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ORIGINAL ARTICLE

Pattern of skin diseases in patients attending pediatric outdoor patient of a Tertiary Care Hospital of Bahawalpur, Pakistan.

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ABSTRACT... Objective: To determine the pattern of skin diseases among patients visiting the Pediatric outpatient department of tertiary care hospital. **Study Design:** Cross-sectional study. **Setting:** Department of Pediatric Outpatient, Combined Military Hospital, Bahawalpur, Pakistan. **Period:** August 2023 to February 2024. **Methods:** Children up to age of 12 years, attending the outpatient department for skin disorders were included in the study. Consultants with Postgraduate qualifications in Pediatrics made the diagnosis & consultations from Dermatology department were also obtained. **Results:** A total of 300 patients were included in the study, consisting of 60% males and 40% females, with a mean age of 2.29 years (± 1.19 years). The age group distribution indicated that 34% of participants (n=102) were under 1 year of age, while 27.3% (n=82) were between the ages of 6 to 10 years. Infectious diseases and infestations were the most prevalent skin conditions, affecting 66.36% of participants. This was followed by eczema (n=46,15.33%), hypersensitivity (n=22,7.33%), and disorders of sweat and sebaceous glands (n=23,7.66). Among the infections, bacterial infections were the most common (23%), followed by fungal infections (18.33%) and viral infections (6.3%). **Conclusion:** Infections and infestations together constituted 66.36% of the cases. Bacterial infections, along with scabies and fungal infections were the most common disorders observed followed by eczematous disorders. Education regarding good hygiene and proper care can eventually help.

Key words: Candidiasis, Eczema, Cutaneous Diseases, Pediatric Outpatient, Scabies, Skin Disorder.

INTRODUCTION

Cutaneous disorders are common in the pediatric age group. One of the primary reasons for high prevalence of cutaneous diseases is the fact that the skin being the largest organ is exposed to many external environmental factors and is particularly prone to infections specially in Pediatric age group. Dermatological diseases are very common among the young children, as one study reports that more than 65% of children consult a doctor for a skin problem by the age of 5 years.[1]

Every year, 1.9 billion people are affected by dermatological problems making them the fourth most common cause of human diseases worldwide.[2] Global burden of disease study conducted in 2019 suggests that significant morbidity is associated with cutaneous and subcutaneous infections in the pediatric population.[3] The pattern of cutaneous diseases varies from region to region, country to country and even within a country due to ecological factors, social customs, hygienic standards and genetics.

Apart from the discomfort and pain that skin diseases can cause, they also have a significant impact on the economy.[3] In the United States alone, the direct and indirect costs associated with skin diseases are estimated to be around $75 billion annually.[4] This alarming statistic highlights the importance of addressing the prevalence of skin diseases and the need to adopt either preventive methods to decrease the burden or to treat them efficiently so that patients do not present as chronic cases of those particular diseases.

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Skin diseases are influenced by several factors including climate, demographics, environment and literacy level.[2] Poor hygiene and overcrowding are significant factors in developing countries like Pakistan. One of the main contributors to this trend is poor living conditions, especially in rural areas where access to sanitary and clean water and facilities is limited. This, coupled with malnutrition and inadequate healthcare, has led to a high prevalence of diseases such as scabies, eczema, and impetigo among children. Lack of awareness and cultural beliefs also contribute to the persistence of skin diseases, as many parents rely on traditional remedies rather than seeking medical treatment.

It is essential for the government of Pakistan and healthcare organizations to prioritize the management of skin diseases by allocating sufficient resources for the treatment and prevention. This approach will significantly enhance the well-being of children and alleviate the burden on hospitals and psychological stress on patients, which is particularly important given the constraints on resources in Pakistan.[3]

Pattern of disease can be recorded through prevalence studies in population; and the data regarding patterns as well as prevalence collected helps in determining the burden of skin related diseases. Such hospital based studies provide insight into the pattern as well as prevalence of cutaneous disorders in pediatric population.[5]

There is lack of epidemiological data on pediatric cutaneous disorders in our region.[6] To gain insight into prevalence and pattern of cutaneous diseases in children of our hospital in southern Punjab, a study was conducted at Pediatric outpatient department of tertiary care hospital. Aim of study was to know the pattern of skin diseases which will enhance our knowledge of the various cutaneous diseases affecting children in our country and provide data for future research.

METHODS

This was a Cross sectional study conducted at the Pediatrics outpatient department of CMH Bahawalpur, Pakistan from August 2023 to January 2024 after receiving approval from the ERB (Ref.No.107). This study was carried out on children of both genders up to age of 12 years attending Pediatrics outpatient department for skin problems according to the inclusion criteria. Patients with repeat visits, those suffering from chronic illnesses or those with a history of hospitalization in the past 4 months, as well as those who came for follow up after medication were excluded from the study as mentioned in the exclusion criteria.

