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RESEARCH ARTICLE

Hand washing behavior using soap and not using soap on the incidence of ascariasis in children in grades 1-3 at Simokerto Elementary School

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Abstract

Ascaris lumbricoides is known as roundworm which is a type of Soil Transmissive Helminths (STH), a worm that requires soil media in its development process to become infective. *Ascaris lumbricoides* is a type of parasitic nematode that attacks many living creatures, especially humans. This research uses an observational method with a cross-sectional study approach, the sampling technique uses a purposive sampling technique. The samples used were 42 feces samples from children in grades 1-3. Data analysis used the Wilcoxon method. Respondents based on age 7 years were 16 (38%), respondents aged 8 years were 13 people (31%), respondents aged 9 years were 6 people (14%) and aged 7 years (17%). Respondents based on class were 14/42 (33.33%), class 1 respondents were 14/42 (33.3%), class 3 respondents were 14/42 (33.3%). Answers by gender is 22/42 (52.3%) of respondents were men and 20/42 (47.6%) were women. From the research results it can be concluded that there is no relationship between washing hands with soap and not using soap on the incidence of ascariasis.

Keywords: Hand Washing, *Ascaris lumbricoides*, Elementary School, Behavior

INTRODUCTION

Clean and Healthy Lifestyle (PHBS) is behavior carried out consciously so that the family or family members can play an active role in public health activities. Clean living starts at home and must start as early as possible. Families with children should start teaching clean living not only at home but also in the home environment and in the school area. School-aged children are also strategic targets for a clean and healthy lifestyle, especially in washing their hands properly (Maryunani, 2013).

Worm infections are classified as neglected diseases, that meaning the infection is not too worrying and is chronic and does not cause clinical symptoms, and the infection lasts a long time. Soil Transmission Helminth (STH) is a type of worm whose infection can be transmitted through soil (Elfred et al., 2016). Humans are the primary host of most helminth species, which are often found in stool samples of infected patients. Risk factors for worm infection include age, gender, PHBS, clean

water sources, feces disposal and physical environmental factors such as soil moisture, the presence of crop land (Nurhalina and Desyana, 2018).

The activity of washing hands with soap is one action hygiene clean hand sandfingers with soap and water, clean person and break the chain of bacteria. Washing hands with soap is also known as disease prevention. This is done because the hand soften become carriers of germs and cause pathogens to spread from person to person, either through direct or indirect contact (other surfaces, e.g towels and glasses). Washing the hands before eating or doing activities is highly recommended because dirty hands spread germs. Wash hands only with water is common throughout the world. However, it turns out that this method is not enough more effective than washing hands with soap. This is because soap can dissolves fat and dirt which becomes a nest for bacteria (Kamisorei, 2017).

Washing of hands with soap is a joint preventive measure with hygiene measures, clean hands and fingers with soap and running water. Human hands often carry bacteria and cause pathogens transmission of pathogens from one person or to another through direct contact or indirectly (Hafid and Sandalayuk, 2021). The prevalence of worms in Indonesia is estimated at around 31.8%, among others attacks school age children and is widespread in rural areas and urban. Survey results of worm infections in several elementary schools. Provinces show a prevalence of around 60- 80%, while it varies between 40-60% for all ages (Suriani et al., 2020). Results of a survey conducted in 40 elementary schools in 2012 and 2013 in 10 provinces showed a prevalence range between 2.2% to 96.3% (Rahmayanti et al., 2017). In addition, research finds the prevalence of worms is in all age groups but is highest in children elementary school, namely 90–100% (Kartini, 2016).

Efforts that can be made to improve good health in community groups and individual groups are promotional activities in level of health services as much as preventive activities at the individual level as much. One of the efforts made is by implementing a PHBS. One indicator of PHBS is hand washing, wash hands are sometimes considered normal, but actually washing of hands can affects health status (Purwandari and Ardiana, 2013).

MATERIALS AND METHODS

Materials

The tools used in this phase examination are sample pots, sticks, microscopes, glass objects, cover glass and drop pipets. The material used in phase examination is sample faeces, eosin solution 2% and tissue.

Data Collection Procedure

The data collected is a quantitative test obtained from the number of feces samples from children in grades 1-3. The sampling method was purposive sampling and several analytic method steps, such as: drop 1 drop of 2% Eosin solution on the slide, then take ±2 mg of faeces and mix it with 1-2 drops of 2% Eosin solution until homogeneous, cover using a glass cover until the glass cover covers the preparation so that no air bubbles form, and the specimen was observed under a microscope using 10x and 40x magnification.

Post analytics using microscopic examination assessment uses qualitative methods as follows: Positive result (+): *Ascaris lumbricoides* worms are found in children in grades 1-3 at Simokerto Elementary School, Negative result (-): *Ascaris lumbricoides* worm eggs are didn't found in children in grades 1-3 at Simokerto Elementary School.

