

The Prevalence of Pediculosis Capitis In Primary School Children In Assuit Governorate (A Socioeconomic Study)

Amer Abu El Enin * and Ali Osman**

The Departments of Dermatology & Venereology *and Public Health **
Faculty of Medicine. AL – Azhar university .

Abstract

This study was carried out in 2005 to determine the prevalence of pediculosis capitis and some risk factors among primary – school pupils in Assuit .We selected 1200 pupils (53% girls) from primary schools by random sampling. Their hair was examined for head rate of infestation: 45 (3.8%) were infected with lice, 43 (95.5%) girls and 2 (4.5%) boys. The highest louse of infestation was in 9 – years olds. There was a significant relationship between head louse infestation and sex ($P < 0.0001$), age($P < 0.05$), parents education ($P < 0.0001$), father's job ($P < 0.01$), family size ($P < 0.01$), length of hair ($P < 0.0001$) and having separate bathing facilities in the house ($P < 0.0001$).

Introduction

Skin disorders are among the most frequently diagnosed conditions in schoolchildren in both developing and industrialized countries (Markkola *et al.*, 1989 ; Dold S *et al.* , 1992 and (Huh S *et al* & Aydemir EH *et al.*, and Verhagen *et al.*, 1993)). The school environment makes children vulnerable to cross – transmission of communicable skin diseases, which can then be passed on to family members Shakkoury *et al.*, 1999 . Head louse infestation is a condition that has worldwide distribution and is seen in school – age children in many countries .

This study was carried out to determine the prevalence of pediculosis capitis and some of the factors affecting infestation among pupils in primary schools in Assuit city .

Material and methods

The present study was carried out in Assuit city on a random sample of primary school children representing various socio – economic levels during March and April 2005.

Sampling:

The Assuit city was divided into four sectors, the governmental free primary school in each sector were listed and one school was randomly chosen from each sector. A fifth private paid school know to house pupils of a relatively high socio – economic level was also included in the study.

One class was chosen at random from the fifth grades in each of selected schools, and their pupils were examined. The sample size was 1200 students ranging in age from 6 - 12 years .

Physical examination:

For data collection, the student' hair was examined carefully for the presence of nits, nymphs or adult lice in the hair were the criteria for diagnosis of head louse infestation. The data from this physical examination were recorded for each pupil along with the demographic information that was collected from the students or from school documentation.

The Prevalence of Pediculosis Capitis In Primary.....

Socio – economic and environmental study:

A socioeconomic questionnaire was as designed and applied to all. Pupils It was filled out by the researcher in co-operation with the social worker and health visitor of the school as well as the class teacher. The official record of the pupils were also revised.

Statistical analysis:-

The data were tabulated and statistically analyzed using the Chi - square test

Results

A total of 1200 primary- school students were examined for this study, 636 girls (53%) and 564 boys (47 %). Demographic data and prevalence of infestation are shown in Table 1. Only 30 students (2.5%) were living in families with family size > 10 and only 94 (7.8%) were living in a house which didn't have a bath. Just over 60% of the students we examined

had short hair that couldn't be collected and fastened.

Prevalence of pediculosis capitis among the primary-school pupils we studied in Assuit city was 3.8% overall (45 pupils). Of those infected, 95% were females. The highest prevalence of infestation was among 9 – years-olds (6.6%). Students with short hair had a lower infestation rate (1.2%). Of the 636 girls, 462 had long hair and 36 (7.8 %) of these were infested. Just 7(4.0%) of the 174 girls, short hair were infested .

Prevalence of head louse infestation among pupils who were living in large families (> 10 family members) was greater (13.3%) than among others and the rate of infestation was also greater among students whose parents' education level was low. In addition, the infestation rate was greater among pupil who were living in families with poor socioeconomic conditions and who did not have separate facilities for bathing in their house.

Based on chi-squared tests, the relationship between head louse infestation and all of the variables examined was statistically significant (Table 1-8).

Table1:-Prevalence of head louse infestation in pupils of primary schools in Assuit city, 2005.

Variable			Prevalence of infestation		P-value
	No.	%	No.	%	
Sex					
Female	636	53.0	43	6.8	<0.0001
Male	564	47.0	2	0.4	

Table2:-Prevalence of head louse infestation in pupils of primary schools in Assuit city, 2005.

Variable			Prevalence of Infestation		P-value
	No.	%	No.	%	
Age (years)					
7	195	16.3	7	306	<0.05
8	223	18.6	4	1.8	
9	213	17.8	14	6.6	
10	224	18.7	2	.09	
11	259	21.6	13	5.0	
>11	86	7.2	5	5.8	

Table 3 :-Prevalence of head louse infestation in pupils of primary schools in Assuit city, 2005.

