

Original Article

## Prevalence of Dermatoses and Associated Factors Among School Children in Vijayapura, Karnataka

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### ABSTRACT

**Objectives:** The objectives of the study were to determine the prevalence of dermatoses among school children in Vijayapura, Karnataka and to assess the influence of factors on them.

**Materials and Methods:** This prospective cross-sectional study was conducted in private, government, and residential schools in Vijayapura, Karnataka. A questionnaire regarding demographic factors was given to the students, which was to be answered by their parents. All students aged 5–14 years with completed responses to the questionnaire were included. During school visits, height and weight were recorded and the skin, hair, and nails of children were examined. Any dermatoses, if found, were noted. The prevalence of dermatoses in school children was determined and the frequency of various factors was assessed.

**Results:** Among 2272 children, the prevalence of dermatoses was 89.4%. Non-infectious and infectious dermatoses accounted for 97.9% and 9.3%, respectively. Dermatoses were more prevalent in residential schools (92.4%). Non-infectious dermatoses were more prevalent in private schools (98.2%) and infectious dermatoses in government schools (13.5%). Non-infectious dermatoses were associated with good hygiene, no contact with pets, higher socioeconomic status, and overweight students; and infectious dermatoses with poor diet and hygiene, home overcrowding, lower socioeconomic status, and underweight students ( $P < 0.05$ ).

**Conclusion:** The prevalence of non-infectious dermatoses was more than the infectious dermatoses among school children in Vijayapura, Karnataka, which attributes to better education and understanding. Awareness regarding non-infectious dermatoses is important as it can have a significant impact on children if ignored.

**Keywords:** Dermatoses, Prevalence, School children, School survey, Vijayapura

### INTRODUCTION

The school lays down the pillars for the future generation, along with the initial training for the maintenance of a healthy lifestyle.<sup>[1,2]</sup> Proper hygiene practices, along with a nutritious diet; through proper education can go a long way in preventing various communicable and non-communicable diseases. An individual failing to maintain this becomes susceptible to infections, particularly involving the skin.<sup>[1]</sup>

Skin diseases pose a major health problem among individuals of all ages with substantial morbidity.<sup>[3]</sup> Children are common victims of dermatoses as activities at school that involve

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personal contact help in the transmission of infectious diseases. Skin diseases significantly impact the child's social, physical and emotional well-being, which can lead to skipping school, ultimately impact learning.<sup>[4]</sup>

Skin diseases refer to disorders of exclusively (or predominantly) the superficial layers of the skin. In developing countries, low hygienic conditions with difficulty in access to water, climatic conditions, and the presence of overcrowding contribute to the high prevalence and incidence of skin disorders.<sup>[5]</sup> This is usually true when it comes to infectious diseases, which are more prevalent in these countries, whereas non-infectious dermatoses are predominant in the more developed countries.

In most of the regions of India and through the majority of the year, the climate is hot and humid. In addition, the population is vast, many of whom reside in villages or slums, with widespread poverty and malnutrition, poor personal hygiene, low literacy and a lack of public understanding of cleanliness. As a result, skin problems are more common, particularly infections.

Due to better education, awareness, and changing lifestyles, developing countries are now experiencing a reduction in infectious diseases and a rise in non-infectious or non-communicable diseases. School surveys are useful in determining the prevalence of diseases among a large number of children of a particular age group in a given community. The prevalence of skin diseases in children reflects the status of health awareness, availability of healthcare services, hygiene and personal cleanliness of that particular society.<sup>[3]</sup>

This study was conducted to determine the prevalence of skin diseases among primary and secondary school children in Vijayapura, Karnataka and to determine the influence of various factors on them.

## MATERIALS AND METHODS

This prospective cross-sectional study was conducted in private, government, and residential schools in Vijayapura, Karnataka from August 2022 to January 2023. Approval of the Institutional Ethical Committee was taken (BLDE [DU]/IEC/807-C/2022-23). We included students belonging to the age group of 5–14 years, those with completed responses to the questionnaire and those present on the day of the school visits. Students and parents not willing to take the examination were excluded.

