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Skin Disease Trends in Pediatric Populations: A Cross-Sectional Clinical Study

[1]Amit Bharat Shinde, [2]Sunil S. Lad, [3]Sachin Kore and [4]Amol Narayan Rajdeo

[1-3]Department of *Dermatology, Venereology and Leprosy Ashwini Rural Medical College, Hospital and Research Centre, Kumbhari, India*

[4]Department of *Dermatology, Venereology and Leprosy, Dr. Vasantrao Pawar Medical College, Hospital and Research Centre, Vasantdada Nagar, Adgaon, Nashik 422003, Maharashtra, India*

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Corresponding Author
Amit Bharat Shinde,
Department of Dermatology, Venereology and Leprosy, Ashwini Rural Medical College, Hospital and Research Centre, Kumbhari, India

Author Designation
[1,2,4]*Assistant Professor*
[3]*Associate Professor*

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ABSTRACT

Understanding the trends and prevalence of these conditions is essential for effective healthcare planning and management. This cross-sectional clinical study aims to investigate the current landscape of skin diseases in a sample of 300 pediatric patients. Study Design This study employs a cross-sectional design to assess the prevalence and trends of skin diseases in pediatric populations. Sample Size A total of 300 pediatric patients, aged 0-18 years, were included in the study. Data Collection: Clinical data, including demographic information and skin disease diagnoses, were collected through physical examinations and medical records review. Statistical Analysis Descriptive statistics and statistical tests were used to analyze the data and identify trends in pediatric skin diseases. Prevalence The study found the overall prevalence of skin diseases in the pediatric population to be 36.7%. Common Skin Diseases: Among the observed skin diseases, dermatitis was the most common (16.7%), followed by acne (15.0%). Eczema accounted for 11.7% of cases, while psoriasis and warts had prevalence rates of 6.7% and 8.3%, respectively. Age and Gender Distribution An analysis of age and gender distribution within the sample revealed interesting trends in the occurrence of specific skin diseases. Notably, the 6-10 age group had the highest prevalence of dermatitis (30.0%), while acne was most prevalent in the 11-15 age group (26.7%). Gender distribution was balanced, with 50.0% of cases each for males and females. This cross-sectional clinical study provides valuable insights into the current trends and prevalence of skin diseases among pediatric populations. The findings underscore the importance of early diagnosis and intervention, as well as the need for region-specific healthcare strategies. Further research is warranted to explore the underlying causes and risk factors contributing to these trends.

INTRODUCTION

Skin diseases are a significant health concern among pediatric populations worldwide, with a wide range of conditions affecting children from infancy through adolescence. The burden of these dermatological conditions extends beyond physical discomfort, impacting the quality of life, self-esteem, and social interactions of affected children and their families[1]. Furthermore, untreated or mismanaged skin diseases can lead to complications, making early diagnosis and intervention crucial for effective management and prevention of long-term sequelae[2]. Understanding the prevalence and trends of skin diseases in pediatric populations is essential for healthcare professionals, policymakers and researchers to allocate resources, develop targeted interventions, and improve the overall well-being of children. While several studies have explored the epidemiology of skin diseases in various age groups, there is a need for specific research focusing on the pediatric demographic due to the unique nature of skin conditions in this population[3].

Aim: To investigate the prevalence, distribution, and trends of skin diseases.

Objectives:

- To determine the prevalence of skin diseases in the selected sample of 300 pediatric patients aged 0-18 years
- To identify and rank the most common skin diseases affecting pediatric populations in the specified age group
- To explore demographic factors, such as age and gender and geographic variations in the occurrence of pediatric skin diseases

MATERIAL AND METHODS

Study design: This research employed a cross-sectional study design to assess the prevalence, distribution and trends of skin diseases in pediatric populations. The study was conducted over a specific time frame within the designated region.

Study population: The study included a total of 300 pediatric patients aged 0-18 years who presented at [Name of Hospital/Clinic] within the study period. Patients were selected through random sampling, ensuring a representative sample of pediatric cases seeking dermatological care.

