

Dermatological Diseases among children Attending Al-Yarmouk Teaching Hospital-Outpatient Department of Dermatology

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Abstract

Background: Pediatric age groups are liable for different types of dermatological diseases but very few epidemiological study concentrate upon dermatological diseases in pediatric age group in our locality.

Aim: to determine the pattern of dermatological diseases of both types (infectious and non-infectious) affecting Iraqi children attending Al-Yarmouk Teaching Hospital.

Patients and method An observational cross-sectional study was carried in Al-Yarmouk Teaching Hospital- Outpatient Department of Dermatology, Baghdad, Iraq; registering the new cases of children aged (1-13) years who brought to the department over the period between 12-1-2009 to 12-6-2009 and excluding infants and follow up cases. The included cases were assessed by history dermatological examination and simple investigation (whenever needed) to achieve the diagnosis. Descriptive and analytical statistics were done to obtain the prevalence and relationship of their diseases to age, sex, order of the child in the family, family history of the same illness, hygienic standers and economic status.

Results: Eighty three children included in this study; 37males and 46 females with a male to female ratio of 1:1.24 Their ages ranged from 1-12 years with mean age of 4.8 ± 3.6 SD. Of them 37.3% have non infectious diseases, 32.5% have infectious diseases; and 30.1% have both infectious diseases and non-infectious in the same child. Of the non-infectious diseases eczema was the most common followed by papulosquamus disorders, pigmentary disorders and other diseases. Of the infectious diseases bacterial infection was the most common followed by the viral, the parasitic and then the fungal infections. There was significant association between eczema and family history of the same illness; also significant association was present between parasitic infestation and number of children sharing the same room..

Conclusion: The noninfectious conditions were slightly higher than infectious conditions; of them eczema was the most prevalent while bacterial infection was the most common among infectious conditions. There was significant association between eczema and family history of the same illness; also significant association was present between parasitic infestation and number of children sharing the same room.

Key words: children, dermatological diseases, eczema, infection.

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INTRODUCTION

The incidence of pediatric dermatological problems varies from one part of the world to another.¹ Skin diseases, though very common in many developing countries, are not often regarded as a significant health problem.² Studies carried out among children had indicate that the infective disorders mainly pyoderma

and scabies are major causes for visit to primary health care facility in developing countries. It has been shown in other parts of the world that there is generally poor health seeking behavior in individuals with skin disease.³ This behavior might depend on how severe the ailment is perceived to be and the availability of assistance. Patients with the more severe symptoms are more likely to seek medical attention.¹ The WHO

(World Health Organization) in a workshop in 2004 has advocated for strengthening of community dermatology for developing countries². In Iraq there was a shortage in studies which determine the pattern of skin diseases in pediatric age group; that necessitates this study.

PATIENTS AND METHODS

An observational cross-sectional study was done at outpatient department of dermatology and venereology in Al-Yaremouk teaching hospital at AL-Karkh discrete, Baghdad, Iraq; from 12th of January 2009_12th of June 2009; registering the new cases of children aged (1-13) years who brought to the department over this period and excluding infants and follow up cases. The included cases were divided into three groups: first group were one to five years age, second group from five to nine, third group age of nine to thirteen, including both sexes. Those children were assessed by full history taking including no of children sharing the same room, financial income of the family, as parameters for socioeconomic status and number of bathing times as a parameter for hygienic standers. Clinical examination was done by dermatologist. Diagnosis was mainly done clinically, but if the diagnosis was not clinically clear, further investigations were undertaken accordingly.

Descriptive and analytical statistics were done to obtain the prevalence and relationship of their illnesses to age, sex, order of the child in the family, family history of the same illness, hygienic standers and economic status.

The data was evaluated by statistical program SPSS (Statistical Package for Social Sciences, Chicago, IL, USA) Version 11.0. Frequency tables were used to describe the categorical variables. Chi square test was used, P value < 0.05 considered significant.

RESULT

During the period under review, total patients attending the dermatology department were one thousand and sixteen (1016) patients of them children below thirteen were one hundred fourteen (114) (11.22%); eighty three (83) (72.8%) of them included in the study. Figure 1.