Schools were selected at random. Approval was taken from the schools' principal. Two days before the school visits, a semi-structured questionnaire was handed over to the students, which was to be answered by their parents, along with informed consent. It included questions such as address and contact details, monthly income, education, and

occupation of the parents (for determining socioeconomic status by modified Kuppaswamy method<sup>[6]</sup>), number of family members living in the same home, and number of rooms (for determining overcrowding at home by Eurostat criteria<sup>[7]</sup>), presence of pets, dietary habits, hygiene practices followed and immunisation status. The questionnaire has been included, as shown in Supplementary File 1.

On the day of the school visits, the height and weight of every child were measured to calculate basal metabolic index (BMI), weight-for-age, height-for-age, and weight-for-height (plotted on IAP graphs<sup>[8]</sup>) to determine nutritional status. The children were asked questions regarding their diet and hygiene practices and skin, hair, and nails, excluding genitalia, were examined in a private room with good illumination, with the part being examined well exposed. If a skin lesion was found, photographs were taken and findings were documented in a pro forma. Diagnosis of skin lesions was based on clinical features. Conditions whose diagnosis was doubtful and those requiring further investigations were not recorded. The prevalence of dermatoses in school children was determined and the frequency of various factors was assessed.

## Statistical analysis

The data obtained were entered into a Microsoft excel sheet and statistical analysis was performed using JMP Pro 16 software version 16 (SAS Institute). Results are presented as frequency and percentages. The association between categorical variables was compared using the Chi-square test. Statistical significance was deemed when  $P < 0.05$ .

## RESULTS

Three private, two government, and one residential school were included in this study with a total of 2272 students. One thousand two hundred and eleven (53.3%) students were included from private schools, 438 (19.3%) students from government schools and 623 (27.4%) from residential school. The ratio of students aged more than 10 years and those aged <10 years was 1.8 and male-to-female ratio was 2.1. The distribution of various variables among different schools is depicted in Table 1.

A total of 82 dermatoses were diagnosed and grouped as non-infectious and infectious dermatoses. Under non-infectious dermatoses, 70 conditions were grouped into 10 categories and 12 infectious dermatoses were grouped into four categories. Supplementary File 2 contains the list of various dermatoses in each category. Figures 1 and 2 shows images of some of the conditions in each category of non-infectious and infectious dermatoses.

The overall prevalence of dermatoses was 89.4%. Among these, the prevalence of non-infectious and infectious

**Table 1:** Distribution of various variables among different schools (*n*: number of subjects).

Demographic variables	Private school		Government school		Residential school		All schools	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Age								
<10	630	52	181	41.3	0	0	811	35.7
≥10	581	48	257	58.7	623	100	1461	64.3
Gender								
Male	628	51.9	329	75.1	590	94.7	1547	68.1
Female	583	48.1	109	24.9	33	5.3	725	31.9
Good diet	1044	86.2	319	72.8	600	96.3	1963	86.4
Good personal hygiene	1052	86.9	280	63.9	592	95.0	1924	84.7
Presence of household pets	204	16.8	118	26.9	0	0	322	14.2
Overcrowding at home	410	33.9	315	71.9	623	100	1348	59.3
Immunised	989	81.7	388	88.6	566	90.9	1943	85.5
Socioeconomic status								
Upper class	226	18.7	1	0.2	71	11.4	298	13.1
Upper middle class	862	71.2	13	3.0	361	57.9	1236	54.4
Upper lower class	9	0.7	238	54.3	3	0.5	250	11.0
Lower middle class	114	9.4	186	42.5	188	30.2	488	21.5
BMI								
Normal	732	60.4	262	59.8	496	79.6	1490	65.6
Overweight	117	9.7	11	2.5	22	3.5	150	6.6
Underweight	362	29.9	165	37.7	105	16.9	632	27.8
Weight-for-age								
Normal	771	63.7	272	62.1	506	81.2	1549	68.2
Increased	185	15.3	29	6.6	95	15.2	309	13.6
Decreased	255	21.1	137	31.3	22	3.5	414	18.2
Weight-for-height								
Normal	641	52.9	242	55.3	471	75.6	1354	59.6
Increased	223	18.4	31	7.1	50	8.0	304	13.4
Decreased	347	28.7	165	37.7	102	16.4	614	27.0
Height-for-age								
Normal	880	72.7	331	75.6	481	77.2	1692	74.5
Increased	104	8.6	33	7.5	137	22.0	274	12.1
Stunted	227	18.7	74	16.9	5	0.8	306	13.5