Initially all the details of the study were explained to the parents of the patients. After this informed consent was obtained from the parents for each case and patient's detailed past history was taken. A thorough examination was done and all relevant data were collected. Consultant with postgraduate qualifications diagnosed all cases and consultation from dermatology was sought as well. The diagnosis was mainly clinical. Several groups were assigned to each disease category such as dermatitis, infections, infestations, eczematous disorders, diseases of hairs and skin glands, diseases affecting nails and the oral cavity and miscellaneous conditions. Eczemas could not be classified any further as patch test was not available.

The data was collected using Google Forms which were then obtained as excel sheets. The collected data was analyzed using Statistical Package for Social Sciences (SPSS) version 25. To analyze the data descriptive statistics were used. Standard deviation and mean calculations were made for quantitative variables such as age. Frequency and percentage calculations were made for qualitative variables like gender and the diagnosis of skin diseases. The p value of less than 0.05 was considered significant.

RESULTS

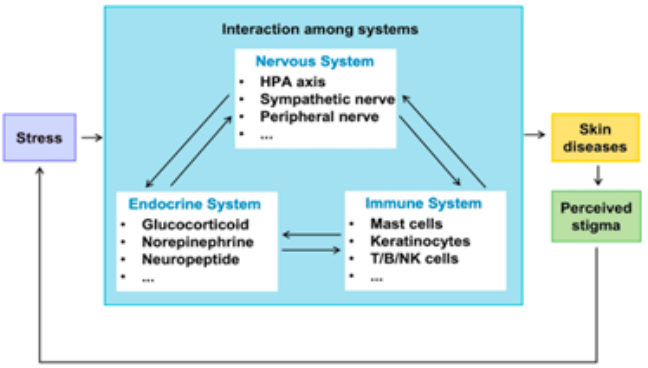
A total of 300 patients were included in the study 180 (60%) children were males and 120 (40%) were female as shown in Table-I.

Mean age of the patients was 2.29+1.19 years with a maximum number of patients in age group <1 years (n=102,34%) and 6-10 years

(n=82,27.3%).

Infectious diseases along with infestations were most common skin condition seen in all age groups (n=199, 63%), followed by eczematous disorders (n=46,15.33%), infestations (n=56,18.7%), disorders of sweat and sebaceous glands (n=23,7.66%), hypersensitivity disorders (n=22,7.33%) pigmentary disorders (n=8, 4%), and nail disorder (n=2,0.72%). Bacterial infections were most common skin disease (n=69, 23%) followed by scabies (n=67,17%). Of infections bacterial infections constituted (n=69, 23%), viral infection (6.33%, n=19) and fungal infections (18.33%, n=55). Among bacterial infections most commonly seen diseases include impetigo (n=46,15.3%), folliculitis (n=9,3%), furunculosis (n=4,1.3%) and skin abscess (n=10,3.3%). Amongst viral infection most common skin disease was herpetic gingivostomatitis (n=11, 3.7%) followed by viral exanthem (n=5, 1.7%), and varicella (n=3,1%). Of fungal infections most common skin condition was candidiasis (n=27,9%), dermatophyte infection (n=24,8%), onychomycosis (n=2,0.7%), and pityriasis versicolor (n=2,0.7%). Most common presentation was itching which was present in 21.6% patients.

Annexure 1:



Age	Gender		Total
	Male	Female	
<1 year	n=55(18.33%)	n=47(15.66%)	n=102,34%
1-5year	n=40(13.33%)	n=22(7.33%)	n=62,20.7%
6-10year	n=48(16%)	n=34(11.33%)	n=82,27.3%
11-12year	n=37(12.33%)	n=17(5.66%)	n=54,18.33%
Total	180(60%)	120(40%)	n=300(100%)
Age	**Gender**		**Total**
	Male	**Female**	
<1 year	n=55(18.33%)	n=47(15.66%)	n=102,34%
1-5year	n=40(13.33%)	n=22(7.33%)	n=62,20.7%
6-10year	n=48(16%)	n=34(11.33%)	n=82,27.3%
11-12year	n=37(12.33%)	n=17(5.66%)	n=54,18.33%
Total	180(60%)	120(40%)	n=300(100%)