RESULTS AND DISCUSSION

Results

The results of this research were obtained in the form of primary data information, that results of questionnaire and microscope examination as well as data on age, class and gender. There were 42

samples taken by purposive sampling at Simokerto Elementary School.

Table 1. Distribution of respondents based on age

Age	Number of Students	Percent (%)
7 years	16	38
8 years	13	31
9 years	6	14
10 years	7	17
Total	42	100

Based on Table 1, it shows that respondents aged 7 years as many as 16 (38%), respondents aged 8 years were 13 (31%), respondents aged 9 years were 6 (14%) and respondent aged 7 (17%).

Table 2. Distribution of respondents by class

Class	Number of Students	Percent (%)
1	14	33,3
2	14	33,3
3	14	33,3
Total	42	100

Based on Table 2, it shows that out of 42 respondents there were 14/42 (33.33%) class 1 respondents, class 2 respondents were 14/42 (33.3%), class 3 respondents were 14/42 (33.3%).

Table 3. Distribution of respondents by gender

Gender	Number of Students	Percent (%)
Male	22	52,3
Famale	20	47,6
Total	42	100

Based on Table 3, it shows that out of 42 respondents there were 22/42 (52.3%) of the respondents were male and 20/42 (47.6%) were female.

Table 4. Distribution of respondents based on diagnosis

Diagnosis	Number Of Students	Percent (%)
Diarrhea	5	11,9
Weight loss	10	23,8
Decreased appetite	27	64,2
Total	42	100

Based on Table 4, it shows that 42 respondents at Simokerto Elementary School had problems with Ascariasis which were heavily influenced by the disease suffered by the respondent is not genetic. The disease consisting of diarrhea as many as 5(11.9%), weight loss 10 (23.8%), and decreased appetite 27 (64.2%).

Discussion

This research was carried out in the Entomology Parasitology Laboratory of the Health Polytechnic of Ministry of Health, Surabaya. Type of research used is a descriptive research method with a fecal sample population from 42 students in grades 1 to 3 of Simokerto Elementary School, consisting

of 22 male students and 20 female students whose stool samples will later be examined to find *Ascaris lumbricoides* eggs by laboratory examination using the direct analysis using wet preparations with the help of 1% eosin solution then examined under a microscope with 10x and 40x magnification which is stated by the examination results.

Based on research Nurhidayanti and Permana, 2021 regarding stool examination using the native method (Direct slide) in detecting ascariasis. The results of resear chusing the native method (Direct slide) showed that 7 were found positive samples for *Ascaris lumbricoides* worm eggs. The conclusions were obtained the results of the examination showed that there was no difference in the native method (Direct slides). Research results that are not effective in detecting worm eggs may occur influenced by several things including inspection errors, internal errors using tool sand materials and in collecting feces when using The direct method and sedimentation method are not perfect homogenize the stool sample, put toolittle sample in the tube, drip mostly 2% eosin reagent. Error at the start of feces collection from humans or hosts, whether taken from disposal sites or toilets or in directly from the perianal area and mixed with urine. the error There is contamination in the feces which causes other elements to appear in the feces inspection.

The results of research on the characteristics of respondents show There were 16 respondents aged 7 years (38%), aged 8 years as many as 13 people (31%), 6 people aged 9 years (14%), while those aged 10 years were 7 people (17%). Research result age distribution of respondents, the youngest respondent is 7 years old and soon the oldest is 10 years old. Age has an influence on grasping power and patterns someone thought. The older you get, the more your power will develop capture and thought patterns (Suryabrata, 2011). The results of research on gender distribution, the majority of respondents 20 people (47.6%) had female gender, whereas 22 people (52.3%) were male. Gender differences, neither male nor female gender influences attitudes students significantly. Despite the differences in attention given respondents during counseling, where female students paid more attention than male students. The results of this study are consistent with research conducted by Wikurendra et al., 2021 which states that attention to girls has a significant difference compared to men. Attention is more or less awareness accompanying an activity carried out by (Listyowati, 2012).

CONCLUSIONS

Based on the results of research on hand washing behavior with soap and without using soap against the incidence of ascariasis in children in grades 1–3 in Simokerto Elementary School can be concluded was no relationship between washing hands with soap and do not use soap against ascariasis.

Author Contribution

Rinda Anggriyani: Conceptualization, writing draft and editing; Yauwan Tobing Lukiyono: Data curation; Ary Andini, Andreas Putro Ragil Santoso: Formal analysis.

Conflict of Interest

There is no conflict of interest in this study.

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Data Availability

We thank all respondents involved in this research project.

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