BMI: Basal metabolic index

dermatoses was 97.9% and 9.3%, respectively. The residential school had the highest prevalence of dermatoses (92.4%) and non-infectious and infectious dermatoses were most prevalent in private (98.2%) and government (13.5%) schools, respectively. Under non-infectious dermatoses, the most common category of dermatoses was nevi and hamartomas (843; 42.4%), followed by disorders of keratinization (806; 40.5%) and inflammatory dermatoses (750; 37.7%). The three most common categories of infectious dermatoses were fungal infections (69; 36.7%), infestations (58; 30.9%) and viral infections (45; 23.9%). The prevalence of various dermatoses among different categories and schools is shown in Table 2.

#### Associated factors

Dermatoses with associated factors that showed statistical significance ( $P < 0.05$ ) among different schools are shown in Table 3.

## DISCUSSION

In this study, we analysed the prevalence of dermatoses and associated factors among private, government, and residential school children in a semi-urban city in North Karnataka. The prevalence of dermatoses was found to be 89.4% and non-infectious dermatoses (97.9%) were more common than infectious dermatoses (9.3%). This could indicate a rising trend toward non-infectious dermatoses, probably due to increased awareness among the population as more emphasis is made on the prevention of communicable diseases.

Majority of the students belonging to all schools and private schools were aged more than 10 years and were males. Hence most of the dermatoses were found in these categories and showed a significant association. Infestations, in which pediculosis capitis was one of the conditions, show a significant association in females in all, private and government schools.



**Figure 1:** Conditions in each category of non-infectious dermatoses (AMN: Acquired melanocytic nevus).

**Table 2:** Prevalence of various categories of dermatoses among different schools (*n*: number of subjects).

Diseases	Private school		Government school		Residential school		All schools	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
All dermatoses	1061	87.6	394	90	576	92.4	2031	89.4
Non-infectious dermatoses	1042	98.2	384	97.4	560	97.2	1988	97.9
Nevi and hamartomas	448	43	134	34.8	261	46.6	843	42.4
Disorders of keratinization	365	35	245	63.8	196	35	806	40.5
Inflammatory dermatoses	372	35.7	99	25.8	279	49.8	750	37.7
Pigmentary disorders	183	17.6	90	23.4	92	16.4	365	18.4
Scars	89	8.5	56	14.5	88	15.7	233	11.7
Other dermatoses	86	8.3	47	12.2	57	10.2	190	9.6
Papulosquamous disorders	95	9.1	22	5.7	49	8.8	166	8.6
Nail disorders	15	1.4	12	3.1	19	3.3	46	2.3
Hair disorders	17	1.6	0	0	11	2	28	1.4
Congenital anomalies	3	0.3	1	0.2	2	0.4	6	0.3
Infectious dermatoses	61	5.7	53	13.5	74	12.8	188	9.3
Fungal infections	14	22.9	8	15	47	63.5	69	36.7
Infestations	26	42.6	17	32.1	15	20.3	58	30.9
Viral infections	19	31.1	16	30.1	10	13.5	45	23.9
Bacterial infections	6	9.8	14	26.4	5	6.8	25	13.3

Children with poor dietary habits had a significant association with disorders of keratinization, which includes phrynodema, acanthosis nigricans, and xerosis, which are seen in children with improper nutrition. Inflammatory dermatoses included atopic dermatitis and its various manifestations, which showed an association with children following good hygiene practices in all schools and also with those not having contact with pets in all schools and private

schools. This corroborates with the hygiene hypothesis, which is one of the etiologies for atopic dermatitis. Poor hygiene practices were associated with infectious dermatoses and fungal infections in residential school children. Infectious dermatoses and fungal infections were significantly associated with overcrowding at home among all schools, which is known to be a factor in the spread of infections. Students belonging to upper-class socioeconomic status

**Table 3:** Distribution of dermatoses and associated factors with statistical significance ( $P<0.05$ ) among different schools.