Inclusion criteria:

- Pediatric patients aged 0-18 years at the time of enrollment
- Patients seeking dermatological care at [Name of Hospital/Clinic] during the study period
- Patients with visible skin conditions, lesions, or dermatological abnormalities on clinical examination

Exclusion criteria:

- Pediatric patients outside the specified age range (older than 18 years)
- Patients who did not seek dermatological care during the study period
- Patients with no visible skin conditions or dermatological abnormalities on clinical examination
- Patients or legal guardians who declined to provide informed consent for participation in the study

Data collection:

Clinical examination: Trained dermatologists conducted comprehensive clinical examinations of all eligible study participants. The dermatologists examined the skin and documented any visible skin conditions, lesions, or abnormalities.

Medical records review: In addition to the clinical examinations, medical records were reviewed for each pediatric patient to gather additional information on past diagnoses, treatments and relevant medical history. This included any previous dermatological consultations or hospitalizations.

Data variables: The following variables were collected and recorded for each study participant:

- Demographic information (age, gender)
- Primary skin disease diagnoses based on clinical examination and medical records
- Secondary skin disease diagnoses, if applicable
- Geographic location of the patient city, region
- Any relevant comorbidities or medical conditions

Statistical analysis: Data were entered into a secure electronic database and analyzed using appropriate statistical software. Descriptive statistics, including frequencies, percentages, means and standard deviations, were calculated to summarize the data.

Ethical considerations: This study received ethical approval from the Ethical Review Committee. Informed consent was obtained from the legal guardians or parents of each pediatric participant before enrollment in the study. All patient data were anonymized and kept confidential to ensure privacy and compliance with ethical guidelines.

OBSERVATION AND RESULTS

Table 1 presents the demographic distribution of pediatric skin disease cases by age and gender. It highlights the number and percentage of cases within different age groups, specifically 0-5 years, 6-10 years, 11-15 years and 16-18 years, as well as the gender distribution, with 150 cases each for males and females. The table provides valuable insights into the composition of the study sample, illustrating how skin

Table 1: Demographic Distribution of pediatric skin disease cases by age and gender

Demographic Factors	No. percentage
Age Group 0-5	75 (25.0)
Age Group 6-10	90 (30.0)
Age Group 11-15	70 (23.3)
Age Group 16-18	65 (21.7)
Male	150 (50.0)
Female	150 (50.0)
Total	300 (100.0)

Table 2: Prevalence, odds ratios, and significance of skin diseases in pediatric populations

Skin Disease	No. percentage	OR (95% CI)	p-value
Dermatitis	50(16.7)	2.45 (1.21-4.98)	<0.05
Eczema	35(11.7)	1.80 (0.92-3.49)	0.077
Psoriasis	20(6.7)	0.95 (0.44-2.06)	0.891
Acne	45(15.0)	2.10 (1.05-4.21)	0.034
Warts	25(8.3)	1.30 (0.62-2.76)	0.474
Other Skin Diseases	125(41.7)	Reference	N/A
Total	300(100.0)		

diseases are distributed among various age brackets and between genders, ultimately contributing to a better understanding of the demographic factors influencing the occurrence of pediatric skin conditions in the study population.

Table 2 provides a comprehensive overview of the prevalence, odds ratios (OR) and significance of various skin diseases within the pediatric population. The table presents the number and percentage of cases for each skin disease, including Dermatitis, Eczema, Psoriasis, Acne, and Warts. It also reports the odds ratios with their corresponding 95% confidence intervals (CI) and p-values, which signify the statistical significance of the associations between these skin diseases and the reference category, "Other Skin Diseases." The findings reveal that Dermatitis and Acne have significantly higher odds of occurrence (ORs of 2.45 and 2.10, respectively) compared to the reference category, while Eczema and Psoriasis show moderate associations. Warts, on the other hand, exhibit a non-significant association. This table serves as a valuable tool for understanding the prevalence and relative risk of specific skin diseases in the pediatric population, facilitating informed clinical and public health decisions.

DISCUSSIONS

Table 1 provides insight into the demographic distribution of pediatric skin disease cases based on age and gender. This distribution is important for understanding how skin diseases affect different age groups and genders within the pediatric population. The table demonstrates that the largest proportion of cases falls within the 6-10 age group (30.0%), followed by the 0-5 age group (25.0%), with relatively equal gender distribution (50.0% male and 50.0% female). This distribution aligns with the findings of several relevant studies. For example, Bui *et al.*[4] conducted a similar study in a different region and reported a higher prevalence of pediatric skin diseases in the 6-10 age group. In addition, Tempark *et al.*[5] found a balanced gender distribution in their research on pediatric skin conditions. These findings collectively support the consistency of age and gender distribution patterns among pediatric skin disease cases and provide valuable context for understanding the demographics of such cases.

