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PREVALENCE OF TINEA AMONG SCHOOL CHILDREN LIVING IN URBAN CHIDAMBARAM AND ITS ASSOCIATED RISK FACTORS: A CROSS SECTIONAL STUDY

Dr. V. Gowtham	MD Community Medicine, Tutor, Govt. Thiruvarur Medical College, Thiruvarur, Tamil Nadu.
Dr. T. Lincy*	Postgraduate, Department of Transfusion Medicine, The Tamil Nadu Dr.M.G.R. Medical University, Tamil Nadu. *Corresponding Author
Dr. S. Kaleeswaran	Diploma in Public Health, Medical Officer, Directorate of Public Health and Preventive Medicine, Chennai, Tamil Nadu.

ABSTRACT

Background: Tinea infection is one of the common contagious human skin diseases. Though all age groups are found to be susceptible to Tinea infection, children are actually at high risk. The study objective was to find out the prevalence and associated risk factors for Tinea among the school children aged 11 to 14 years in Chidambaram. **Methods:** This cross-sectional study was done among 11 to 14 years old school children between the period of October to December 2019 in urban Chidambaram. Data was obtained by using a pretested semi structured questionnaire. Diagnosis of tinea was made by a trained investigator. Collected data was then entered in Microsoft excel and analysed by using SPSS software. **Results:** Prevalence of tinea was found to be 10.3%. Various socio demographic factors, personal hygiene aspects and housing conditions like age of the student, bathing regularly, overcrowding, type of house was found to be statistically associated with tinea. **Conclusions:** Modification of some of the risk factors like overcrowding, type of house, will help in controlling the spread of Tinea.

KEYWORDS : Tinea, Prevalence, Overcrowding, Type of house, Risk factors

INTRODUCTION

Skin disorders are considered a major public health problem. Although skin diseases are common in all age groups, the paediatric population is of major concern. It can result in absenteeism from school or work, loss of confidence, feelings of stigmatization, disruption of social relations, and changes in lifestyle.[1]

In India, the prevalence of paediatric dermatosis ranges from 4.3 to 49.1%. The prevalence of skin disorders among school going children in tropical and developing countries found to be 34 and 87%.[2] Among the skin disorders, tinea is also considered to be one of the major disorder affecting the school going children.

Tinea capitis is a dermatophytic fungal infection of the scalp hairs.[3] Tinea capitis is also termed as ringworm and herpes tonsurans infection.[4] It is primarily caused by the dermatophyte species namely Microsporum and Trichophyton.

Clinically, tinea capitis is classified into inflammatory and non-inflammatory types. The non-inflammatory type is usually not associated with the complication like scarring alopecia. The inflammatory type will cause kerion (painful nodules with pus) and also cause scarring alopecia.[5]

Tinea capitis mostly affects children. Symptoms of tinea capitis are redness, scale formation, itching, and alopecia.[5] Tinea capitis is treatable with systemic antifungal drugs. Griseofulvin is the drug of choice. Tinea capitis actually has a good prognosis when given early and appropriate treatment. Many studies had reported that the socio demographic factors like age, gender, economic status, malnutrition and hygiene play a crucial role in paediatric dermatoses.[6]

The prevalence of skin disorders is one of the indicator of health status and hygiene in the society.[7] Epidemiological studies on skin disorders like Tinea in children will help in effective planning of relevant interventional programs and preventive measures. This can be done quite easily by school surveys, which can be done in shorter period and a large number of children of particular age group can be screened at one point of time for the skin disorders.[8]

Very few studies with similar objective have been conducted in our study area. Moreover, a high enrolment rate in schools implies that information gathered from school children can provide insight into community prevalence in this age group, hence the present study was conducted with an objective of finding out the prevalence of common skin disorders among school going children aged 11 to 14 years in urban Chidambaram and to find out the risk factors associated with the occurrence of common skin disorders.

Subjects and Methods

This cross-sectional study was done among 11 to 14 years of school children in both the government and private schools of urban Chidambaram, for a period of 3 months from October to December 2019.

Among the 33 schools in urban Chidambaram, one government school and one private school were conveniently selected. Permission was obtained from the school principal. All the students in 11 to 14 years of age were included as study participants. Written and oral informed consent was obtained from the parents and study participants respectively. Data was collected using a pretested and modified, semi structured questionnaire. Statistical analyses done by entering data in Microsoft excel and analysed by using SPSS. Ethical approval was obtained from institutional ethics committee of Rajah Muthiah medical college and hospital.

RESULTS

Total number of students enrolled in the study was 350. Among 350 students, 108 (30.9%) had completed 11 years, followed by 106 (30.6%) were 12 years old and 78 (22.3%) were 13 years old. About 215 (61.4%) were males, 175 (50%) studied in government school and 175 (50%) studied in private school. 143 (40.9%) belonged to class 7th and 108 (30.9%) belonged to class 8th. Majority of the students reported that they took bath regularly (96.9%), used soap for bathing (98.3%), used footwear (93.4%) and dried their inner wears and bathing towels under sunlight (95.7%). 41 (11.7%) students reported that they were not washing their clothes regularly. Among 350 students 290 (82.9%) are residing in pucca and semi pucca house and 60 (17.1%) students residing in hut. Overcrowding was found in 34.6% of the study participants.

