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A LONGITUDINAL INVESTIGATION OF SKIN ILLNESSES IN YOUNG PATIENTS IN A TERTIARY DERMATOLOGY FACILITY IN PAKISTAN'S PUNJAB PROVINCE

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abstract:

Aim: *The aim of the research was to identify the range of pediatric skin disorders in Pakistan.*

Methods: *Researchers performed prospective hospital-based cross-sectional research at a tertiary referral dermatological clinic during March 2022 and February 2023. Youngsters under the age of 13 who had new skin problems were selected. The majority of diagnoses were made clinically, but if the cause of illness was not medically obvious, additional tests were conducted. Skin problems impact 23-88% of youngsters in Asia's underdeveloped countries. But the range of skin disorders differs by area owing to a variety of causes including genetics, socioeconomics, and the environment.*

Results: *Skin problems impact 23-88% of Asian children in impoverished nations. But the range of skin disorders differs by area owing to a variety of elements involving genetics, socioeconomics, and environmental factors. A whole group of 380 individuals was chosen, with 62 (17.4%) having several skin conditions. Both sexes were impacted equally. The vast majority of skin problems (45.6%, n = 181) were caused by infections and diseases, which was followed by eczematous dermatitis (27.3%, n = 114) and problems with pigmentation (8.5%, n = 34). Fungal infections predominated (51.8%, n = 79) among the total 154 infectious skin illnesses, subsequent to bacterial (31.7%, n = 46) and viral (18.8%, n = 32).*

Conclusion: *Skin infections continue to be the most common reason for dermatological sessions in children but at a lower rate. Inflammatory skin disorders are on the rise, which can be ascribed to better socioeconomic position and the HIV epidemic.*

Keywords: *Skin Problems, Pediatric Skin Disorders, Environmental Factors, Developing Nations, Pakistan.*

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INTRODUCTION:

Skin illnesses impact 23-86% of kids in impoverished African nations, accounting for up to one-third of outpatient visits to Pediatricians and Dermatologists [1]. Skin illnesses, although their prevalence, receive fewer spotlights than illnesses that include malaria, pneumonia, and HIV/AIDS, that produce considerable fatalities [2]. The range of skin illnesses varies depending on where you live. Skin disease patterns have been observed to differ depending to environmental and socioeconomic variables [3]. Eczema is the most common skin illness in affluent countries, while infections and infestations are more common in nations with limited resources [4].

Skin disorders are quite common in underdeveloped nations. These conditions vary from basic acne and scabies to more serious conditions including Stevens-Johnson syndrome, toxic epidermal necrolysis, and purpura fulminans. The distribution of skin disorders differs by nation and even by area throughout a country as a result of environmental variables, genetics, standards of cleanliness, and social practices. Skin disorders may lead to significant morbidity but appear to have a lower fatality rate. It is critical to keep in mind that skin manifestations may provide information on an individual's internal ailment, although research on the recurring nature of skin disorders is limited. Prompt skin illness detection is critical not only for curing individuals but similarly for reducing spread of communicable illnesses. Environmental cleanliness, public education, and adequate diet can all contribute to lower the prevalence of skin problems in every society.

Figure 1

Infections cause 43-85% of all skin disorders in South Asia, and the majority of those illnesses are avoidable. But according to one study, there are evolving patterns in skin problems across South Asians, with a rise in conditions that are inflammatory [5]. In informal research conducted in Pakistan in the 1980s, it was revealed that one-half of those diagnosed having skin illnesses were youngsters under the age of 14, and most of them had illnesses. South Asia has experienced socioeconomic developments during the previous three decades [6]. In a similar way, the accessibility of anti-retroviral medications increased number of persons living with HIV throughout the same time period. As a result, the purpose of our current research was to establish existing spectrum of pediatric skin illnesses in Punjab Pakistan [7].

