

OVERVIEW OF HELMINTH INFECTION IN CHILDREN

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ABSTRACT

Worm infections remain a significant public health issue in Indonesia, with a high prevalence in many regions. These infections can adversely affect children's health, nutrition, intelligence, and overall productivity. Worms are transmitted through contaminated soil, and individuals become infected by ingesting eggs or larvae present in the soil. This study aimed to examine the prevalence of worm infections in children and analyze hygiene factors that contribute to the spread of these infections. Factors such as poor hygiene practices, including buying snacks carelessly, not washing hands after playing, not wearing shoes, and not regularly trimming nails, were observed. Stool examinations over two consecutive days revealed that seven children were infected with worm eggs. The breakdown included three children aged 6 years (6%), two children aged 5 years (4%), and two children aged 7 years (4%). Furthermore, a survey on personal hygiene showed that 76% of children did not maintain proper nail hygiene, 70% did not wash their hands before eating, and 80% did not take deworming medication regularly. These findings underscore the critical need for better education on personal hygiene and regular deworming to improve children's health and quality of life, ultimately reducing the prevalence of worm infections in the community.

Keywords; Worm Infestation in Children; Hygiene Factors; Worm Prevention

INTRODUCTION

Worms are diseases caused by worm infections in the human body, which are generally transmitted through soil contaminated with worm eggs or larvae. Worm sufferers are individuals whose stool examination finds worm eggs and/or worms¹. According to the results of a 2018 global study on the burden of Soil Transmissible Helminths (STH) infections, almost 70% of infections occur in Asia. The study found that about a quarter (26.4%) of the Asian population studied were infected with at least one STH. The high prevalence of STH in Asia is thought to be due to humid tropical climate conditions, scarcity of safe drinking water, poor sanitation, and inadequate hygiene practices, which facilitate all ongoing life and transmission of worms.

Childhood is a vulnerable period for earthworm infections. Outdoor play activities without wearing shoes can increase the risk of worm eggs entering through contact with contaminated soil. Worm eggs can stick to children's fingernails and enter the body when children scratch or touch their mouths, which facilitates the transmission of worm infections³. Worm infection is

closely related to personal hygiene and environmental sanitation. Poor hygiene practices, such as not washing hands properly after playing or before eating, and inadequate environmental sanitation, such as limited access to clean water facilities and proper toilets, can facilitate the spread of worm eggs. This condition increases the risk of worm infection, especially in children who are more susceptible to contamination.⁴ If there are no adequate prevention efforts, worms can have an impact on reducing the absorption of important nutrients such as carbohydrates, proteins, and cause blood loss. This decrease in nutrient absorption can disrupt the nutritional status of children and inhibit the process of physical growth, brain development, and their intelligence. Adequate nutrients are needed to support brain development and intelligence, as well as ensure optimal growth and development, which are very important in children's growth and development.⁵ Based on the description above, researchers are interested in conducting research on children to find out "Description of Worms in Children in Saentis Village, Percut Sei Tuan District." This study aims to gain a clearer understanding of the prevalence of worm infections in children in the village and the factors that influence it, such as personal hygiene and environmental sanitation, which may play a role in the spread of worm diseases. Prevalence of worm infections in the world According to WHO data in 2020, more than 1.5 billion people, or 24% of the population world, infected with a worm infection transmitted through soil throughout the world. Infection is widespread in tropical areas and subtropics, with the largest numbers occurring in sub-Saharan Africa, America, China and Asia East. More than 267 million children aged preschool and more than 568 million children aged schools live in areas where this parasite lives transmitted intensively, and requires treatment and preventive interventions. *Ascaris lumbricoides* is a parasitic nematode that causes two main pathological conditions: immune-mediated reactions to larval migration and nutritional deficiencies and obstruction due to the presence of adult worms in the digestive tract. Infections are often asymptomatic and may occur simultaneously with other diseases (Lamberon & Jourdan, 2015).⁹ The prevalence of STH worm infections in Indonesia ranges from 40%-60% for all ages, while the prevalence of worm infections in children throughout Indonesia aged 1-6 years or 7-12 years is at a high level, namely 30%-90%.¹⁰

METHOD

The majority of respondents based on age were children aged 6 and 7 years, with 10 respondents each (20%). Additionally, there were 9 respondents (18%) aged 5 years, 6 respondents (12%) aged 8 years, and 3 respondents (6%) aged 11 years. For other age groups, the number of respondents was as follows: 2 respondents (4%) aged 1 year, 4 respondents (8%) aged 3 years, 2 respondents (4%) aged 4 years, 2 respondents (4%) aged 9 years, and 2 respondents (4%) aged 10 years.

Table 3. Characteristics of respondents based on personal hygiene statements in Desa Seintis, Kec. Percut Sei Tuan.