The prevalence of Tinea was found to be 10.3% in the present study. (Figure 1)

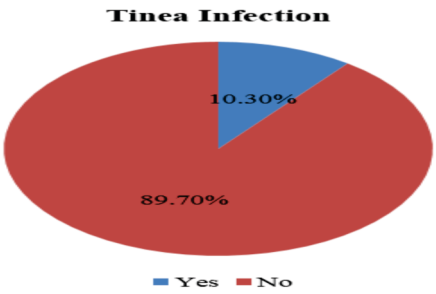

Figure 1: Prevalence of Tinea

Table 1 show the association between prevalence of tinea and selected socio-demographic and personal hygienic variables. A significant association exists between age and prevalence of tinea.

We observed that tinea was prevalent in the age group 11 years. Similarly, there is an association between the class of study, frequency of cloth washing, bathing regularly, using the soap for bathing, and the prevalence of tinea. Gender, type of school, using footwear and drying the towel and underwear in sunlight was not associated with the prevalence of tinea in this study.

Table 1: Association between prevalence of tinea and selected socio-demographic and personal hygienic variables

Variables	Category	Tinea present		Tinea Absent		Chi square	p value
		N	%	N	%		
Age in years	11	3	2.8%	105	97.2%	15.41	<0.001
	12	9	8.5%	97	91.5%		
	13	15	19.2%	63	80.8%		
	14	9	15.5%	49	84.5%		
Gender	Male	24	11.2%	191	88.8%	0.465	0.49
	Female	12	8.9%	123	91.1%		
Class	6th	3	3%	96	97%	8.72	0.013
	7th	21	14.7%	122	85.3%		
	8th	12	11.1%	96	88.9%		
School	Government	16	9.1%	159	90.0%	0.495	0.48
	Private	20	11.4%	155	88.6%		
Bath	Yes	30	8.8%	309	91.2%	24.1 (F)	<0.001
	No	6	55.5%	5	45.5%		
Use soap for bathing	Yes	31	9%	313	91%	35.3 (F)	<0.001
	No	5	83.3%	1	16.7%		
Use Footwear	Yes	33	10.1%	294	89.9%	0.203 (F)	0.65
	No	3	13%	20	87%		
Dry towel and inner wear in sunlight	Yes	34	89.9%	301	89.9%	0.158 (F)	0.691
	No	2	13.3%	13	86.7%		
Dress washed regularly	Yes	26	8.4%	283	91.6%	10.01 (F)	0.002
	No	10	24.4%	31	75.6%		

Table 2 show the association between the prevalence of tinea and housing conditions. There is a significant association between the type of house, overcrowding, family size, cross ventilation, number of rooms in house and number of persons sleeping in the bedroom and prevalence of tinea

Table 2: Association between prevalence of tinea and housing conditions

Variables	Category	Tinea present		Tinea Absent		Chi square	p value
		N	%	N	%		
House type	Hut	11	18.3%	49	81.7%	5.082	0.024
	Others	25	8.6%	265	91.4%		
Family size	>5	29	13.1%	193	86.9%	5.07	0.024
	<5	7	5.5%	121	94.5%		
Toilet in home	Yes	27	9.6%	254	90.4%	0.465	0.49
	No	9	13%	60	87%		
Rooms in home	1	14	22.6%	48	77.4%	12.5	0.002
	2	19	8%	219	92%		
	≥3	3	6%	47	94%		
Persons sleep in bed	≤2	7	3.8%	178	96.2%	18.3 (F)	<0.001
	3	20	16.7%	100	83.3%		
	≥4	9	20%	30	80%		
Cross ventilation	Yes	17	5.8%	274	94.2%	36.9	<0.001
	No	19	32.2%	40	67.8%		
Overcrowding	Yes	22	18.2%	99	81.8%	12.49	<0.001
	No	14	6.1%	215	93.9%		

DISCUSSION

This study was conducted in the schools of urban Chidambaram to find out the prevalence of tinea and its associated risk factors among the school going children aged 11 to 14 years. The present study showed that the prevalence of tinea was 10.3%. Similar results was reported by a study conducted at Kolkata, India (10%).[11]

A study done by Oke et al reported that prevalence of 26.9% among school children in Nigeria.[12] Another study conducted by Ayanlowo[13] et al reported a prevalence of 15.4%. A higher prevalence of tinea was reported by a study done by Josephine Dogo[14] (45%). This difference might be because of the variation in socio- economic characteristics between the study areas.

Our study shows that the infection is seen in male children than female. A study done by Uneke.C et al[15] reported that tinea infections were higher among male students (61%), than the female students (31%).39 Similar findings observed by Vathsala et al[16].

A study by Rachel et al[17] reported that tinea was higher among 10-12 years old children. In comparison with this study, our study showed that the tinea infection is more prevalent in 11 years of age.

