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Review

Prevalence of Pediculosis Capitis in Indonesia

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ABSTRACT

Head lice infestation is still a health problem in Indonesia. Currently, there has been a lot of research on the incidence of pediculosis capitis. However, there are still few articles that systematically review the incidence of head lice infestation. The purpose of writing this article is to examine cases of pediculosis capitis in several regions in Indonesia in order to obtain systematic and comprehensive prevalence data. A literature search was carried out in October 2021 through Google Scholar and obtained 13 relevant articles. Based on the above review, it can be concluded that the highest incidence of pediculosis capitis is in Islamic boarding schools, attacking elementary school-aged children, with a prevalence range of 29.3%-88.9% and can occur throughout Indonesia. This condition can be caused by a lack of personal hygiene, so that it can continue to be a source of infestation for children around it.

Keywords: Prevalence, pediculosis capitis, parasitic infestation, Indonesia, tropical disease.

INTRODUCTION

Head lice (*Pediculus humanus capitis*) are insects that live in between the hair and attached to the human scalp. These animals are very small in size and survive by sucking blood through the human scalp, and reproduce by laying eggs and nesting their eggs on strands of hair, especially at the base of the hair. The impact of *Pediculus humanus capitis* on health is that it can cause scabs on the head and Pediculosis capitis. In children, there are health problems, namely Pediculosis capitis which can cause anemia which makes children lethargic, sleepy in class, affects learning performance and reduces children's confidence.[1]

The Centers for Disease Control and Prevention (CDC) in 2016 stated that *Pediculus humanus capitis* infestation spread throughout the world with the highest incidence in children aged 3 to 11 years. *Pediculus humanus capitis* can live in human hair due to several factors, namely the lack of personal hygiene, especially the cleanliness of the hair and scalp, and can also be infected through daily activities between other individuals who have been infected with *Pediculus humanus capitis*.[2]

In the United States, it is reported that about 6 million to 12 million children are affected by Pediculosis capitis, especially in girls aged 3 to 11 years. The very high infection rate in 2015 was reported to be more than 70% in Pakistan.[1] In several regions in Indonesia, many studies have been conducted on the incidence of pediculosis capitis. However, there are still few articles that systematically review the incidence of head lice infestation. The purpose of writing this article is to examine cases of pediculosis capitis in several regions in Indonesia in order to obtain systematic and comprehensive prevalence data..

METHODS

The literature search was carried out in October 2021 through Google Scholar. The search keywords were “pediculosis and prevalence”. The inclusion criteria for articles were information on the prevalence of pediculosis, research conducted in Indonesia, and articles published between 2020-2021. The exclusion criteria were that there were duplications and they were not fully accessible. The publications selected in the selection of titles and abstracts were extracted using a standard format table and processed using a Microsoft Excel spreadsheet. The extracted data are the author, year of

publication, journal, research location and conclusions. The results are then presented qualitatively.

RESULTS

From the results of a search of 135 articles, there were 13 articles that met the inclusion and exclusion criteria. A critical study was conducted on selected articles published by accredited national journals. Analysis of the prevalence of pediculosis in various regions in Indonesia in 2020-2021 can be seen in table 1.

Table 1. Prevalence of Pediculosis in Indonesia 2020-2021

Research	Prevalence	Location	Reference
Prevalence of pediculosis kapitis and risk factors for infestation in children in elementary school No. 6 Darmasaba.	59.7% in elementary school subjects	Kec. Abiansemal, Kab. Badung, Bali	(Suweta NPTB, et al. 2021)
Relationship of risk factors with the proportion of pediculus humanus capitis infection in Muhammadiyah 1 elementary school students in Medan City	29.3% on elementary school subjects	Kota Medan, Sumatera Utara	(Syarbaini S, et al. 2021)
Description of personal hygiene behavior related to head lice infestation (pediculus humanus capitis) at Pondok Pesantren Anshor Al-Sunnah Riau	88.2% on the subject of santriwati	Kab. Kampar, Riau	(Analdi V, et al. 2021)
The relationship between personal hygiene and pediculosis in Pondok Pesantren Al Yaqin Rembang	66% on santriwati subjects	Kab. Rembang, Jawa Tengah	(Sulistyaningtyas, et al. 2020)
Relationship of knowledge level and personal hygiene to the incidence of pediculosis kapitis in boarding school	63.4% on santriwati subjects	Karanganyar, Jawa Tengah	(Pramadena, et al. 2020)
Relationship of knowledge level and behavior of shampoo use to the incidence of pediculosis kapitis in orphanage X Palangka Raya	88.6% in orphanage children	Palangka Raya, Kalimantan Tengah	(Rahmawati RK, et al. 2020)
Relationship of head hygiene with pediculosis kapitis in the wall community in Bersehati Manado market	60% in foster children and street children	Kota Manado, Sulawesi Utara	(Maharani A, et al. 2020)
Factors that affect pediculosis capitis in children in Pondok Pesantren Sirojan	64.5% in santri and population	Kec. Cipayung, Jakarta Timur	(Nurdiani CU, 2020)

