THE PREVALENCE OF HUMAN PEDICULOSIS IN KOT ADDU DISTRICT MUZZAFFARGARH (PUNJAB) PAKISTAN

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ABSTRACT

During the present study, 500 hosts were examined for Pediculus capitis in Kot Addu (Punjab: Pakistan). The survey was conducted from November 2005 to June 2006. Out of 500 hosts, 291 (58.2%) were infested with P. capitis. The lice were more prevalent in female hosts (70.81%) as compared to male hosts 47.94%. The prevalence of P. capitis was highest (80%) in age group of 61-75 years and lowest (46.22%) in age group of 31-45 years.

Key words: pediculosis, age, humans, prevalence, relationship, sex.

INTRODUCTION

Pediculus capitus affects millions of humans globally, especially children of 5-14 years of all socioeconomic groups (Chosidow et al., 1994). The distribution of the influx is universal and tends to be much more prevalent in swarming urban centers. Predisposing factors include: promiscuity, age, sex (higher frequency in girls), and some hair traits (color quantity). A survey in the Israeli armed forces showed a higher incidence during the warmer months (Chosidow, 2000). These lice generally infest persons with poor hygiene, and it is a big problem in refugee camps and among the homeless (Meinking et al., 2001). Keeping in view the importance of this ectoparasite, the study was designed with following aims. (a) To study the overall prevalence of pediculosis in humans; (b) to study the relationship between sex and pediculosis in humans; (c) to study the relationship between age and pediculosis in humans.

MATERIALS AND METHODS

The present investigation was carried out from November 2005 to May 2006 in order to study the prevalence of Pediculus capitis in humans in Kot Addu. A total of 500 hosts were examined for this purpose. The collected lice were transferred into bottles containing 5% formalin. The sex and age of the host was also recorded. The following technique was used to identify the parasite.

Permanent mounts of head lice: The lice were washed with water to remove the fixative and then placed in 10% KOH to make the parasites transparent. The specimens were washed with distilled water in order to remove the alkali.

RESULTS

The present study was conducted in order to determine the prevalence of Pediculus capitis from November 2005 to May 2006 in Tehsil Kot Addu. The parameters studied were, the relationship between sex and age of humans with the parasite.

The overall prevalence of pediculosis in humans in Kot Addu: The overall prevalence of P. capitis in humans was calculated, the results are shown in Table 1 and Figure 1. According to these results the prevalence was 58.2%.

Relationship between sex and pediculosis in humans in Kot Addu: The relationship between P. capitis and sex was calculated; the results are presented in Table 2 and Figure 2. According to these results the prevalence in male hosts was 47.94% and in female hosts it was 70.81%.

Relationship between age and pediculosis in humans in Kot Addu: The relationship of P. capitis between different age groups in humans was calculated, the results are presented in Table 3 and in Figure 4. According to these results the prevalence was highest in age group of 61-75 years (80%) and lowest in age group of 31-45 years 46.22%.
DISCUSSION

The present survey was conducted in order to study the prevalence of head louse in humans. The other parameters included the relationship between sex, and age of the host with Pediculus capitis.

The overall prevalence of pediculosis in humans in Kot Addu: During the present study the overall prevalence of P. capitis in humans was 58.2%. Studies have been conducted on the same parameter by different researchers in different parts of the world. Amr et al. (2000) examined a total of 2519 school students for the presence of Pediculus capitis, enrolled in eight elementary governmental schools. The overall prevalence was (13.4%). Morsy et al. (2001) studied the prevalence of lice infesting students of primary, preparatory and secondary schools in Cairo, Egypt. Prevalence rate was 21.86%, 30.38% and 12.94% respectively. Khokhar (2002) studied Pediculus capitis among primary school children. Out of 940 hosts 156 (16.59%) were found to be infested with head louse. Willems et al. (2001) examined a total of 6,169 schoolchildren age 2.5 to 12 years from Ghent (Belgium). The overall prevalence of head lice was 8.9%. Heukelbach et al. (2005) examined a total of 1460 individuals in Brazil and concluded that out of 1460, 43.4% hosts were infected by Pediculus capitis. Willems et al. (2001) studied a total of 6,169 schoolchildren for the prevalence of Pediculus capitis. The overall prevalence was 41%. Catala et al. (2005) studied the prevalence of Pediculus capitis infestation among Argentinean schoolchildren. The study included 1,370 schoolchildren. The general prevalence was 61.4%.