No	Statement	Yes		No		Amount
		n	%	n	%	
1	Do children wash their hands before eating?	15	30	35	70	50

2	Does the house have a toilet/toilet?	50	100	0	0	50
3	Do the children always wear sandals/shoes when going out?	40	80	10	20	50
4	Have the children ever taken deworming medicine?	10	20	40	80	50
5	Do the children often bite their nails or suck their fingers?	38	76	12	24	60
6	Do the parents know the impact of helminthiasis on children?	13	26	37	74	50
7	Do the children regularly trim their nails when they are long?	12	24	38	76	50

Based on Table 3, regarding the statements on personal hygiene with "yes" and "no" response options, the most frequent "yes" answer was to the question about the ownership of a toilet/WC at home, with 50 respondents (100%) answering "yes." Meanwhile, the statement that had the fewest "no" answers was regarding the habit of always wearing sandals when going out, with only 10 respondents (20%) answering "no."

Table 4. Description of Helminthiasis Incidence in Desa Saentis, Kec. Percut Sei Tuan

No	Age (Years)	Helminthiasis	Frequency (n)	Persent age (%)

1	1	0	50	0
2	3	0	50	0
3	4	0	50	0
4	5	2	50	4
5	6	3	50	6
6	7	2	50	4
7	8	0	50	0
8	9	0	50	0
9	10	0	50	0
10	11	0	50	0

Based on Table 4, which illustrates the prevalence of helminth infections, the results show that the number of respondents infected with helminths by age is as follows: 2 respondents (4%) are 5 years old, 3 respondents (6%) are 6 years old, and 2 respondents (4%) are 7 years old. These findings indicate that helminth infections are most common among children aged 6, with a lower prevalence in children aged 5 and 7. This suggests the importance of focusing more attention on age groups that are particularly vulnerable to helminth infections, especially considering factors related to hygiene and sanitation practices that may be inadequate in young children. Research conducted by Egbe et al. (2018) involving respondents of children aged 5-15 years showed that the prevalence of STH infection in this group reached 48.1%. Worm infections at this age often occur because children tend to spend more time playing outside the house, which puts them at risk of direct exposure to the soil.¹¹

RESULTS AND DISCUSSION

Soil Transmitted Helminths (STH) infection is an intestinal worm infection that depends on contaminated soil as the medium for transmission. This disease is generally caused by four main types of worms that spread through the soil: *Ascaris lumbricoides* (roundworm), *Trichuris trichiura* (whipworm), *Ancylostoma duodenale*, and *Necator americanus* (hookworm). These worms can infect humans through direct contact with contaminated soil or by ingesting contaminated food or water.

Based on fecal examinations conducted using the native method with 2% eosin staining, seven children were found to be infected with *Ascaris lumbricoides*. Specifically, three children aged 6 years (6%), two children aged 5 years (4%), and two children aged 7 years (4%) were affected. These findings suggest that while ascariasis can affect children of various age groups, its prevalence is higher in younger children, who tend to be more vulnerable to infections due to inadequate hygiene practices.

A survey on personal hygiene habits revealed that many children still fail to maintain good hygiene. As many as 76% of children do not regularly trim their nails, which increases the risk of worm infections through contact with contaminated soil. Moreover, 70% of children do not wash their hands before eating, which is a critical habit in preventing parasitic infections. Even more concerning, 80% of children do not take deworming medication regularly, although routine deworming is highly effective

in preventing worm infestations. Helminth infections caused by soil-transmitted helminths (STH) are diseases that can affect humans through activities related to soil. The majority of these infections occur in children of primary school age. A study conducted by Retno et al. (2019) also revealed this.

A lack of parental awareness about the importance of preventing worm infections and maintaining personal hygiene is a key factor that exacerbates this problem. Many parents are not fully aware that chronic worm infestations can cause long-term health consequences for children, including growth impairments, cognitive deficits, and weakened immune function. Therefore, raising awareness about personal hygiene, healthy living practices, and the importance of regular deworming is crucial to reducing the prevalence of worm infections in the community.

In conclusion, although worm infections remain a significant public health issue, prevention can be achieved through a comprehensive approach that includes raising community awareness, educating parents, and ensuring regular deworming programs. With these efforts, it is hoped that the prevalence of worm infestations will decrease, leading to improved health outcomes for children in Indonesia.

CONCLUSION

This activity was carried out in Saentis Village, Percut Sei Tuan Subdistrict, involving 50 children aged 1 to 11 years. The objective of this initiative was to provide health education about helminth infections, as well as to educate both parents and children on proper handwashing techniques and the importance of personal and environmental hygiene. Additionally, the activity included the distribution of a helminth infection screening questionnaire to obtain parental consent, as well as socialization on the risks of helminthiasis, the significance of handwashing, and maintaining clean and healthy living habits. This was followed by fecal examinations conducted at the TLM Department Laboratory over the course of two days.

Based on the research findings, 7 out of 50 children (14%) were found to be infected with helminths. These results indicate that helminth infections remain a significant health issue in Saentis Village, highlighting the need for intensified education and preventive measures regarding personal and environmental hygiene. Therefore, preventive measures such as proper handwashing, regular deworming, and raising awareness about the importance of hygiene should continue to be promoted in order to reduce the prevalence of helminth infections within the community.

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