Table-I

Disease Group	Number (Percentage)	Diseases	Gender		Total (n%)
			Male	Female	
Infections	143(47.66%)	Bacterial infections	43(14.3%)	26(8.6%)	69(23%)
		Fungal infections	33(11%)	22(7.33%)	55(18.33%)
		Viral infections	11(3.6%)	8(2.66%)	19(6.3%)
Eczematous Disorders	46(15.33%)	Eczematous disorders	23(7.66%)	23(7.66%)	46(15.33%)
Hypersenstivity disorders	22(7.33%)	Insect bite	10(3.33%)	4(1.33%)	14(4.66%)
		Urticarial	6(2%)	2(0.66%)	8(2.66%)
Infestations	56(18.7%)	Scabies	34(11.3%)	17(5.8%)	67(17%)
		Pediculosis capitis	0(%)	5(1.66%)	5(1.66%)
Sweat and Sebaceous gland disorders	23(7.66%)	Acne	10(3.33%)	5(1.66%)	15(5%)
		Miliria	4(1.33%)	4(1.33%)	8(2.66%)
Total	290(96.6%)		174(58%)	116(38.6%)	290(96.6%)

Table-II

Annexure 2:

DISCUSSION

Cutaneous diseases are an important health problem for our community. Skin of children is very delicate and requires proper attention. This study was significant in that it analyzed the frequency as well as pattern of cutaneous disorders in population visiting Pediatric outpatient department and did not rely on hospital records. Most commonly observed disease groups were infections, eczematous disorders, infestations, sweat gland disorders, hypersensitivity disorders (such as insect bites and urticaria) and pigmentary disorders in descending order as shown in Table-II. This is in concordance with most studies conducted in our country[8,9,10] however, it is to be noted that similar results were observed in most developing countries across the globe[2,12] Skin infections are mostly curable, but some, if left untreated, may lead to serious complications such as nephritis, myocarditis, arthritis and sepsis.[10]

Within the infectious cohort, the most common disorder encountered was bacterial diseases (23%,n=69) which accords with studies done by Nandini Thummalapally et al[13] and R.Pathak et al.[5] The second most common was fungal infections which constituted, (18.33%,n=55) correlating with previously conducted studies.[14] Many authors have suggested that the frequency of fungal infections in pediatric population ranges from 5-18%.[6,11] Fungal infections such as trichophyton and candida are called hidden killers as they once become invasive can cause mortality in children comparable to tuberculosis surpassing the current rates of malaria [Majeed et al,2023].[6] Various studies from Turkey, Middle East and South Asia also list fungal infections among five most common cutaneous diseases.[15,16]

Third category of diseases belonging to infectious cohort was viral diseases (6.3%,n=19) of which most common was herpetic stomatitis (n=11, 3.7%) which is in concordance with Légeret C et al 17. However a higher prevalence of herpetic stomatitis 40% was reported by Muhaidat et.al.[18]

Most common disease in this study was scabies (n=67, 17%) which concords with findings of Ararsa et al[19], Tunje et al[20] and Germa et al.[21] Scabies, a highly contagious skin condition, occurs in humans due to the burrowing of ectoparasite Sarcoptes scabiei var. hominis resulting in intense itching.[22] In 2017, over 175 million people were estimated to be infested with scabies worldwide 4 Scabies has been recognized as a “neglected tropical disease” (NTD) by the World Health Organization (WHO) over the past decade, and it has an accepted practical system of global diagnostic criteria and is being adopted into integrated programs of mass drug administration for NTDs in field settings.[23] However, there was a higher prevalence of scabies seen in the study by Alexander et al 24 which was 30.6%.

LIMITATIONS

A longer study period would allow for more accurate tracking of changes in skin conditions over time, and could provide valuable insight into any seasonal patterns that may exist. This would also allow for a more thorough analysis of the impact of external environmental factors on skin health. Thus, extending the study period to one year would provide a more comprehensive approach. Awareness among the general public whether through brochures or television ads may play a very important role in decreasing the disease burden. This can be achieved by distributing data regarding preventive factors and

then assessing the outcome of diseases which may lead to a more efficient study plan.

CONCLUSION

During the study period, infections and infestations accounted for 66.3% of patients reporting to our outpatient department. Apart from bacterial infections, the two most commonly encountered diseases were scabies and dermatophyte infections, highlighting significant public health concerns. Proper scabies control in families with any reported case through proper education and treatment may pave a way to decrease its prevalence and prevent recurring cases in the hospitals that already have limited resources. Education on proper personal hygiene practices, such as regular hand washing, showering, and keeping skin clean and dry, can help prevent the spread of skin infections and thus reduce the patient load.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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2	Roman Baber	Study concept, Data collection.	
3	Aamir Habib	Study concept, Methodology, Interpretation.	
4	Huzaifa Usman	Manuscript writing, Data collection.	
5	Sohail Aslam	Literature review, Discussion, Proof reading.	
6	Naila Hamid	Manuscript writing, Literature review.	
7	Mohsin Raza	Manuscript writing, Literature review.	
8	Naeem Ahmad	Manuscript writing, Literature review.	