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Prevalence of Pediculosis in Baquba City, Diyala Province

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Abstract

Background: Pediculosis capitis is an infectious disease caused by an ectoparasite human insect, can be seen with the naked eye, which often causes scalp itching, it is not a dangerous disease but annoying diseases. Pediculosis capitis is an endemic parasitosis affecting many countries of the world ,also it is prevalent in Iraq, often affects the children ,it is an ubiquitous problem in children have high resistance to some pharmacological and non-pharmacological treatments.

Objective: To estimate the prevalence of pediculosis in Baquba city and to determine certain epidemiological criteria related to pediculosis.

Patients and Methods: This cross-section study has been done on 155 patients affected by lice who were visit dermatological clinical out patient in Baquba teaching hospital Diyala, Iraq, from the first of November 2020 to the thirty of August 202, history and physical examination was done by the dermatologist, and a sheet of special questionnaire was used for every patient.

Results: The results show that children less than 10 years were 59(38.06%) out of 155 who were mostly affected. It was more in females, they were 123(79.35%), while males they were 32(20.64%). Girls less than 10 had a higher percentage, 39(25.16%) out of 123 females, than other age groups. People living in urban and rural areas were equally affected; in urban areas they were 73(47.09%) while in rural areas they were 82(52.90%). Pediculosis was highly distributed among students; they were 58(37.41%) out of 155.The most significant symptom of pediculosis was scalp itching people who suffered from itching were 131(84.51%) while people who had no symptom were 24(15.48%). There was no relationship between pediculosis capitis infections and the family size. It was more prevalent in families living in overcrowded homes; they were 76(49.03%) out of 155 who had only two bedrooms. Pediculosis capitis was more common in summer months in April they were 21(15.54%) in May they were 24(16.48%) in June they were 21(15.54%) in July they were 22(14.19%).

Conclusion: Pediculosis were more prevalent among school-age children, so we must spread awareness among the student about how lice are transmitted not to share hair comb or hair clips, also raising awareness of parents about the use of effective and beneficial treatments to eliminate the disease.

Keywords: Pediculosis capitis , Prevalence, School age children , Scalp itching ,Baquba .

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Introduction

Human lice infestation and the fight against it have a history of a thousand years ago; despite that, lice infestation is still a common health problem in our today societies[1].

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The insect are the largest class of Animalia Kingdom. About 80% of the animals in the world belong to insects [2]. Of more than 300 identified lice species, body lice (pediculus humanus corporis), head lice (pediculus humanus capitis) , and crab louse (phthirus pubis) are among the most common human ectoparaites[3]. Peculosis capitusis is an endemic parasitosis affecting many countries of the world. It is the most prevalent ectoparasite worldwide, had a regular community health concern, which affects millions of children. It is a ubiquitous problem in children [4].

Pediculosis capitus is prevalent in both developed and developing countries but more common in developing countries [5]. It remains a huge medical problem throughout the world, making the diagnosis and the treatment of the louse infestation a common task in general medical practice These lice are found in different geographical areas but their prevalence is directly related to the population density, poverty and lack of the principles of personal hygiene, it affect all age group but more common in school age children 6-13 years, girls more than boys due to long hair and social behavior for example, sharing of bed, combs and hair clips[6], and more common in woman than men [7]. The head louse (pediculus humanus capitis) is one of the three types of lice that can infest people; it is an infestation of human hair and scalp. Pediculosis capitis is a hematophagous, wingless ectoparasite incapable of jumping or flying but it's a very contagious condition; they can spread rapidly in close environments, especially in schools. The louse chiefly resident in close contact to humane scalp with an average life span of 30 days; it can survive for up to 3 days out of the host. Theaverage length of the head louse is1-2 mm white to gray has three pairs of clawed leg adapted for clinging to the hair and fiber on the body of the host with a long dorso-ventrally flattened segmented abdomen [8].

Based on a phylogenetic analysis, lice were classified according to four mitochondrial genotypes; clades A (subclades A1, and A2),B, C and D, each with a different geographic distribution [9].Infected with Pediculosis capitus result in significant psychological stress in children and adult and miss schooldays in children, pediculosis elicit a great alarm among adult that is out of proportion to their medical significance, head louse are wide spread throughout the world with prevalent vary across country from less than 1% to well above 50%[10].The resistance to pediculosis has been reported in many regions around the world, for this reason, this ectoparasitosis prevails in the population; another reason for this prevalence is increase traveling and migration In the world [11].

Patients and Methods

Study sample

The sample includes (155) people of both sex, males (32), and females (123), with different age groups from (1-73) years old at Baquba Teaching Hospital.

Setting and time of the study

The study was conducted in Baquba teaching hospital, in Baquba city, Diyala province, Iraq, from first November 2020 to thirty of August 2021, in dermatological outpatients. Patient examine for different dermatological problems.