Variable			Prevalence of Infestation		<i>P</i> -value
Hair length	No.	%	No.	%	
Short	738	61.5	9	1.2	<0.0001
Long	462	38.5	36	7.8	

Table 4 :-Prevalence of head louse infestation in pupils of primary schools in Assuit city, 2005.

Variable			Prevalence of Infestation		<i>P</i> -value
Family size	No.	%	No.	%	
<5	690	57.5	18	2.6	<0.01
5-10	480	40.0	23	4.8	
>10	30	2.5	4	13.3	

Table 5 :-Prevalence of head louse infestation in pupils of primary schools in Assuit city, 2005.

Variable			Prevalence of Infestation		<i>P</i> -value
Mother's education	No.	%	No.	%	
Illiterate	126	10.5	9	7.1	<0.0001
Primary	345	28.8	23	6.7	
Secondary	573	47.8	9	1.6	
University education	106	8.8	0	-	

Table 6 :-Prevalence of head louse infestation in pupils of primary schools in Assuit city, 2005.

Variable			Prevalence of infestation		<i>P</i> -value
Father's job	No.	%	No.	%	
Skilled	346	28.8	8	2.3	<0. 01
Semi-Skilled	314	26.2	21	6.7	
Unskilled	467	38.9	14	3.0	
Unemployed	26	2.2	1	3.8	

Table 7 :-Prevalence of head louse infestation in pupils of primary schools in Assuit city, 2005.

Variable			Prevalence of infestation		<i>P</i> -value
Father's education	No.	%	No.	%	
Illiterate	105	8.8	12	11.4	<0.0001
Primary	324	27.0	14	4.3	
Secondary	450	45.0	16	3.0	
University education	165	13.8	0	-	

The Prevalence of Pediculosis Capitis In Primary.....

Table 8 :-Prevalence of head louse infestation in pupils of primary schools in Assuit city, 2005.

Variable			Prevalence of infestation		P-value
Bathing facilities in the house	No.	%	No.	%	
Yes	1106	92.2	31	2.8	<0.0001
No	94	7.8	14	14.9	

Discussion

Pediculosis capitis is a disease which is strongly influenced by socioeconomic and environmental factors.

It is the most prevalent condition in school and preschool age groups throughout the world, and especially in developing countries (Aydemir EH *et al.*, 1993). Head lice ranked third in frequency among all skin disorders among male schoolchildren in Amman (Shakkoury, 1999). In our study prevalence of head louse infestation was 3.8% in primary- school students in Assuit City. According to an accomplished investigation in 'Torine' (France), more than 15% of students studied were infected (Combescot, 1990). Head, louse infestation was 6.8% in 1007 primary – school children in Sierra Leone (Gbakima, 1992). In a similar study in Nigeria, of 6882 primary – school pupils 3.7% were infected (Ebomoyi, 1994). Prevalence of infestation was 9.4% in 785 primary – school children in Turkey (Lnanir *et al.*, 2002). The rate of infestation was 81.4% among school-children in Argentina (Chouela E *et al.*, 1997).

Overall, 13.4% of students were infected with nits or immature adult lice in northern Jordan and girls showed a higher prevalence than boys (Amr., 2000) in our study, the prevalence of head lice in girls was also greater than in boys. This is in agreement with results of a number of other studies (Wegner *et al.* (1994); Hong HK *et al.* (1995) and Lnanir *et al.* (2002); and).

In addition, in our study the highest rate of infestation was seen in 9-year-old students. Similar findings have been reported in a number of other studies (Suleman and Jabeen 1989); (Fan PC *et*

al., 1991); (Suleman & Jabeen 1992); (Chouela E *et al.*, 1997); (Shakkoury *et al.* 1999) and (Amr & Nusier 2000). In our study there was a relationship between the rate of infestation and parents, education and socioeconomic and sanitary conditions. This is in agreement with results of a number of previous studies (Aydemir *et al.*, 1993); (Chouela *et al.*, 1997) and (Imanir *et al.*, 2002).

Improvements in socioeconomic and cultural conditions may reduce prevalence of pediculosis capitis because these are factors which affect the rate of infestation. Education and income are intimately related to housing, nutrition, personal hygiene, attitudes towards life and the way the family income is spent.

Implementing health education programmes for students, and possibly parents too, may help in controlling this health problem.

These measures along with curing infected students and possible cases within family will decrease the rate of infestation lead to greatly improved control.