Those children were divided into three groups: first group were one to five years age, second group from five to nine, third group age of nine to thirteen, including both sexes. There were thirty seven (44.6%) males and forty-six (55.4%) females with a male to female ratio of (1: 1.24). The age range was one year to thirteen years with a mean age of 5.0 ± 3.6 years (SD 3.6). Forty-six (55.4%) of the children were 1 – 5 years old, twenty three (27.7%) were 5 – 9 years old and 14 (16.9%) were 9-13 years old. (Table 1). The number of children sharing the same room was one to tow in 22 cases

(26.5%), three to four in 29 (34.9%) cases, and more than four in 32 (38.6%) cases. The mean of children sharing the same room was 3.4 ± 1.3 with arrange of (2-8). (Table 1). The mean family income of this sample was 247.600 ± 157.100 ID. With a range of 10000-1000000ID. (Table 1). Bathing times as an indicator for hygienic standards was once daily in 8 (9.6%) of children, twice a week in 43 (51.8%) of the cases, once a week in 22 (26.5%) and less than that in 10 (12.0%); with a mean number of bathing per month equals to 8.3 ± 7.5 SD and a range of (1-30) times per month. (Table 1). Regarding the type of dermatological diseases among children (37.3%) have non infectious like diseases like eczema, psoriasis, vitiligo and others, (32.5%) of them have infectious diseases like bacterial, viral, fungal and parasitic infections and (30.1%) have both infectious and non infectious disease. That's mean that total infectious conditions would be (62.6%). (Figure 2).

Regarding the infectious diseases; the most common type was the bacterial infections (26.5%) followed by the viral (21.7%), the parasitic (13.3%) and then the fungal infections (10.8%). (Figure 3). On the other hand eczema was the most common presentation among the group with non-infectious diseases (41.0%) followed by papulosquamus disorders (19.3%), vitiligo (9.6%) and other diseases (7.2%). (Figure 4). Viral infection was the most common infection in the first age group (1-5) years being (30.4%) of total infections in that group followed by bacterial infections (26.1%) and then parasitic and fungal (10.9%) each. In the next age group (5-9) bacterial infection was the most common (21.7%) followed by the parasitic (13.0%) on the expense of viral and fungal (8.7%) each. In the last age groups; (9-13); bacterial infection was the most common (35.7%) followed by the parasitic (21.4%) and then the viral and fungal (14.3%) each. The bacterial infection was the most common type of infection among females (32.6%) while the viral infection was the most common type of infection among males (29.7%) however this difference was not statistically significant.

Regarding the relationship between the infectious diseases and the number of children sharing same room there was statistically significant relationship between parasitic infections and the number of children sharing same room (P value = 0.015). There was no statistically significant relationship between infections and the of order child in the family. (P value > 0.05). Positive family history of same illness was more common among children with bacterial infection (30.2%) followed by those with viral infections (18.9%) and then parasitic and fungal (11.3%) each; however this relation was not statistically significant (P value > 0.05).

Most bulk of children who have bacterial skin infection have once a week bathing habit (40.9%), fungal infections appear to be higher among children with the least bathing frequency (once per month) being (20.0%); however there was no statistically significant relationship between infections and the bathing frequency of child. (P value > 0.05) (Table-2).

Regarding the non infectious diseases; eczema was most common among the second age group (5-9) years age (57.1%), while psoriasis was most common among the third age group (9-13) years age (28.6%). Eczema was the most common non infectious diseases in both males and females; (37.8%), (34.5%) respectively. There was no significant relation between non infectious diseases and number of children sharing the same room. (P value > 0.05).

There was no significant relationship between non infectious diseases and the order of the baby in the family. (P value > 0.05). Family history of same illness was positive in (49.1%) of cases of eczema which is a statistically significant relationship. (P value = 0.046).

The frequency of positive family history in papulosquamous disorders and pigmentary was (17.0%) and (7.5%) respectively. There was no statistically significant relationship between non infections and the bathing frequency of the child. (P value > 0.05); although eczema appears to be more common in those with daily bathing habit (62.5%), while papulosquamous were higher in both extremes; the daily bathing and less than once per week bathing children; (37.5%) and (40.0%) respectively. (Table-3).