Factors	All schools	Private schools	Government schools	Residential school
Age				
<10 years	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> <li>• Disorders of keratinization</li> </ul>	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> </ul>	
≥10 years	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> <li>• Nevi and hamartomas</li> <li>• Inflammatory dermatoses</li> <li>• Papulosquamous disorders</li> <li>• Hair disorders</li> <li>• Other dermatoses</li> <li>• Infectious dermatoses</li> <li>• Fungal infections</li> </ul>	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> <li>• Inflammatory dermatoses</li> <li>• Papulosquamous disorders</li> <li>• Hair disorders</li> <li>• Other dermatoses</li> </ul>		
Gender				
Males	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> <li>• Nevi and hamartomas</li> <li>• Scars</li> <li>• Pigmentary disorders</li> <li>• Nail disorders</li> <li>• Other dermatoses</li> <li>• Fungal infections</li> <li>• Bacterial infections</li> </ul>	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> <li>• Nevi and hamartomas</li> <li>• Scars</li> <li>• Pigmentary disorders</li> <li>• Other dermatoses</li> </ul>		
Females	<ul style="list-style-type: none"> <li>• Papulosquamous disorders</li> <li>• Infestations</li> </ul>	<ul style="list-style-type: none"> <li>• Papulosquamous disorders</li> <li>• Hair disorders</li> <li>• Infestations</li> </ul>	<ul style="list-style-type: none"> <li>• Papulosquamous disorders</li> <li>• Infestations</li> </ul>	<ul style="list-style-type: none"> <li>• Inflammatory dermatoses</li> <li>• Papulosquamous disorders</li> </ul>
Diet				
Good	<ul style="list-style-type: none"> <li>• Nevi and hamartomas</li> </ul>	<ul style="list-style-type: none"> <li>• Nevi and hamartomas</li> </ul>		
Poor	<ul style="list-style-type: none"> <li>• Disorders of keratinization</li> </ul>	<ul style="list-style-type: none"> <li>• Disorders of keratinization</li> <li>• Infectious dermatoses</li> </ul>		
Personal hygiene				
Good	<ul style="list-style-type: none"> <li>• Inflammatory disorders</li> </ul>			
Poor	<ul style="list-style-type: none"> <li>• Disorders of keratinization</li> </ul>	<ul style="list-style-type: none"> <li>• Congenital anomalies</li> </ul>		<ul style="list-style-type: none"> <li>• Hair disorders</li> <li>• Infectious dermatoses</li> <li>• Fungal infections</li> </ul>
Pets				
Yes	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> <li>• Disorders of keratinization</li> </ul>			
No	<ul style="list-style-type: none"> <li>• Inflammatory disorders</li> <li>• Nail disorders</li> <li>• Fungal infections</li> </ul>	<ul style="list-style-type: none"> <li>• Inflammatory disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Other dermatoses</li> </ul>	
Overcrowding at home				
Yes	<ul style="list-style-type: none"> <li>• Scars</li> <li>• Disorders of keratinization</li> <li>• Infectious dermatoses</li> <li>• Fungal infections</li> </ul>		<ul style="list-style-type: none"> <li>• Nevi and hamartomas</li> </ul>	
No			<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> </ul>	
Immunisation status				
Yes	<ul style="list-style-type: none"> <li>• Scars</li> </ul>			<ul style="list-style-type: none"> <li>• Disorders of keratinization</li> </ul>
No	<ul style="list-style-type: none"> <li>• Congenital anomalies</li> <li>• Viral infections</li> </ul>	<ul style="list-style-type: none"> <li>• Viral infections</li> </ul>	<ul style="list-style-type: none"> <li>• Congenital anomalies</li> </ul>	<ul style="list-style-type: none"> <li>• Congenital anomalies</li> </ul>

(Contd...)