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Sampling procedures

A cross-sectional study was conducted in Baquba teaching hospital, in Dermatological out patient. Samples were calculated including patients with pediculosis capitus problems who were examined in dermatological outpatients in those periods. Every patient with pediculosis was examined by dermatologists.

Proceeded questionnaire form (Appendix)

Information was taken from the patient or from the parents of the children through the attached questionnaire (interview). And other information was taken from records by seniors in dermatological departments.

Statistical Analysis

Analysis of data was carried out using the SPSS software (Statistical Packages for Social Sciences-version 24). Data were presented in simple measures of frequency, percentage, and range (minimum-maximum values), The significance of difference of different percentages (qualitative data) were tested using Pearson Chi-square test (χ-test) with application of Yate's correction of Fisher Exact test whenever applicable. Statistical significance was considered whenever the P value was equal or less than 0.05.

Results

Table (1) shows the distribution of pediculosis capitis in different age groups .People less than 10 years were 59(38.06%),between 11-20 were 25(16.12%),between 21-30 were 31(20%); between 31-40 were 18(11.06%). Between 41-60 were 18 (11.06%),more than 60 were 4(2.85%). This shows that it is highly significant in children less than 10 years.

Table (1): Distribution of pediculosis capitis among people according to their age

Age	Infected no.	%
>10	59	38.06
11-20	25	16.12
21-30	31	20
31-40	18	11.61
41-60	18	11.61
60<	4	2.58
Total	155	

Table (2) shows the percentage of pediculosis capitis according to the sex, in males were 32(20.64%),while in females were123(79.35%), so it is highly significant in females than males.

Table (2): Distribution of pediculosis capitis among people according to their gender

Gender	Infected no.	%
Male	32	20.64
Female	123	79.35
Total	155	

Table (3) shows the distribution of pediculosis capitis in people according to their age and sex, in males less than 10 years were 20(12.90%), whiles in females less than 10 years were 39(25.16%),in males between 11-20 years were 3(2.58%), while in females between 11-20 were 21(13.54%),in males between 21-30 were 4(1.93%), while in females were 28(18.06%),in males between 31-40 were 2(1.29%),while in females were

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16(10.32%),in males between 41-60 were 2(1.29%), while in females were 16(10.32%),in males more than 60 years were(10.64%) ,while in females were (13.93%). This shows that it is highly significant statistically in females less than 10 years and secondly most significant statistically in females between 21-30.

Table (3): Distribution of pediculosis capitis among people according to their age and gender

Age	Infected male no.	%	Infected female no.	%	P value
>10	20	12.90	39	25.16	0.52
10-20	4	2.58	21	13.54	
21-30	3	1.93	28	18.06	
31-40	2	1.29	16	10.32	
41-60	2	1.29	16	10.32	
60<	1	0.64	3	1.93	
Total	32		123		
* p value associate using Pearson Chi-sequence test at level 0.52					

age * gender Crosstabulation

Age		Gender		Total
		Male	Female	
10>		20	39	59
10-20		4	21	25
21-30		3	28	31
31-40		2	16	18
41-60		2	16	18
<60		1	3	4
Total		32	123	155

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.975[a]	5	.052
Likelihood Ratio	10.985	5	.052
N of Valid Cases	155		
4 cells (33.3%) have expected count less than 5. The minimum expected count is .83. .a			

Table(4) shows the percentage of pediculosis capitis according to the residence; people that live in rural area were 82(52.90%) ,while people that live in urban area were 73(47.09%), this shows no statistical difference.

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Table (4): Distribution of pediculosis capitis among people according to their resistant

Resident	Infected no.	%
Rural	82	52.90
Urban	73	47.09
Total	155	

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Table (5) shows the distribution of pediculosis capitis in people according to their occupation; the children were 29(18.70%), while students were 58(37.41%), employees were 38(24.51%), non-employees were 30(19.35), this shows that it is more common among students.

Table (5): Distribution of pediculosis capitis among people according to their occupation

Occupation	Infected no.	%
Child	29	18.70
Student	58	37.41
Employ	38	24.51
Non-employ	30	19.35
Total	155	

Table (6) shows distribution of pediculosis capitis among people according to their symptom. People with scalp itching were 131(84.51%), while people with no symptom were 24(15.48%), this shows that scalp itching is the most common symptom of pediculosis capitis.

Table (6): Distribution of pediculosis capitis among people according to their symptom

Symptom	Infected no.	%
Scalp itching	131	84.51
No symptom	24	15.48
Total	155	

Table (7) shows the distribution of pediculosis capitis among people according to their family size. In families of 3 members were11(7.09%), in families of 4-5 members were 68(43.87%); in families of 6-7 members were 57(36.77%); in families of 8 members and more were 19(12.25%), this shows no statistical difference.