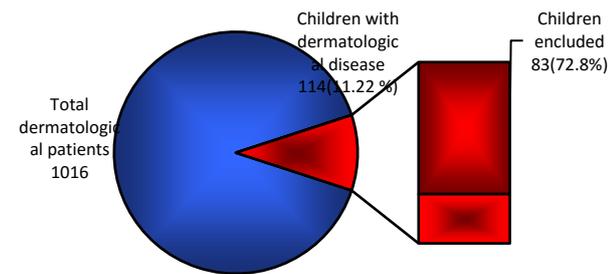


Figure 1: The percentage of children attending the dermatological OPD.

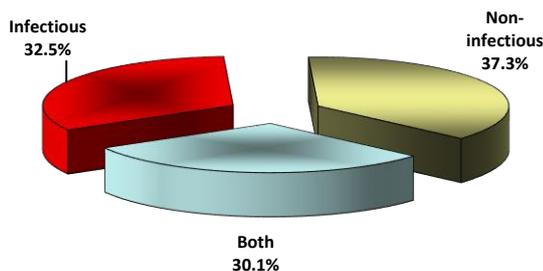


Figure 2: The types of dermatological diseases in children

Table -1: Socio-demographic features of the examined children.

Feature	No	%
Age (years)		
1-5 years	46	55.4%
5-9	23	27.7%
9-13 years	14	16.9%
Mean±SD (Range)	5.0±3.6	1.0-13.0
Sex		
Boy	37	44.6%
Girl	46	55.4%
Number of children sharing same room		
1-2	22	26.5%
3-4	29	34.9%
more than 4	32	38.6%
Mean±SD	3.4±1.3	(Range)2-8
Family income		
Mean±SD (Range)	247.6±157.1 Thousand ID.	100-1000 Thousand ID.
Order in the family		
First	25	30.1%
Second	25	30.1%
Third	9	10.8%
Fourth & higher	24	28.9%
Family history of same illness		
Positive	53	63.9%
Negative	30	36.1%
Bathing times		
Daily	8	9.6%
Twice a week	43	51.8%
Once a week	22	26.5%
Once a month	10	12.0%
Mean±SD (Range)	8.3±7.5	1-30

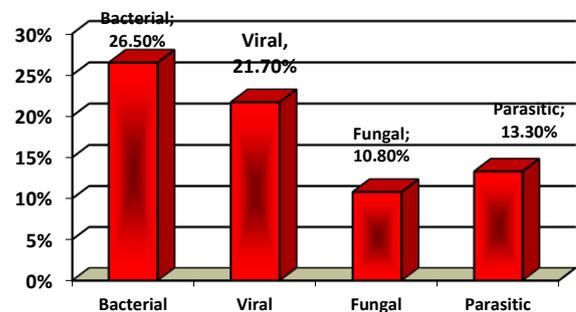


Figure 3: The type of infectious dermatological diseases in children.

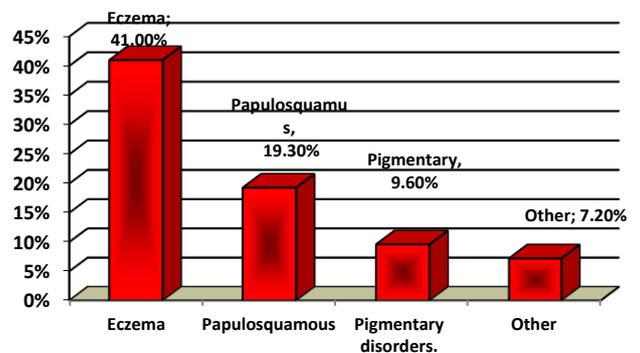


Figure 4: The type of non-infectious dermatological diseases in children.

Table-2: The relation of infectious diseases to other parameters.