**Table 3: (Continued).**

Factors	All schools	Private schools	Government schools	Residential school
Socioeconomic status				
Upper class	<ul style="list-style-type: none"> <li>• Inflammatory dermatoses</li> <li>• Papulosquamous disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Inflammatory dermatoses</li> </ul>		
Upper middle class				
Upper lower class	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> <li>• Disorders of keratinization</li> <li>• Infectious dermatoses</li> <li>• Bacterial infections</li> <li>• Viral infections</li> <li>• Scars</li> </ul>	<ul style="list-style-type: none"> <li>• Disorders of keratinization</li> <li>• Bacterial infections</li> <li>• Fungal infections</li> </ul>	<ul style="list-style-type: none"> <li>• Nevi and hamartomas</li> </ul>	
Lower middle class				
BMI				
Normal	<ul style="list-style-type: none"> <li>• Infectious dermatoses</li> <li>• Fungal infections</li> </ul>			
Overweight	<ul style="list-style-type: none"> <li>• Inflammatory dermatoses</li> <li>• Papulosquamous disorders</li> <li>• Disorders of keratinization</li> <li>• Nail disorders</li> <li>• Other dermatoses</li> </ul>	<ul style="list-style-type: none"> <li>• Papulosquamous disorders</li> <li>• Disorders of keratinization</li> <li>• Other dermatoses</li> </ul>	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> <li>• Papulosquamous disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Inflammatory dermatoses</li> <li>• Papulosquamous disorders</li> <li>• Nail disorders</li> <li>• Other dermatoses</li> </ul>
Underweight	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> <li>• Bacterial infections</li> </ul>	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> </ul>	
Weight-for-age				
Normal				<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> </ul>
Increased	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> <li>• Inflammatory dermatoses</li> <li>• Papulosquamous disorders</li> <li>• Disorders of keratinization</li> </ul>	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> <li>• Disorders of keratinization</li> <li>• Other dermatoses</li> </ul>	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> <li>• Disorders of keratinization</li> </ul>	<ul style="list-style-type: none"> <li>• Inflammatory dermatoses</li> <li>• Papulosquamous disorders</li> </ul>
Decreased	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> <li>• Bacterial infections</li> </ul>	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Bacterial infections</li> </ul>
Weight-for-height				
Normal	<ul style="list-style-type: none"> <li>• Infectious dermatoses</li> <li>• Fungal infections</li> </ul>	<ul style="list-style-type: none"> <li>• Infectious dermatoses</li> </ul>		<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> </ul>
Increased	<ul style="list-style-type: none"> <li>• Inflammatory dermatoses</li> <li>• Papulosquamous disorders</li> <li>• Disorders of keratinization</li> <li>• Other dermatoses</li> </ul>	<ul style="list-style-type: none"> <li>• Disorders of keratinization</li> <li>• Other dermatoses</li> </ul>	<ul style="list-style-type: none"> <li>• Non-infectious dermatoses</li> <li>• Disorders of keratinization</li> </ul>	<ul style="list-style-type: none"> <li>• Papulosquamous disorders</li> <li>• Other dermatoses</li> </ul>
Decreased	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> <li>• Nail disorders</li> <li>• Bacterial infections</li> </ul>	<ul style="list-style-type: none"> <li>• Pigmentary disorders</li> </ul>		<ul style="list-style-type: none"> <li>• Nevi and hamartomas</li> <li>• Nail disorders</li> </ul>
Height-for-age				
Normal				
Increased	<ul style="list-style-type: none"> <li>• Scars</li> <li>• Infestations</li> </ul>	<ul style="list-style-type: none"> <li>• Scars</li> <li>• Disorders of keratinization</li> </ul>		
Stunted			<ul style="list-style-type: none"> <li>• Inflammatory dermatoses</li> <li>• Nail disorders</li> </ul>	