Table (7): Distribution of pediculosis capitis among people according to their family size

Family size	Infected no.	%
3 member	11	7.09
4-5 member	68	43.87
6-7 member	57	36.77
member 8≤	19	12.25
Total	155	

Table(8) shows the distribution of pediculosis capitis among people according to the number of rooms in their houses. People who lived in houses of 1 room were 13(8.30%); of 2 rooms were 76.(49.03%); those in 3 rooms were 45(29.03%) and those in 4 rooms or more were 21(13.54%). This shows no statistical difference.

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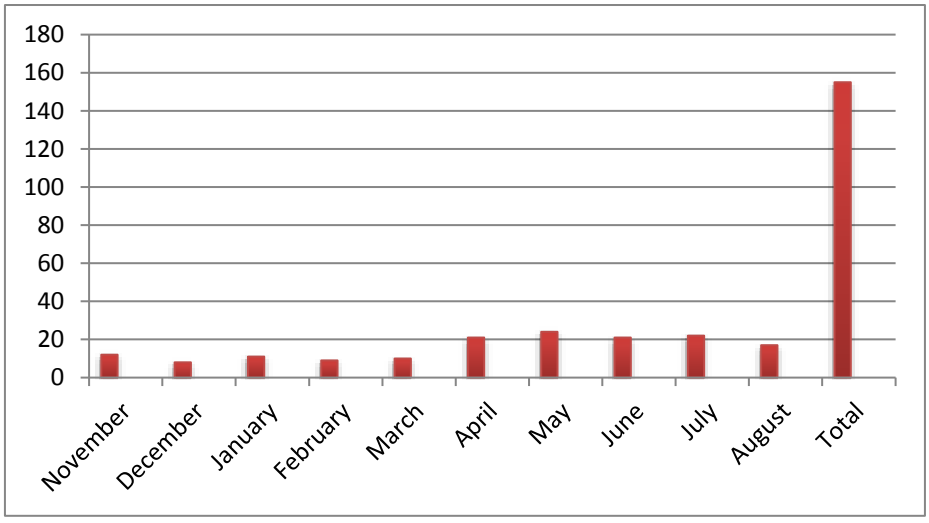
Table (8): Distribution of pediculosis capitis among people according to the number of rooms in their houses

Number of rooms	Infected no.	%
1	13	8.38
2	76	49.03
3	45	29.03
4≤	21	13.54
Total	155	

Table (9) shows the distribution of pediculosis capitis among people according to the months of the year. In November were 12(7.74%); in December were 8 (5.16%); in January were 11(7.09); in February were 9(5.80%); in March were 10(6.45%); in April were 21(13.54%); in May 24(16.48%); in Juan were 21(13.54%); in July were 22(14.19%) and in August were 17(10.96%). This shows that it is more common in summer months.

Table (9): Distribution of pediculosis capitis among people according o the moths of year

Months	Infected no.	%
November	12	7.74
December	8	5.16
January	11	7.09
February	9	5.80
March	10	6.45
April	21	13.54
May	24	16.48
June	21	13.54
July	22	14.19
August	17	10.96
Total	155	



Discussion

In this study, according to the age group, it show that a highly significant statistically distribution of pediculosis capitis among children than adults, and it is agree to the study of Kamiabi and Nakhaei, in Kerman,

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Eastern Mediterranean, which reports that head lice is more common in children[6]. The distribution of pediculosis is significant, more common in females than males. This study is agree to study of Rassami and Soonwera ,in Bangkok, Thailand which reported that lice is common in women than in men. Downs, Stafford and Coles were reported that lice is common in children and mothers, and this study shows that pediculosis capiutis is significant statistically more common in children and mothers[12]. There is no significant relationship between living in rural s and urban areas with head lice infestation. The study is agree to study of Gratz,N.G. which reportted that school-aged children is infected with lice at all socioeconomic levels[13].

This study shows that pediculosis capitis is highly significant statistically among students which is agree to study of Kamiabi and Nakhaei , which reported that lice affected all age groups but more common in school age children between 6-13 years old [6].

Scalp itching is the most significant symptom of pediculosis capitis infestation which this study shows, and it is similar to the study of Malcom and Bergman, who report that scalp itching is the characteristic feature of head louse [14]. The study shows that there is no statistical difference between family size and pediculosis capitis infestation. Pediculosis capitis is common in people that live in over-crowded conditions, which is similar to the study of Nada, El-nadi, and Abu-El Dahab, in Egypt, who report that a higher prevalence of infestation is associated with crowded living conditions [15].

Pediculosis capitis is prevalent in summer than winter; this study is similar to study of Kamiabi and Nakhaei, who reported that head lice is more prevalent in summer months [6].

Conclusions

1-Pediculosis capitis was more common in children than adults.

2-Pediculosis was more common in girls and mothers.

3- The incidence of pediculosis capitis was more common in females than males.