Regarding personal hygiene, findings from this study revealed that infrequent washing of clothes, not bathing daily, not using soap for bathing was positively associated with tinea. A similar findings is seen in the study done by Oke et al.,[12] and Rachel et al[17]

A student living in poor housing conditions like overcrowding, no cross ventilation, more number of persons sleeping in bed, increased family size and type of house were found to be at increased risk of getting tinea infection. These findings are comparable to studies conducted by Rachel et al.[17] and Oke et al.,[12]

CONCLUSION

Prevalence of tinea was found to be 10.3%. Age of the student, class of study, frequency of cloth washing, bathing regularly, using the soap for bathing, type of house, cross ventilation, overcrowding, family size, number of rooms in house and number of persons sleeping in the bedroom, and the prevalence of tinea was found to be statistically associated.

Modification of environmental risk factors like overcrowding, type of house, will help in controlling the occurrence of tinea. Health education regarding personal hygiene practises to parents and children will reduce the prevalence of tinea in school children.

Limitations

Being a convenient sample, the generalization of the results has to be carried out with proper care.

REFERENCES

1. Jose G, Vellaisamy S, Govindarajan N, Gopalan K. Prevalence of common dermatoses in school children of rural areas of Salem; a region of South India. Indian J Paediatr Dermatology. 2017;18(3):202.
2. Singh B, Paul IS. Prevalence of non-infectious dermatoses in patients attending a tertiary care center in Rajasthan. Int J Res Dermatology. 2019;5(1):192.
3. Al Aboud AM, Crane JS. Tinea Capitis. [Updated 2022 May 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK536909/
4. Dei-Cas I, Carrizo D, Giri M, Boyne G, Domínguez N, Novello V, Acuña K, Dei-Cas P. Infectious skin disorders encountered in a pediatric emergency department of a tertiary care hospital in Argentina: a descriptive study. Int J Dermatol. 2019 Mar;58(3):288-295.
5. Souissi A, Ben Lagha I, Toukabri N, Mama M, Mokni M. Morse code-like hairs in tinea capitis disappear after successful treatment. Int J Dermatol. 2018 Dec;57(12):e150-e151.
6. Jain S, Barambhe MS, Jain J, Jajoo UN, Pandey N. Prevalence of skin diseases in rural Central India : A community - based , cross - sectional , observational study. 2016;111–5.
7. Karthikeyan K, Thappa DM, Jeevankumar B. Pattern of Pediatric Dermatoses in a Referral Center in South India. Indian Pediatr. 2004;41(4):373–7.
8. Naveen K, Vathsala S, Hanumantharayappa Girisha Y. Skin lesions in school children:A survey from schools in an urban area of south India.IP Indian J Clin Exp Dermatology.2019;5(3):220–4.
9. Park K. Parks textbook of social and preventive medicine. 25th ed. K. Park, editor. pune: M/s Banarsidas Bhanot. 2019;1000.
10. Kadri AM. Iapsms's textbook of community medicine. 1st ed. Rashmi kundapur, editor. New delhi:Jaypee brothers medical publishers. 2019;1221.
11. Kundu D, Mandal L, Sen G. Prevalence of Tinea capitis in school going children in Kolkata, West Bengal. J Nat Sc Biol Med [Internet]. 2012 [cited 2022 Sep 12];3(2):152. Available from: http://www.jnsbm.org/text.asp?2012/3/2/152/101894
12. Oke OO, Onayemi O, Olasode OA, Omisore AG, Oninla OA. The prevalence and pattern of superficial fungal infections among school children in ile-ife, south-western nigeria. Dermatology Research and Practice [Internet]. 2014 [cited 2022 Sep 12];2014:1–7. Available from: http://www.hindawi.com/journals/drp/2014/842917/
13. Ayanlowo O, Akinkugbe A, Oladele R, Balogun M. Prevalence of Tinea capitis infection among primary school children in a rural setting in south-west Nigeria. J Public Health Africa [Internet]. 2014 Mar 17 [cited 2022 Sep 12];5(1). Available from: http://publichealthinafrica.org/index.php/jphia/article/view/349
14. Prevalence of tinea capitis among school children in nok community of kaduna state, nigeria [Internet]. [cited 2022 Sep 12]. Available from: https://www.hindawi.com/journals/jpath/2016/9601717/
15. Uneke C, Ngwu B, Egemba O. School Children In The SouthEastern Nigeria : The Public Health Implications. 2005;4(2):1–7.
16. Naveen K, Vathsala S, Hanumantharayappa Girisha Y. Skin lesions in school children:A survey from schools in an urban area of south India.IP Indian J Clin Exp Dermatology.2019;5(3):220–4.
17. Chikoi R, Nyawale HA, Mghanga FP. Magnitude and associated risk factors of superficial skin fungal infection among primary school children in southern tanzania. Cureus [Internet]. 2018 Jul 18 [cited 2022 Sep 13]; Available from: https://www.cureus.com/articles/12711-magnitude-and-associated-risk-factors-of-superficial-skin-fungal-infection-among-primar y-school-children-in-southern-tanzania