The results of the present study are not in agreement with the studies conducted by Amr et al. (2000), Morsy et al. (2001), Khokhar (2002), Lapeere et al. (2005), Heukelbach et al. (2005), Willems et al. (2001). According to the results of all these studies the prevalence is low as compared to the results of the present study and the study conducted by Catala et al. (2005). This could be explained on the basis that the prevalence of Pediculus capitis is related to poor socio-economic status, length of hair, family size, age, crowding, lower level of education and personal hygiene (Sinniah et al., 1983; Suleman et al., 1989). This has been supported by Buczek et al. (2004) who studied the prevalence of pediculosis in school children in Poland and according to his findings the prevalence of pediculosis decreased with increasing life standards, i.e. with high income, accessibility and consumption of water and better health care systems. According to El-Basheir et al. (2002) infestation rates of pediculosis were higher in the rural areas with low socioeconomic levels, concrete houses with over-crowded family members. The same factors may be responsible for the higher prevalence of Pediculus capitis during the present study.

Relationship between sex and pediculosis in humans in Kot Addu: According to the results of the present investigation the prevalence in male hosts was 47.94% and in female hosts it was 70.81%. Various researchers have conducted research on same the parameter in the different parts of the world.

Menan et al. (1999) studied the relationship between sex and Pediculus capitis so according to their results the girls were more frequently infected than the boys; 24.88% for girls and 11.85% for boys. Amr et al. (2000) examined a total of 2519 school students of both sexes in eight elementary governmental schools for the presence of Pediculus capitis. Girls showed a higher prevalence 14.5% than boys 11.1%. Khokhar (2002) examined a relationship between sex and Pediculus capitis among primary school children in Delhi.

Out of a total of 940 significantly higher proportions of girls 20.42% were found to be in tested as compared to boys 13.86%. Kokturk et al. (2003) also examined the relationship between P. capitis and sex. The prevalence of infestation was significantly higher in girls (13.3%) than in boys (1.1%). Buczek et al. (2004) examined a total of 95, 153 schoolchildren living in urban and rural areas. Pediculus capitis was observed most frequently in girls both in the urban (63.5%) and rural (75.3%) schools. Catala et al. (2005) examined the prevalence of Pediculus capitis, among Argentinean schoolchildren. The prevalence among girls was 79%; and in boys was 44%.

The above comparison shows that males have lower prevalence of head louse as compared to females. This could be due to hair length as males have short hair as compared to females, providing better protection to lice.

Relationship between age and pediculosis in humans in Kot Addu: The prevalence was highest (80%) in age group of 61-75 years and lowest (46.22%) in age group of 31-45 years. According to various studies the Pediculus capitis is more prevalent in children and the prevalence decreases as the age increases and then it again increases in the elderly humans. Menan et al. (1999) examined a
relationship between age and *Pediculosis capitis* in Abidjan school. According to their results children most frequently affected were those aged 14 to 15 years (24%) or 6 to 7 years (23.21%). The children least affected were those aged 12 to 13 years (15.21%) or 10 to 11 years (16.21%). This may be explained on the basis that the children and elderly have less resistance as compared to adults (Perotti et al., 2004; Menan et al., 1999).

### Table 1. The overall prevalence of pediculosis in humans in Kot Addu

<table>
<thead>
<tr>
<th>Name of parasite</th>
<th>No. of hosts examined</th>
<th>No. of hosts infested</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Pediculus capitis</em></td>
<td>500</td>
<td>291</td>
<td>58.2</td>
</tr>
</tbody>
</table>

### Table 2. Relationship between sex and pediculosis in humans in Kot Addu

<table>
<thead>
<tr>
<th>Name of parasite</th>
<th>Male hosts</th>
<th>Female hosts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of hosts examined</td>
<td>No. of hosts infested</td>
</tr>
<tr>
<td><em>Pediculus capitis</em></td>
<td>267</td>
<td>128</td>
</tr>
</tbody>
</table>

### Table 3. Relationship between age and head pediculosis in Kot Addu

<table>
<thead>
<tr>
<th>Name of parasite</th>
<th>Age groups of hosts observed</th>
<th>1month-15yr n=134</th>
<th>16-30yr n=158</th>
<th>31-45yr n=106</th>
<th>46-60yr n=67</th>
<th>61-75yr n=25</th>
<th>76-90yr n=10</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Pediculus capitis</em></td>
<td>500</td>
<td>93(69.40%)</td>
<td>81(51.26%)</td>
<td>49(46.22%)</td>
<td>40(59.70%)</td>
<td>20(80%)</td>
<td>5(50%)</td>
<td></td>
</tr>
</tbody>
</table>

### REFERENCES


Lapeere, H., S. Willems, N. Haedens, I. Pastels, J. M. Naeyaert and J. De Maeseneer, (2005). The importance of socio-economic status and individual characteristics on the prevalence of


