



The Affecting Factors Occurring of Worms in Roof Tile and Bricks Craftsmen in Boyolali

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Article Info

History of Article:
Accepted 21 February
2019
Approved 11 June
2019
Published 20 August
2019

Keywords:
Knowledge,
Personal hygiene,
Environment
sanitation,
Genesis Helminthiasis

Abstract

Worms is a worm infestation of one or more intestinal parasites consisting of intestinal nematodes class. Including transmission through soil or worm species commonly called the Soil Transmitted Helminths (STH) are *Ascaris lumbricoides*, *Trichuris trichuira*, *Ancylostoma duodenale* and *Necator americanus*. The purpose of this study analyzes the factors that influence the incidence of worm craftsman tiles and bricks in the Village Karanggeneng Boyolali. This research is quantitative, with cross sectional approach. These samples included 88 respondents obtained by simple random sampling technique. Data collection techniques were interviews, observation (observation) and laboratory testing. Analysis of the data in this study using Fisher's Exact test and Multiple Logistic Regression Test. Results of the study found no effect on knowledge variable ($p = 0.007$), handwashing ($p = 0.003$), latrine ownership ($p = 0.001$) on the incidence of intestinal worms in the village Karanggeneng Boyolali. The most influential variable in this study is the latrine ownership variable with $OR = 0.406$.

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p-ISSN 2528-5998
e-ISSN 2540-7945

INTRODUCTION

Genesis Worms still a public health problem. More than one billion people are infected by the *Soil Transmitted helminthes* (STH) (Freeman et al., 2015). Data from the World Health Organization (WHO) in 2019 stated that over 1.5 billion people or 24% of the world population is infected by a worm that is transmitted through the ground. The incidence rates are in sub-Saharan Africa, the Americas, China and East Asia.

STH infection incidence in the fishing village of Batu Karas Cijulang Pangandaran found 37 fishermen (23.3%) positively diagnosed eggs of *Ascaris lumbricoides* (Herdiansyah, 2016). In Kediri total of 57 farmers (95%) infected with *Soil Transmitted Helminth* caused by poorly maintain *personal hygiene* after the work and before eating (Nugrahaeni, 2018).

Another study also states that workers red brick craftsman infected 95.5% were positive for *Ascaris lumbricoides* because knowledge is still lacking (52.85%) and lack of hygiene prevents individuals (28.57%) (Hasyimi, 2011). Research results by Mahar (2008) shows that the 40 worker tiles are infected STH 22.5%, of which 5% were infected with *Ascaris lumbricoides*, and 17.5% were infected with *Trichuris trichiura*.

The proportion of worm infections in the tile industry workers Kebulusan Kebumen Regency Sokka village shows the results 7.5% infect by larvae / eggs of *Ascaris lumbricoides* and *Trichuris trichiura* (Faiz, 2016).

Based on a survey of craftsmen precarious workers and bricks, they perform the work there are barefoot and all pengarajin not wearing gloves. Personal hygiene and environmental sanitation is still lacking workplace. It can be seen from the habits of workers after work does not wash his hands before eating. Types of floor in the workplace are still made from the ground and the lack of cleanliness of the workplace. These circumstances facilitate the emergence of de-worming craftsmen. In addition, all workers encountered never check their health, especially related to the examination of STH infections.

The purpose of this research to analyze the influence of knowledge, handwashing, use of

footwear, latrine ownership at home, and clean water supply), and the most influential factors on the incidence of intestinal worms craftsman tiles and bricks in the Village Karanggeneng Boyolali.

METHOD

The study was conducted using cross sectional approach. The population of the entire craftsman roof tiles and bricks in the Karanggeneng village consist of 113 people. The sample in this study as many as 88 people, determined with Slovin formula using the simple random sampling technique.

The independent variable in this research is knowledge, handwashing, use of footwear, latrine ownership and cleans water facilities. The dependent variable in this study is the incidence of intestinal worms. Data collection techniques in this study was conducted by interview, observation (observation) and laboratory testing

In this study, multivariate analysis is to look at the influence of independent variables and the dependent variable using multiple logistic regression tests.

RESULTS AND DISCUSSION

This research was conducted in the village of Karanggeneng Boyolali in December 2018-January 2019.