Though considerable research has been conducted on the distribution of skin disorders in the overall world population, there has been a dearth of such study in poorer nations. The purpose of the current research was to gain insight into frequency and kinds of skin problems that arise in the tertiary care hospital in order to evaluate impact of such illnesses in our setting.

Figure 2:

METHODOLOGY:

Our current research was a cross-sectional done at Mayo Hospital, Lahore Pakistan, which is a tertiary referral center. During March 2022 and February 2023, all children under the age of 16 who presented to the hospital having new skin problems were randomly selected by picking each third child who was enrolled in hospital until the target estimated sample size of 360 was attained.

Every individual had a full medical history and extensive skin tests, and diagnoses were determined based on medical examination. Laboratory tests, skin scraping for fungus, Tzanck smear, LD body smear, slit skin smear, and skin biopsies were similarly performed as needed to validate the original findings. Young one's under the age of 13 were considered minors, while those beyond the age of 16 were regarded adults. Using data from several nations, numerous kinds of skin problems were identified and evaluated. The majority of the diagnoses were made clinically, however necessary laboratory tests or histopathology remained performed in situations where the diagnosis was ambiguous. SPSS version 19 was used to analyze the results, and general statistics were derived. Mayo Hospital in Lahore, Pakistan, received ethical permission for the project.

RESULTS:

Sample A total of 364 kids were chosen for sampling from a total of 1,345 youngsters, having male-to-female ratio of 1:1. The average age was 5.3 years, with the range being 2 weeks to 14.8 years. The bulk of kids (64%) lived in cities. A grand total of 415 skin illnesses were detected in 364 kids, including 59 (17.6%) experiencing multiple skin conditions. Skin infections and infestations were the most prevalent kind of skin illness (45.6%, n = 179). Eczema (29.6%, n = 119) and pigmentary diseases (9.6%, n = 36) are two more prevalent categories displayed in Fig. 1. Tumors were found in seven (2.6%) of the youngsters.

29.17% of children experienced skin infections. In this category, tinea cruris, tinea corporis, tinea pedis, tinea capitis, tinea versicolor, and candida diseases were the most frequently seen types, accounting for 35.86% of cases. It was more common for men to have fungal infections in the adult age group. Herpes simplex, viral warts, herpes zoster, molluscum contagiosum, varicella, and various viral exanthems were among the viral diseases that affected 28.62% of the sufferers. Those who tested positive for the HIV virus made up 0.23% of the population. For 26.29% of the students, bacterial illnesses comprised impetigo, folliculitis, furunculosis, sycosis, cellulitis, and ulcers.

Skin illnesses were more prevalent for kids under the age of five (n = 177, 54.7%), whereas (n = 89, 26.7%) and (n = 76, 23.9%) were found in children aged six to twelve (n = 76, 23.9%). Table 1 shows the frequency of skin disorders across 364 kids. Of all 156 kids who had infections of the skin, 52.8% (n = 79) had bacterial infections, the most common of which was tinea capitis (86.5%, n = 67). Impetigo constituted the most prevalent diagnosis (47.8%, n = 23) for 47 kids who had bacterial illnesses. Furuncles (26.5%), folliculitis (18.7%), and ecthyma (12.5%) were the other most prevalent bacterial illnesses. Scabies had been the only

infestation identified in 28 patients. The vast majority (51.8%, n = 118) of the 232 non-infectious skin illnesses encountered in the present investigation were eczematous dermatitis. The bulk of these eczema participants (95.3%, n = 108) have been identified as having atopic dermatitis. Within the top five non-infectious dermatoses included pigmentary diseases (14.2%, n = 32), urticaria and drug reactions (15.4%, n = 32), and genodermatotic (6.8%, n = 14).

0.91% of those diagnosed had connective tissue disorders, which involved systemic lupus erythematosus, systemic sclerosis, dermatomyositis, localized morphea, and lichen sclerosis et atrophic us. Leukocytoclastic vasculitis, erythema nodosum, pyoderma gangrenosum, Henoch Schoenlein purpura, and Sweet's illness were all observed in 0.67% of individuals.