	Infectious			
	Bacterial	Viral	Fungal	Parasitic
Age (years):	26.1%	30.4%	10.9%	10.9%
1-5 years	21.7%	8.7%	8.7%	13.0%
5-9	35.7%	14.3%	14.3%	21.4%
P value	0.643	0.090	0.869	0.594
Sex: Male	18.9%	29.7%	13.5%	10.8%
Female	32.6%	15.2%	8.7%	15.2%
P value	0.160	0.111	0.483	0.556
Number of children sharing same room: 1- 2 or less	31.8%	27.3%	9.1%	9.1%
3-4	34.5%	20.7%	6.9%	27.6%
more than 4	15.6%	18.8%	15.6%	3.1%
P value	0.201	0.747	0.524	0.015*
Order in the family: First	28.0%	28.0%	8.0%	20.0%
Second	24.0%	16.0%	16.0%	8.0%
Third	22.2%	11.1%	-	-
Fourth & higher	29.2%	25.0%	12.5%	16.7%
P value	0.964	0.613	0.560	0.361
Family history of same illness: Positive	30.2%	18.9%	11.3%	11.3%
Negative	20.0%	26.7%	10.0%	16.7%
P value	0.312	0.408	0.853	0.490
Bathing times: Daily	25.0%	25.0%	-	-
Twice a week	23.3%	18.6%	11.6%	18.6%
Once a week	40.9%	27.3%	9.1%	13.6%
Less	10.0%	20.0%	20.0%	-
P value	0.263	0.870	0.585	0.281

DISCUSSION

Dermatological diseases are very common problem among children especially in our locality; a matter which has not been studied before. The present study showed that (11.22%) of people consulting the dermatology outpatient clinic were children this percentage could be real but it is most likely to be less than the actual volume of the problem of skin diseases among children (iceberg phenomenon); because of doctor non attending behavior, attending general practitioners, health centers or medical assistant clinics, but most likely because of difficulty in reaching the hospital; however it is still higher than that recorded in nearby countries like Saudi Arabia

where the incidence of pediatric consultations represent (3.4%) of all dermatological consultation⁴, and it is much higher if compared with affluent countries like Netherlands where about 1% of consultations to the general practitioners were for skin diseases⁵. Actually the result is higher even than some African studies like a prevalence survey of 5001 Nigerian children aged 0-12 years which revealed that (9.8%) of them had dermatological conditions⁶.

Regarding the age distribution more than half of the children (55.4%) were the younger children at the age of 1 – 5 years, (27.7%) were 5 – 9 years old and (16.9%) were 9-13 years old; this reflects that the skin conditions are more common in the younger and younger children which could be attributed to the gradual immune built up in childhood, and this coincides with similar findings in resembling studies where children aged 0 – 5 years constituted the majority⁷.

There was slight female preponderance, with a male to female ratio of (1: 1.24); indicating that girls outnumber the boys or they seek medical help more often concerning skin problems which is in accordance with other studies; probably this difference is based on aesthetic reasons^{8,9}.

The study shows that in most cases there were more than four family members sharing the same room. The mean of children sharing the same room was 3.4±1.3 with an average of (2-8). The mean family income of this sample was 247.600 ID. With a range of 100000 -1000000 ID. These findings may reflect poverty and low socio-economic class for population who attend the hospital.

Bathing times as an indicator for hygienic standards was twice a week in more than half of the cases; which could be acceptable for this age group.

Regarding the type of dermatological diseases among children (37.3%) have non-infectious like diseases, (32.5%) of them have infectious diseases and (30.1%) have both infectious and non-infectious disease. That means that total infectious conditions would be (62.6%), indicating that although the non-infectious diseases are slightly higher than the infectious conditions, but still the infection represents an important common skin problem in paediatric age group; similar conclusion was found in nearby countries like Saudi Arabia, developed and some of the developing countries^{4,5,7}.

Regarding the infectious diseases; the most common type was the bacterial followed by the viral, the parasitic and then the fungal infections; a picture that goes with other studies in the developing world where the diagnosis of bacterial infections (pyoderma) was made in most of cases⁷.

On the other hand eczema was the most common presentation among the non infectious diseases followed by papulosquamous diseases, pigmentary disorders, and other diseases. The findings are comparable to what's found in nearby country (Saudi Arabia); where eczema was also the predominant, followed by pigmentary disorders and then papulosquamous diseases.⁴ The predominance of eczema starts to present in a number of developing countries;^{7,10} resembling what's already present in the developed countries.⁵

Viral infection was the most common infection in the first age group (1-5) years followed by bacterial infections and then parasitic and fungal; a condition which could be explained by the early exposure to viruses taking in consideration the close contact that is caused by the domestic overcrowdedness that is noticed in this study; however viral infections were the most common skin infections in children according to studies in nearby countries like Saudi Arabia and Kuwait.^{4,11}

In the next age groups (5-9) and (9-13) bacterial infection was the most common followed by the parasitic on the expense of viral and fungal; and this is expected because of the frequent exposure of non immune young children to the viral infection early in their life which later on will be overcome by bacterial and other infections as they build up their immunity against viral illnesses.