References

1. **Dold S *et al.* (1992):** Genetic risk for asthma, allergic rhinitis, and atopic dermatitis. Archives of diseases in childhood, 67(8):1018-22.
2. **Markkola L, Mattila KJ, Koivikko MJ (1989):** Sauna habits and related symptoms in Finnish children. European journal of paediatrics, 149(3):221-2.
3. **Huh S *et al.* (1993):** Prevalence of head louse infestation in primary – school children in Kangwon – do, Korea. Korean journal of parasitology, 31(1):67-9.

4. **Aydemir EH et al (1968):** Pediculosis capitis in Istanbul. International journal of dermatology, 1993, 32 (1): 30-2
5. **Verhagen AR et al (1968):** Skin diseases in Kenya. A clinical and histopathological study of 3168 patients. Archives of dermatology, 1968, 98:577-86.
6. **Shakkoury WA, Abu- Wandy E (1999):** Prevalence of skin disorders among male school- children in Amman, Jordan Eastern Mediterranean health journal, 5 (5) :955-9 .
7. **Combescot C (1990):** Epidemiologie actuelle de la pediculose a Pediculus capitis { Current epidemiology of Pediculosis capitis} Bulletin de l' Academie Nationale de Medecine, 174 (2) :231-6
8. **Gbakima AA, Lebbie AR (1992):** The head louse in Sierra leone : an epidemiological study among school children in the Njala area. West African journal of medicine, 11(3):165-71.
9. **Ebomoyi EW (1994):** Pediculosis capitis among urban school children in Ilorin, Nigeria . Journal of the National Medical Association , 86 (11) :861-4 .
10. **Lnanir I et al (2002):** Prevalence skin conditions in primary –school children in Turkey : differences based on socio-economic factors. Pediatric dermatology , 19 (4): 307-11.
11. **Chouela E et al (1997)** Head louse infestations: epidemiologic survey and treatment evaluation in Argentinean school children . International journal of dermatology , 1997, 36 (11): 819 – 25 .
12. **Amr ZS, Nusier MK (2000)** . Pediculosis capitis in northern Jordan . International journal of dermatology , 39 (12) 919 -21 .
13. **Wegner Z, Racewicz M, Stanczak J. (1994)** Occurrence of pediculosis capitis in a population of children from Gdansk, Sopot, Gdynia and the vicinities. Applied parasitology, 1994 , 35(3):219-25.
14. **Hong HK et al (1995):** Infestation rate of head lice in primary children in Inchon , Korea . Korean journal of parasitology , 1995 , 33(3):243- 4 .
15. **Fan PC et al (1991) :** Present status of head louse (Pediculosis capitis) infestation among school children in Yunlin County, Taiwan. Gaoxiong yi xue ke xue za zhi , 1991, 7 (4):151-9
16. **Suleman M, Jabeen N (1989) :** Head lice infestation in some urban localities of NWFP , Pakistan . Annals of tropical medicine and parasitology, 1989, 83 (5) : 539 – 47 .

انتشار قمل الرأس لدي أطفال المدارس الابتدائية في مدينة أسيوط عام 2005

عامر أبو العينين - علي عثمان

أقسام الأمراض الجلدية والصحة العامة - كلية الطب جامعة الأزهر

أجريت هذه الدراسة الوصفية التحليلية بغرض تحديد معدل انتشار الإصابة بقمل الرأس ، وبعض عوامل انتشاره لدي تلاميذ المدارس الابتدائية في أسيوط . وقد تم اختيار 1200 تلميذا وتلميذه (53% منهم من الإناث) وذلك من بين تلاميذ خمسة مدارس ابتدائية ، بإتباع أسلوب العينة العشوائية التصنيفية المتعددة المراحل . وتم فحص الشعر للكشف عن الإصابة بالعدوى بقمل الرأس وتبين أن 45% من المشاركين في البحث (3.8%) كانت لديهم عدوى بقمل الرأس ، منهم 43 (95.5%) من الإناث و 2 (4.5%) من الذكور . وكان أعلي معدل إصابة بالعدوى بالطفيليات موجودا لدي الأطفال في سن التاسعة . وكانت هناك واضحة بين الإصابة بعدوى طفيليات القمل ، وبين الجنس (p أقل من 0.0001) ، والعمر (p أقل من 0.05) ، والمستوي التعليمي للآباء (p أقل من 0.0001) ووظيفة الأب (p أقل من 0.01) ، وحجم الأسرة (p أقل من 0.01) وطول الشعر (p أقل من 0.0001) ، وتوافر مرافق استحمام منفصلة بالمنزل (p أقل من 0.0001).