0001*
		Not Daily	122(75%)	40(25%)		
10	Skin diseases in family	present	1(20%)	4(80%)	3.84	0.14
		absent	215(61%)	140(39%)		
		Don't Know	36(55%)	29(45%)		
11	Toilet Facility	Yes	32(40%)	48(60%)	15.2	0.0001*
		No	220(64%)	125(36%)		

* Statistically Significant ($p < 0.01$)