Our miscellaneous group encompassed 1245 individuals who had hair and nail illnesses, 920 with dermatological manifestations of systemic diseases, 396 with ichthyoses, 315 with naevi, 205 with Geno dermatoses, 31 with sarcoidosis, 26 with cutaneous malignancies, 26 with metabolic dermatological illnesses, and 28 with other conditions of the skin.

HIV testing was performed on 248 (72.6%) of the kids older than 12 months. The rate of HIV infection was 6.9% (n = 16) in this population. The average CD4 count was 638 cells/mm3 which had a 280.28 interquartile range. The HIV-positive youngsters had an average age of 9.5 years. Seven individuals were now receiving anti-retroviral therapy. Flat warts (29.7%, n = 5), common pruritic eruption (29.7%, n = 5), tinea capitis (23.5%, n = 4), Kaposi sarcoma (15.4%, n = 3) and seborrheic dermatitis (16.5%, n = 3) were the skin illnesses found in 15 HIV + children. There wasn't any correlation between HIV status and cutaneous infections (p = 0.439).

Table 1: 416 cutaneous disorders were observed in 364 youngsters visiting a tertiary dermatology center.

Genodermatotic (n = 14, 4.89%)	
Neurofibromatosis	2 (0.6)
Albinism	8 (3.2)
Ichthyosis	2 (0.7)
Xeroderma pigmentosa	3 (0.8)
Others (n = 9, 2.5 %)	
Xerosis	3 (0.98
Keloid	6 (1.6)
Tumors (n = 7, 2.9 %)	
Hemangiomas	3 (0.8)
Kaposi sarcoma	3 (0.8)
Basal cell carcinoma	2 (0.7)

Graph 1:

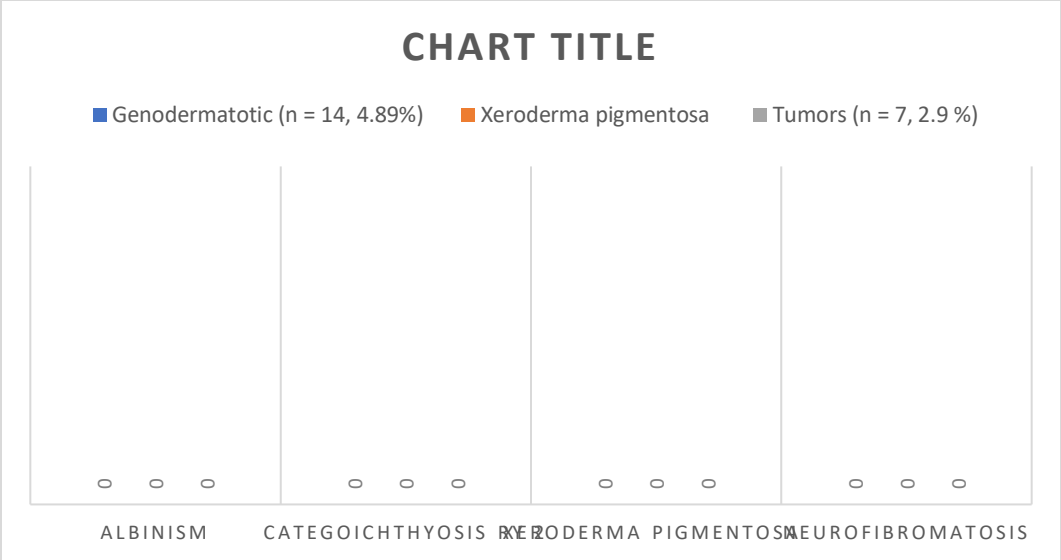
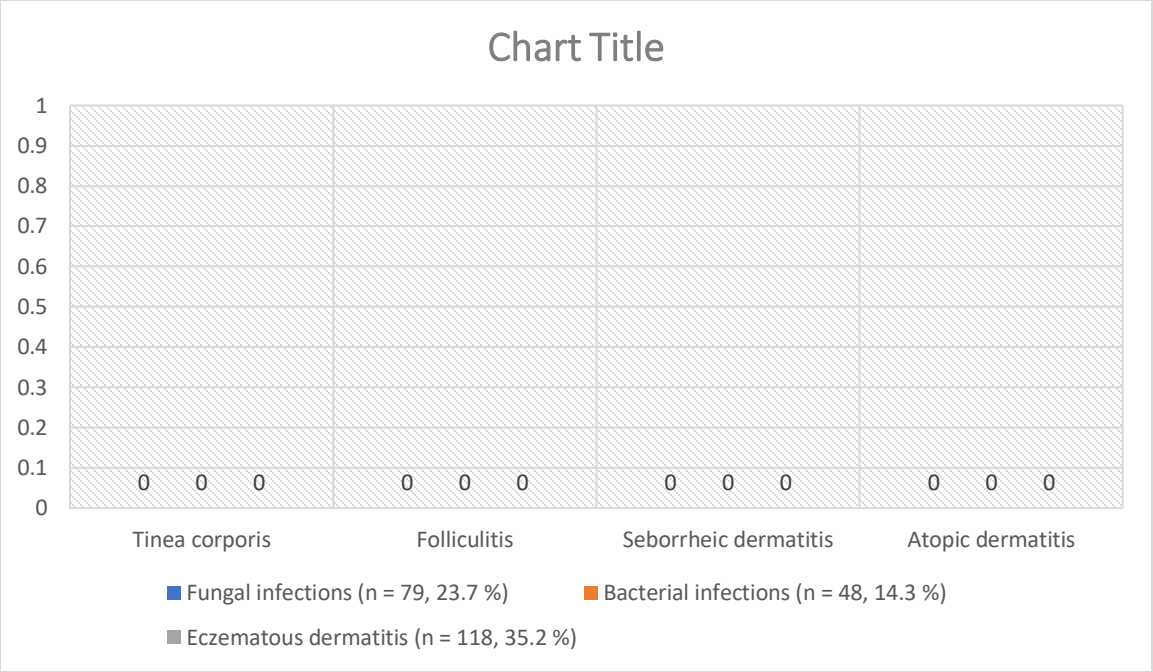


Table 2: The prevalence of 416 cutaneous disorders seen in 364 kids attending a tertiary dermatology clinic

Prevalence	Diseases
Fungal infections (n = 79, 23.7 %)	
Tinea corporis	8 (2.3)
Tinea capitis	66 (18.2)
Tinea cruris	1 (0.4)
Tinea facei	4 (1.3)
Bacterial infections (n = 48, 14.3 %)	
Folliculitis	8 (3.2)
Ecthyma	7 (2.9)
Furuncles	12 (4.3)
Impetigo	21 (4.3)
Eczematous dermatitis (n = 118, 35.2 %)	
Seborrheic dermatitis	3 (0.8)
Seborrheic dermatitis	3 (0.8)
Contact dermatitis	5 (1.6)
Atopic dermatitis	107 (31.6)

Graph 2:



DISCUSSION:

This research was carried out in a secondary referral skin hospital [9]. The outcomes could not have been applicable to other facilities in the region or reflect the full range of disorders in the community. Skin disorders continue to be a leading source of illness in children in South Asia [10-13]. The vast majority of skin illnesses affect youngsters under the age of four. This high incidence might be attributed to decreased resistance or a greater number of hospitals stays by newborns as a result of increased parental care [14]. Skin contaminations are the most common skin disorders affecting kids in the present research, which is comparable to earlier studies in poor countries but differs from those found in wealthy nations [15]. Low socioeconomic position, favorable tropical weather, neglect, and inadequate hygiene have all been blamed for a very high occurrence of diseases and infestations in Asian developing nations [16]. Fungal infections, particularly tinea capitis, are the most common illnesses in people of all ages [17].