Regarding the relationship between the infectious diseases and the number of children sharing same room there was statistically significant relationship between parasitic infestations and the number of children sharing same room (P value = 0.015); indicating that poverty and domestic overcrowdedness will increase the chance for infestation.

There was no statistically significant relationship between infections and the sex of the child, the order in the family, the positive family history of same illness, or the bathing frequency of the child.

Regarding the non infectious diseases; eczema was the most common among all the three age groups included in the study followed by papulosquamous diseases and then pigmentary disorders. Eczema was the predominant in nearby studies, but it was followed by pigmentary disorders in Saudi Arabia, and by alopecia areata then vitiligo in Kuwait.^{4,11} The high incidence of papulosquamous disorders could be due to the high referral rate of this classic dermatological disease to dermatological outpatient department in attending hospital; however it deserves further studies.

Family history of same illness was positive in (49.1%) of cases of eczema which is a statistically significant

relationship. (P value = 0.046); this finding would be expected when we know that most of the recorded cases of eczema were atopic dermatitis a condition with well known familiar association.¹²

There was no statistically significant relationship between non infections and the sex, order in the family, number of children sharing the same room, bathing frequency of child. (P value > 0.05); although eczema appears to be more common in those with daily bathing habit (62.5%).

Conclusion:

1. Dermatological problems are common among paediatric age groups in Iraq.
2. Non infectious disorders slightly outnumber the infectious skin diseases although the infectious skin diseases still an important problem at paediatric age groups in Iraq.
3. The most common three non infectious dermatological diseases were: eczema followed by papulosquamous disorders and then pigmentary disorders.
4. The overall most common type of infections was bacterial followed by viral, parasitic and then fungal infections.
5. Viral infection was the most common infection in the young children (less than five years age), followed by bacterial and then parasitic and fungal infections, while in older children (more than five years) bacterial infection was the most predominant followed by the parasitic on the expense of viral and fungal.
6. There was statistically significant relationship between parasitic infestations and the number of children sharing same room (P value = 0.015); indicating that poverty and domestic overcrowdedness will increase the chance for infestation.
7. There is significant relationship between eczema and family history of same illness.

Recommendation:

1. Larger epidemiological study about skin diseases in children is required.
2. Development of a dermatology education program for general pediatric doctors in training in order to improve their skills and reduce diagnostic uncertainty.
3. Addition of pediatric dermatology subspecialty would be beneficial.
4. Improvement of socioeconomic status, hygienic standards and education could help for further decrease in infectious diseases among children.

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Table-3: The relation of non-infectious diseases to other parameters.

		Non-infectious			
		Eczema	Papulosquamous	Vitiligo	Other
Age (years):	1-5 years	32.6%	17.4%	10.9%	10.9%
	5-9	47.8%	17.4%	13.0%	4.3%
	9-13 years	57.1%	28.6%	-	-
	P value	0.193	0.627	0.391	0.319
	Sex: Males	37.8%	13.5%	10.8%	8.1%
	Females	43.5%	23.9%	8.7%	6.5%
	P value	0.603	0.233	0.746	0.781
Number of children sharing same room	1- 2	36.4%	31.8%	9.1%	9.1%
	3-4	48.3%	10.3%	10.3%	6.9%
	More than	37.5%	18.8%	9.4%	6.3%
	P value	0.609	0.156	0.987	0.921
Order in the family	First	36.0%	16.0%	12.0%	4.0%
	Second	48.0%	28.0%	12.0%	-
	Third	55.6%	33.3%	11.1%	11.1%
	Fourth & higher	33.3%	8.3%	4.2%	16.7%
	P value	0.545	0.223	0.761	0.126
Family history of same illness	Positive	49.1%	17.0%	7.5%	5.7%
	Negative	26.7%	23.3%	13.3%	10.0%
	P value	0.046*	0.481	0.391	0.463
Bathing times	Daily	62.5%	37.5%	-	12.5%
	Twice a week	46.5%	9.3%	11.6%	4.7%
	Once a week	22.7%	22.7%	9.1%	9.1%
	Less	40.0%	40.0%	10.0%	10.0%
	P value	0.164	0.061	0.787	0.805

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