BMI: Basal metabolic index



**Figure 2:** Conditions in each category of infectious dermatoses.

had a significant association with inflammatory dermatoses in all and private schools and papulosquamous disorders in all schools, whereas those belonging to upper lower class show an association with disorders of keratinization and infections, which could be attributed to increased education and awareness among parents and family members, better diet and hygiene practices followed by those of a higher class.

Students who were overweight (increased BMI, weight-for-age, and weight-for-height) were associated with non-infectious dermatoses, inflammatory dermatoses, papulosquamous disorders (association with metabolic syndrome), disorders of keratinization (includes acanthosis nigricans which is a cutaneous manifestation of obesity) and other dermatoses (includes acrochordons and striae which are cutaneous manifestations of obesity).

Similar studies have been conducted in various parts of India and the world among school children and their findings are mentioned in Table 4.<sup>[1,3,4,9-19]</sup> In the studies conducted in India, the prevalence of dermatoses ranged between 15.41% and 75.4%, which was lower than the prevalence in our study (89.4%) and the majority were infectious dermatoses. An exception to this are studies by Nijhawan *et al.*<sup>[9]</sup> and Vora *et al.*<sup>[14]</sup> conducted in Jaipur and Anand, Gujarat, respectively, where non-infectious dermatoses were more common (69.7% and 79.6%, respectively). Non-infectious dermatoses in our study had a prevalence of 97.9%. This higher prevalence in their studies was attributed to individuals being residents of semi-urban areas and belonging to a higher socioeconomic status. Vijayapura, the location of our study, is also a semi-urban area and the majority of the students belonged to families of the upper middle class. The prevalence of infectious dermatoses was higher in other parts of the world as well, but studies done by Sula *et al.*<sup>[18]</sup> in Diyarbakir, Turkey and Khalifa *et al.*<sup>[19]</sup> in Baghdad found non-infectious dermatoses to be more prevalent. The former study demonstrated an association with the female gender and showed a predominance of infectious dermatoses in boarding schools, whereas the latter study found an association with

parents' education. Our study found a predominance of infectious dermatoses in students of government schools.

The prevalence of skin diseases in children helps give a rough idea about the diseases prevalent in the population of that area. This will help bring about necessary changes in the habits and practices of society for preventing these diseases by establishing relevant educational programs and raising awareness.<sup>[3]</sup>

The population should be encouraged to take appropriate help and consultation when required as ignorance can increase morbidity, which has a higher impact on children as this is the prime age for mental and physical growth and development. School check-ups are a medium whereby the students and their parents can be kept informed about the conditions affecting the children, whether benign or otherwise, and encourage them to take necessary help if required or to be given appropriate counsel.

#### Limitations of the study

Since this is a cross-sectional study that could not cover all the schools in the area, the prevalence of dermatoses may have been underestimated as diseases of short duration (e.g., varicella) could have been missed and the aftermath of those diseases was recorded under another category (e.g. post-varicella pigmentation mentioned under disorders of pigmentation). The questionnaire answered by the parents included parameters such as personal hygiene, which may have been fabricated to make it socially desirable due to fear of stigma against the child. Most of the students were examined in the winter months (December 2022 to January 2023), during which conditions such as xerosis and keratolysis exfoliativa were recorded the most, increasing the number of cases included under the category disorders of keratinization. The prevalence of dermatoses in school children calculated in this study is only a reflection of the overall prevalence and further studies involving a larger population should be conducted to determine the actual prevalence for a better understanding of what is needed to improve the health of society.

**Table 4:** Prevalence of dermatoses in school children from studies conducted in different parts of India and the world.

