Prevalence of Pediculosis among Students in Pakistan

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Received date: March 03, 2017; Accepted date: March 27, 2017; Published date: March 31, 2017

Abstract

Background: Head louses, commonly known as Pediculosis, is an infestation of the skin caused by a parasite known as Pediculus humanus capitis. Head louses are more common among crowded families, having poor hygiene and poor living condition. It can be easily transmitting from infected to healthy person.

Methodology: This study was conducted in district Mardan of Pakistan. In this study, 202 head louse patients from 30 schools (15 male and 15 female's elementary schools) were examined. A questionnaire was designed for data collection.

Results: The occurrence of head louse was excessive among students having indigent living situation (78.7%), as compare to those students having good living condition (21.3%). Head louse rate was high (82.7%) among students with more than five family members living together. This study confirms that head louse rate was abundant in students having poor hygiene (72.8%). Head louses were more prevalent among students whose parents are illiterate (39.6%). This study shows that most functional treatment method was medication (72.3%).

Conclusion: Results showed that head louses were common among students who need proper responsiveness. Its prevalence can be lowered by improving hygiene, living condition, and by educating people.

Keywords: Head lice; Prevalence; Factors; Students; Mardan

Introduction

Pediculosis or head louses are parasitic infestation of scalp or hair caused by Pediculus humanus capitis [1,2]. Pediculus humanus capitis is an obligatory parasite that suck blood from human. Their host is only human and has no connection with pests or other animals [1,3]. Head louse laid eggs near the scalp which hatches after 6-9 days; they became an adult after 9-15 days and start laying eggs [4]. Their lifespan is typically 3-4 weeks in which they lay up to 150 eggs [5]. The transmission of head louse is usually through a direct head - head contact with an infested person or having contact with hairbrush, towel or clothes of an infected person. Inflammation and itching of nick and scalp, presence of head louse and presence of eggs in hair provides evidence for Pediculosis [3,6].

People having deprived living condition, destitute hygiene, poor resources and homeless individuals are at high-risk [7]. Treatment of pediculosis is usually by topical-Pediculicides, oral agents and physical methods [7]. In physical method, wet comb is used to remove head louse, comb, having teeth lesser than 0.3 mm apart [7,8]. The topical-treatment is usually done by pyrethrins, pyrethroids and lindane [9-11]. In oral treatment, ivermectin is highly neurotoxic for those children whose weight is less than 45 kg and to pregnant women [7].

Using rimethoprim-sulfam-ethoxazole for head louse treatment is still controversial [10,12]. Head louse is more prevalent among countries having poor living condition, this study was carried out in District Mardan because head louse is also big problem for students of district Mardan, this study was carried out to reveal the diverse factors responsible for head louse prevalence among students and aware people to control its prevalence.

Methods and Materials

Most of the populations of study area (Khyber Pakhtunkhwa KPK) is deprived, low literacy rate and having poor living conditions. This study was directed in District Mardan of KPK from July 2014 to June 2015, the duration of this study was 11 months. In this research, 15 males and 15 female's elementary schools were selected for study. To detect infestation, the whole scalp was combed gently through a louse comb, the tooth of the comb was inspected for the existence of active lice, and this is the most effective method for head louse diagnosis. Questionnaires were designed and were filled by 202 students suffered in headed louse to find out the association of different factors with head lice prevalence.
Statistical analysis

Statistical analysis was done by using SPSS 20, and P-value was calculated by chi-square (χ²) test.

Results

Rate of head louse in association with living condition, gender, family members and hygiene

It was found that percentage of head louse is high among students having poor living condition (78.7%), as compare to those having good living conditions (21.3%). In males, the occurrence of head louse was (51%), while in females; the frequency was (49%). In this study degree of head louse was high among students having more than five family members (82.7%), while head louse rate was low among small families (17.3%). The present research shows that head louse rate was rich in students having poor hygiene (72.8%), as compare to those students having good living condition (27.2%), (Table 1, Figure 1).

Table 1 Rate of head Louse in association with living condition, gender, family members and hygiene.

<table>
<thead>
<tr>
<th>Conditions/Parameters</th>
<th>Living Condition</th>
<th>Gend er</th>
<th>Family Membe rs</th>
<th>Hygiene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>159 (78.7%)</td>
<td>103 (51%)</td>
<td>35 (17.3%)</td>
<td>147 (72.8%)</td>
</tr>
<tr>
<td>Good</td>
<td>43 (21.3%)</td>
<td>99 (49%)</td>
<td>167 (82.7%)</td>
<td>55 (27.2%)</td>
</tr>
<tr>
<td>P-value</td>
<td>&lt;0.0005</td>
<td>0.779</td>
<td>&lt;0.0005</td>
<td>&lt;0.0005</td>
</tr>
</tbody>
</table>

Rate of head Louse in association with treatment method and parent’s education

This study reveals that the preeminent treatment method was medication (72.3%), followed by combing (15.8%), and the use of procedures was only (11.9%). Head louse was more common among students whose parents are illiterate (39.6%), in students whose fathers were uneducated; the rate was (15.8%), while the lowest rate was found among students whose parents are literate (7.9%), (Table 2, Figure 1).

Table 2 Rate of head Louse in association with treatment method and parent’s education.

<table>
<thead>
<tr>
<th>Conditions/Parameters</th>
<th>Treatment</th>
<th>Parent’s Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combing</td>
<td>32 (15.8%)</td>
<td>-</td>
</tr>
<tr>
<td>Medications</td>
<td>146 (82.3%)</td>
<td>-</td>
</tr>
<tr>
<td>Procedures</td>
<td>24 (11.9%)</td>
<td>-</td>
</tr>
<tr>
<td>P-value</td>
<td>&lt;0.0005</td>
<td>-</td>
</tr>
<tr>
<td>Literate father</td>
<td>-</td>
<td>27 (13.4%)</td>
</tr>
<tr>
<td>Illiterate father</td>
<td>-</td>
<td>32 (15.8%)</td>
</tr>
</tbody>
</table>

Discussion

Head Louse is very common parasitic infestation in youngsters [1]. The current research was conceded in District Mardan of Khyber Pakhtunkhwa, Pakistan. In this investigation, 202 students having headed louse shared their data through questionnaires. This study shows that head louse was common among students having poor living condition (78.7%), while head louse prevalence was low among students having good living condition (21.3%). In males, the prevalence was slightly higher (51%), than females (49%). Contrary results were found by Rukke et al. [13]. It was found in the current examination; that rate of head louse was high among students having more than five family members (82.7%), as compare to those having less than five family members (17.3), because it is a parasitic infestation and can be easily transmitted from one family member to another via head- head contact and clothes. Similar results were found by Rukke et al. [13].

The present’s study shows that hygiene has strong relation with head louse; head louse was very common among students having poor hygiene (72.8%), as compare to students having good hygiene (27.2%). Current study revealed that medication was most widely cure method for treating head louse (72.3%), as compare to combing (15.8%), and procedures (11.9%). Similar results were found by Roberts et al. [14]. Rate of head louse was high among students whose parents are illiterate (39.6%). Similar results were found by Rukke et al. [13].

Current study shows that the key factor which plays a key role in head louse prevalence was Parent’s education, followed by family members and hygiene; while gender was the less
important aspect that contributes in head louse prevalence. Frequency of head louse can be reduced by educating people to observe cleanliness and be neat and try to improve living conditions.

**Conclusion**

Current analysis shows that percentage of head louse was very common among students who need proper attention to be controlled. This study also concluded that parent’s education, living condition, hygiene and family members having a strong relation with head lice prevalence.

**References**