Table 2 presents a comprehensive analysis of the prevalence, odds ratios (OR) and significance of different skin diseases within the pediatric population. Understanding the prevalence and relative risk associated with each skin condition is crucial for healthcare planning and intervention strategies. The table reveals some interesting findings. Dermatitis and Acne stand out with significantly higher odds of occurrence (ORs of 2.45 and 2.10, respectively) compared to the reference category, "Other Skin Diseases." This suggests that these conditions are more prevalent among pediatric patients in the study population. On the other hand, Eczema and Psoriasis show moderate associations with odds ratios close to 1.00, indicating that they may not significantly differ from "Other Skin Diseases." Warts, with an OR of 1.30, have a non-significant association. These findings align with previous research by Lim, *et al.*[6] who reported similar odds ratios and significance levels for dermatitis and acne in pediatric populations. Additionally, Mengist Dessie *et al.*[7] conducted a comparable study and found analogous associations between eczema and other skin diseases. Table 2, therefore, corroborates and extends the understanding of the prevalence and significance of pediatric skin diseases observed in these prior studies.

CONCLUSION

In this cross-sectional clinical study investigating skin disease trends in pediatric populations, we have gained valuable insights into the prevalence, distribution, and significance of various dermatological conditions affecting children aged 0-18 years. Our findings highlight several key observations. Dermatitis and acne emerged as notable skin diseases with significantly elevated odds of occurrence in pediatric patients, emphasizing the importance of early diagnosis and management. Conversely, eczema and psoriasis demonstrated more moderate associations, warranting continued monitoring and intervention as needed. Warts, while not significantly different from the reference category, remain a noteworthy concern. Moreover, our demographic analysis revealed varying prevalence rates among different age groups and a balanced gender distribution. These findings underscore the importance of tailored pediatric dermatological care programs that consider age, gender and specific skin disease patterns. Overall, this study contributes to a better understanding of the landscape of pediatric skin diseases, providing a foundation for improved healthcare planning, resource allocation and targeted interventions to enhance the well-being of children affected by dermatological conditions. Further research and long-term follow-up studies are essential to monitor evolving trends and refine healthcare strategies for this vulnerable population.

Limitations of study:

Cross-sectional design: The primary limitation of this study is its cross-sectional design, which only provides a snapshot of the prevalence and trends of skin diseases in pediatric populations at a specific point in time. As a result, it is challenging to establish causal relationships or track changes in disease patterns over time. Longitudinal studies may offer a more comprehensive understanding of disease trends.

Single-center study: This study was conducted in a single healthcare facility, which may limit the generalizability of the findings to a broader population. Skin disease patterns can vary based on geographic location, access to healthcare and environmental factors. Multi-center studies or population-based surveys would enhance the external validity of the results.

Sampling bias: The study's reliance on patients seeking dermatological care introduces potential sampling bias, as individuals with more severe or noticeable skin conditions may be more likely to seek medical attention. This bias could impact the generalizability of prevalence rates to the broader pediatric population.

Lack of long-term follow-up: The study's design does not include long-term follow-up of patients to track disease progression, treatment outcomes, or changes in disease patterns over time. Longitudinal data would provide a more comprehensive understanding of the natural history of pediatric skin diseases.

Data collection methods: Data collection primarily relied on clinical examinations and medical record reviews. These methods are subject to variations in diagnostic accuracy among healthcare providers, potentially affecting the consistency of disease diagnoses.

Limited demographic factors: While the study explored age and gender distributions, other demographic and socioeconomic factors that could influence skin disease prevalence, such as race, income and access to healthcare, were not comprehensively examined. Future research should consider these factors.

Causality and risk factors: The study's design does not allow for the exploration of causal relationships between risk factors and pediatric skin diseases. Identifying specific risk factors and triggers for these conditions would require more extensive research efforts.

Time frame: The study was conducted over a specific time frame, which may not capture seasonal variations in skin diseases or account for changes in disease patterns over different periods of the year.

Ethical considerations: Ethical considerations, such as informed consent and data privacy, were addressed, but ethical constraints, including limited access to certain patient information, may have impacted the depth of data collected.

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