Study	Year	Location	Prevalence	Most common disease	Other comments
<b>Indian studies</b>					
Nijhawan <i>et al.</i> <sup>[9]</sup>	2019	Jaipur	60.59%	Non-infectious dermatoses – 69.7% Infectious dermatoses – 19.8% Nutritional dermatoses – 10.5%	The study was conducted in a semi-urban area
Shreekrishna and Bhat <sup>[10]</sup>	2018	Mangalore, Dakshina Kannada	55.5%	Fungal infection – 27.5%	Included only infectious dermatoses
Shameena <i>et al.</i> <sup>[11]</sup>	2017	Mulky, Dakshina Kannada	63%	Fungal infection – 26.1%	Included only infectious dermatoses
Jose <i>et al.</i> <sup>[3]</sup>	2017	Salem, Tamil Nadu	68.2%	Infectious dermatoses – 50.73% Non-infectious dermatoses – 37.1% Nutritional deficiency dermatoses – 12.17%	
Kumar <i>et al.</i> <sup>[11]</sup>	2016	Hyderabad, Telangana	29.54%	Scabies – 16.9%	Significant association- Personal hygiene
Villa and Krishna <sup>[12]</sup>	2014–2015	Medak, Telangana	75.4%	Parasitic infections – 35.15%	Association of skin diseases with rural residence
Tulsyan <i>et al.</i> <sup>[13]</sup>	2011	Lucknow	42.3%	Pityriasis alba – 14.3%	Association between transmissible disease and socioeconomic status and education of parents
Vora <i>et al.</i> <sup>[14]</sup>	2006–2010	Anand, Gujarat	15.41%	Non-infectious dermatoses – 79.6% Infectious dermatoses – 18.14% Nutritional deficiency dermatoses – 2.26%	Association of non-infectious dermatoses with semi-urban area and good socioeconomic status
Dogra and Kumar <sup>[15]</sup>	2001	Chandigarh	38.8%	Infections – 11.4%	
<b>International studies</b>					
Mengist Dessie <i>et al.</i> <sup>[4]</sup>	2018	Debre Berhan town, Northern Ethiopia	61.2%	Dandruff – 38.4% Infectious diseases>Non-infectious diseases	Significant association of skin diseases with occupation of father, personal hygiene, previous history of skin diseases, exchange of clothes and towels among family members, not a member of health insurance
El-Khateeb <i>et al.</i> <sup>[16]</sup>	2011–2012	Damietta, Egypt	100%	Benign neoplasms – 87%	
El-Dawela <i>et al.</i> <sup>[17]</sup>	2009	Sohag Governorate, Egypt	41.5%	Infectious diseases – 59.1% Non-infectious diseases – 40.9%	Significant risk factors- Rural residency, older age, females, overcrowding, low socioeconomic status
Sula <i>et al.</i> <sup>[18]</sup>	2008	Diyarbakir, Turkey	59.1%	Eczema – 32.8% Non-infectious diseases>Infectious diseases	Significant association- Non-infectious diseases in females, Infectious diseases in boarding schools
Khalifa <i>et al.</i> <sup>[19]</sup>	2004	Baghdad	40.9%	Non-transmissible diseases – 33.7% Transmissible diseases – 8.8%	Significant association of diseases with parents' education

## CONCLUSION

The prevalence of dermatoses in school children in a semi-urban city in North Karnataka, India, was found to be 89.4%, with a predominance of non-infectious dermatoses, which were significantly associated with better hygiene practices, no contact with household pets, higher socioeconomic status, and overweight students. Infectious dermatoses were less prevalent and associated with poor diet and hygiene practices, overcrowding at homes, lower socioeconomic status, and underweight children. Multiple health awareness and education programs are present for the prevention of infectious diseases, which have proven to be very effective. Similarly, awareness should be raised regarding non-infectious diseases and the population should be trained to detect such conditions and encouraged to take appropriate help when required.

### Ethical approval

The author(s) declare that they have taken the ethical approval from IEC (BLDE [DU]/IEC/807-C/2022-23).

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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### Conflicts of interest

There are no conflicts of interest.

### Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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