This might be owing to the community's widespread practice of sharing shaving machines. The low frequency of viral infections contrasts with previous research that found cutaneous warts to be the most prevalent infective dermatosis. It might be attributable to environmental aspects, HIV co-infection, or ethnic differences in the amount of response to the human papillomavirus [18]. In this investigation, fewer infestations were diagnosed than would be predicted in the population. Community-based analyses conducted in Pakistan at the close of the last century revealed that the incidence of infectious illnesses was as high as 85%, whereas the present research indicates that infections and infestations are still the least mutual set of dermatological conditions observed in the tertiary hospital, although at the lesser frequency [19]. In accordance with the latest research, the only major risk factor related to transmissible illnesses was low socioeconomic level [20]. The change in Asia's social and economic circumstances over the previous three decades could have led to a reduced frequency of infectious illnesses [21]. Henderson estimated the overall incidence of Taeniasis and Pediculosis in rural Pakistan to be 2.6 and 7%, correspondingly. Nevertheless, scabies was the only infestation identified in this investigation [22].

Pediculosis and taeniasis are still prevalent illnesses in Pakistan, however, they are often regarded as medically inconsequential. This research found no instances of Pediculosis. This might be linked to individuals failing to seek medical attention or receiving therapy using traditional local ways. Similarly, similar skin diseases are dealt with in primary care settings and are seldom referred to tertiary care centers.

Following bacterial infections of the skin, the most common category was eczematous dermatitis, that comprises atopic dermatitis, dermatitis caused by contact, seborrheic dermatitis, and nummular eczema [23].

Inflammatory conditions have increased (29.6%) compared to 4% in previous investigations. Nevertheless, the overall incidence of inflammatory disorders remains lower than in industrialized nations, whereas eczematous dermatitis outnumbers skin infections. The results from this research are consistent by an earlier research investigation in India that revealed a shifting trend in skin problems in an Asian population [24].

Pigmentary diseases are more common in older kids whom have grown more worried about their looks. Depigmenting skin problems are more noticeable in those with darker skin. The rise in pigmentary diseases might be attributed to increased aesthetic attention and the chronicity of these problems. Pigmentary illnesses have been shown to have a significant influence on the individual's level of life, particularly in individuals with darker skin. The most recent South African study found that older females were more worried about aesthetic changes in their skin color, notably vitiligo [25].

In the present investigation, drug outbreaks made up 7.75% of cutaneous diseases. The number is greater than in studies from Australia (6.9%) and the United Kingdom (4.7%).5 The significant number of drug reactions in the current research may be attributed to our country's high outright rates of misuse of drugs, quackery, and poor drug use policy, whereas the low figure in the previously mentioned research in the UK can be attributed to the chances of individuals presenting to emergency and medical OPD as opposed to the skin department.

HIV infection is present in 6.9% of kids experiencing skin disorders. A large number of HIV-positive youngsters were diagnosed with inflammatory illnesses and Kaposi's sarcoma. Kids who carry HIV are becoming older and acquiring cutaneous HIV symptoms identical to the adults who have it. Especially relative to research conducted either prior to or during the beginning phases of the HIV pandemic, the spread of HIV is adding to the shifting patterns of skin disorders in Asia [26].

CONCLUSION:

Although urbanization and changing lifestyles in Pakistan, skin infections continue to be the largest cause of morbidity amongst skin disorders, but at less frequently. Inflammatory illnesses, pigmentary disorders, and cancer are becoming more common. Skin problems are becoming more common by the day. Eczema is the most common skin condition, subsequent to skin infections. The distribution of skin problems reflects community development and the quality of accessible health treatment. To minimize referrals to tertiary care facilities, medical professionals and primary health care specialists should get training in detecting and managing common skin problems. This shift might be related to improved socioeconomic position and the HIV epidemic.

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