4-There was no relationship between residents in urban and rural areas with the head lice infestation.

5- The incidence was high among students.

6- Most common symptom of pediculosis is itching.

7-The incidence was high in summer months

Recommendations

1-Raising awareness about pediculosis capitis in schools and kindergartens, and the ways of spreading the disease.

2- Educate the pupils about social distance, and not share hats , combs and hair clips with others.

3- Educate the parents about using the proper way and useful treatments to cure their children and how to deal with contaminated objects.

4-Raising awareness about lice as a contagious disease so we need to see the doctors and not necessarily feel consulted.

Source of funding: The current study was funded by our charges with no any other funding sources elsewhere.

Ethical clearance: Ethical approval was obtained from the College of Medicine / University of Diyala ethical committee for this study.

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Conflict of interest: Nil

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انتشار القمل في مدينة بعقوبة محافظة ديالى

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الملخص

خلفية الدراسة: قمل الرأس مرض معدي تسببه حشرة طفيلي خارجي، يمكن رؤيتها بالعين المجردة ، وغالبًا ما تسبب حكة في فروة الرأس ، وهي ليست مرضًا خطيرًا ولكنها مرض مزعج. قمل الرأس هو طفيلي متوطن يصيب العديد من دول العالم ، كما أنه منتشر في العراق ، وغالبًا ما يصيب الأطفال ، وهو مشكلة منتشرة في كل مكان لدى الأطفال ،لديه مقاومة عالية لبعض العلاجات الدوائية وغير الدوائية.

اهداف الدراسة: تقدير مدى انتشار القمل في مدينة بعقوبة وتحديد بعض المعايير الوبائية التي تتعلق بالقمل.

المرضى والطرائق: أجريت هذه الدراسة المقطعية على ١٥٥ مريضاً مصاباً بالقمل كانوا يزورون العيادات الخارجية الجلدية السريرية في مستشفى بعقوبة التعليمي في ديالى ، العراق ، من الأول من تشرين الثاني (نوفمبر) ٢٠٢٠ إلى الثلاثين من آب (أغسطس) ٢٠٢١ ، تم اخذ التاريخ المرضي والفحص البدني من قبل طبيب الأمراض الجلدية ، وتم استخدام ورقة استبيان خاصة لكل مريض.

النتائج: أظهرت النتائج أن الأطفال الذين اعمارهم أقل من ١٠ سنوات كانوا ٥٩ (٣٨,٠٦٪) من أصل ١٥٥ وهم الاكثر عرضة للاصابة ، وكانت النسبة أكبر عند الإناث حيث كانت ١٢٣ (٧٩,٣٥٪) مقابل ٣٢ للذكور (٢٠,٦٤٪). الاناث الذين أقل من ١٠ كان لديهم نسبة عالية ٣٩ (٢٥,١٦٪) من بين ١٢٣ أنثى ، من الفئات العمرية الأخرى و كان الأشخاص الذين يعيشون في المناطق الحضرية والريفية متأثرين بشكل متساوٍ في المناطق الحضرية بلغوا ٧٣ (٤٧,٠٩٪) بينما في المناطق الريفية كانوا ٨٢ (٥٢,٩٠٪). كان القمل منتشرًا بشكل كبير بين الطلاب الذين بلغوا ٥٨ (٣٧,٤١٪) من أصل ١٥٥ ، وكان أهم أعراض القمل هو حكة فروة الرأس ، الأشخاص الذين عانوا من الحكة كانو ١٣١ (٨٤,٥١٪) بينما كان الأشخاص الذين لم تظهر عليهم أعراض ٢٤ (١٥,٤٨٪). لم تكن هناك علاقة بين عدوى قمل الرأس وحجم الأسرة. كان أكثر انتشارًا في العائلات التي تعيش في منازل مزدحمة حيث بلغ عددهم ٧٦ (٤٩,٠٣٪) من أصل ١٥٥ الذين لديهم غرفتا نوم فقط. كان داء القمل أكثر شيوعًا في شهر الصيف في نيسان حيث كانوا ٢١ (١٥,٥٤٪) في ايار كانوا ٢٤(١٥,٥٤٪) في حزيران كانت ٢١ (١٥,٥٤٪) في تموز كانت ٢٢ (١٤,١٩٪).

الاستنتاجات: قمل الراس أكثر انتشارًا بين الأطفال في سن المدرسة ، لذلك يجب نشر التوصيات بين الطلاب حول كيفية انتقال القمل وعدم مشاركة مشط الشعر أو ملاقط الشعر ، وكذلك توعية أولياء الأمور حول استخدام العلاجات الفعالة والمفيدة للقضاء على المرض .

الكلمات المفتاحية: قمل الرأس ، الانتشار ، الأطفال في سن المدرسة ، حكة فروة الرأس ، بعقوبة

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