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Effectiveness of counseling on personal hygiene and incidence rate of pediculosis capitis in daughters of MTs in Pondok Pesantren X	87.8% on the subject of santriwati	Mempawah Timur, Kalimantan Barat	(Islami AC, et al, 2020)
The relationship between personal hygiene and occupancy density with the incidence of pediculosis kapitis in Sukogidri Village	44.3% on population subjects	Jember, Jawa Timur	(Nadira WA, et al. 2020)
Prevalence of pediculus humanus capitis in elementary school children in East Kec. Langowan	78.5% on elementary school subjects	Langowan Timur, Sulawesi Utara	(Massie MA, et al. 2020)
Relationship of pediculosis kapitis, anemia status, and learning achievement in elementary school students	38.3% on elementary school subjects	Bantul, Yogyakarta	(Sulistyani N, et al. 2019)
The relationship between personal hygiene and the incidence of pediculosis capitis in santriwati pondok pesantren Pancasila Bengkulu	79.4% on santri subjects	Bengkulu, Sumatera	(Sudarsono, et al. 2019)

DISCUSSION

Research on pediculosis capitis is mostly done in Islamic boarding schools because of the density of residents and close contact. Based on these studies, it can be seen that the incidence of Pediculosis capitis in dormitories and orphanages is very high. This is due to the fact that Pediculosis capitis mainly attacks young children and quickly spreads in crowded living environments, for example in dormitories and orphanages. Based on the review that the author did, there are several things that make the incidence of Pediculosis capitis in Islamic boarding schools very high, namely direct transmission of Pediculosis capitis is very easy because female students often sleep together. In addition, there are several things that facilitate indirect transmission where female students in Islamic boarding schools often wear combs, towels and clothes together, borrow headscarves and mukena, this is what causes the incidence of Pediculosis capitis to be very high.[3]

The high incidence of *P. humanus capitis* infestation in girls may be due to the fact that girls have longer hair. Based on the observations in this review that most of the female students have longer hair. This allows the transmission/transfer of the head tumor of *Pediculus humanus capitis* from one child to another. In line with other researchers, the frequency of Pediculosis capitis is more common in women than men, because women generally have longer hair than men. In addition, girls have a habit of playing with their friends in small groups and more often experience closer contact with their friends. The prevalence of infestations can vary depending on the policy in handling the incidence of infestation, the eradication method used, the number of direct contacts (head to head contact), the level of personal hygiene, living conditions and family economic conditions including family income as well as knowledge and attention in eradicating head lice.[4]

Pediculosis capitis causes the main clinical symptom in the form of itching on the scalp. The itching is caused by the injection of the tick's saliva into the scalp and causes an allergic reaction. Excessive itching causes sleep disturbances due to increased tick activity at night.[5] Persistent sleep disturbances will have a negative impact in the form of decreased concentration power, decreased sharpness of memory, sensory, motor, and cognitive.[6] Intense itching causes sleep disturbances and causes impaired concentration so that the patient's performance in daily activities is disrupted. Intense itching can disrupt sleep and interfere with learning concentration so that children's achievement decreases.[7]

Pediculosis capitis in addition to causing abnormalities in the hair and scalp can also cause other health problems in the form of iron deficiency anemia. Severe infections of the scalp caused by pediculosis capitis can cause a local inflammatory reaction in the form of regional lymph node enlargement (lymphadenopathy), especially in the occiput and retroauricular.[8] Severe infestations of pediculosis capitis cause complications in the form of iron deficiency anemia. Iron deficiency anemia which is a complication of pediculosis capitis causes patients to feel lethargic, sleepy in class and affects their learning performance and cognitive function which has an impact on their learning achievement.[9]

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