Table 1. Univariate analysis

variables	Categor y	Frequenc y	Presentatio n
Knowledge	Bad	41	46.6
	Well	47	53.4
Hand Washing Habits	Bad	40	45.5
	Well	48	54.5
Use of Footwear	Bad	17	19.3
	Well	71	80.7
Latrine ownership	Bad	34	38.6
	Well	54	61.4
Clean Water	Bad	29	33
	Well	59	67
Worm eggs of <i>Ascaris lumbricoide s</i>	Negative		
	Positive	67 21	76.1 23.9

Based on Table 1, The level of knowledge of good category were 47 (53.4%) of the respondents, the results of the questionnaire showed that most respondents the level of knowledge on the incidence of intestinal worms are good, but there are still some respondents who do not know about the causes of the worm, and how prevention. Results of preliminary interviews indicate that there are still some respondents who do not know about worm incident, as well as how to prevent and treat it. This is according to research by Lubis (2016) that a good knowledge will reduce the risk of the incidence of intestinal worms. According Lyndasari (2018) states that good level of knowledge also reduces the incident Diabetes mellitus Type II. Knowledge also affects menstrual hygiene in adolescents (Ningrum, 2018).

Hand washing good category were 48 (54.5%) of respondents. The result of the questionnaire is most respondents own washing hands after work. At the moment of observation

they found some respondents who had long nails, though already good hand washing habits. Transfer of worm eggs also through dirty hands or fingernails were less guarded cleanness. Supported by research from Ali (2015) that good hand washing habits, would reduce the risk of infection of worms. Nuryanti study (2016) suggests that the prevalence of STH higher for larger mainland STH infection by a factor of less hand washing. Personal hygiene was also influenced by the existence of *E. coli* in drinking water refill Semarang District (Aprilia, 2018).

The use of footwear good category were 71 (80.7%) of respondents. Obtained from the questionnaire, most respondents already wear footwear at work. Found from some respondents at the time of their work using the boot. Children are often contaminated with soil, large-risk infected with hookworm in particular (Amaliah, 2016).

Latrine is ownership both categories by 54 (61.4%) of respondents. From the observation of the latrine ownership for all respondents, the majority of respondents have latrines, qualified healthy latrines. The existence of latrines at home is also a major factor supporting against worm infection, with defecation can accelerate the spread of worm disease (Herdiandyah, 2016).

Clean water facilities both categories with 59 (67%) of the respondents, the results of observes about source of clean water, most of the respondents had already qualified for the use of water, although the majority of respondents still use wells as a means used for everyday purposes such as bathing, and washing clothes. In line with the research Islamudin (2017) that most respondents management of fresh water resources in both categories. Availability of clean water is clearly greatly affect the existence of latrines, if clean water is available then the use of toilet will also be high, the results of this research states that there is influence the availability of clean water with the use of toilet (Oktanasari, 2017). Other studies have also found a strong link safe water and excreta disposal with the incidence of diarrhea in the flood area and not flood tidal ebb (Satiti, 2018). An environmental factor is the risk of leprosy (Siswanti, 2018). Distribution of

dengue cases has relevance in partial and related to environmental factors (Yana, 2017).

Worm incident infection in this study was found 21 (23.9%) of respondents infected with *Ascaris lumbricoides* types. This study is in line with research Tirtayanti (2016) that the majority of tile artisans in the village of Kediri, Tabanan Pejaten infected with *Ascaris lumbricoides*.

In bivariate analysis, independent variable in this research is knowledge, handwashing, use of footwear, latrine ownership and cleans water facilities. The dependent variable in this study is the incidence of intestinal worms. The bivariate analysis is using Fisher's exact test.

Table 2.Bivariate analysis

variables	P - value worm incident
Knowledge	0.009
Hand Washing Habits	0.000
Use of Footwear	0.540
Latrine ownership	0.000
Suggestions Water	0.101

Based on Table 2, Variable level of knowledge with p-value of 0.009 has a significant relationship to the incidence of intestinal worms. In line with the research by Selomo (2013), knowledge is very important for the formation of a person's actions. Good conduct or behavior that can reduce the risk of disease. Knowledge of one's influence and status Worms very important role to prevent worm diseases, so that the tendency of low knowledge will further increase the risk of infection by worms.

Variable hand washing with a p-value of 0.000, has a significant relationship to the incidence of intestinal worms. Research Tirtayanti (2015) mentions that the poor hand washing risk of being infected by the worm eggs (42.3%) due to good hand washing using soap and water can reduce the risk of worm infection and will turn off the worm eggs are attached to the hands and nails. In line with the research Wijaya (2011)

suggests there is a significant relationship between hand washing habits to the incidence of diarrhea in infants. Hand washing with soap has a better chance to avoid the risk of transmission of infection remedy STH (Nuryati, 2018).

Latrine ownership with p-value of 0.000, has a significant relationship to the incidence of intestinal worms. According Notoatmodjo (2007), with the latrines affect the health of the environment. To prevent or reduce fecal contamination of the environment then the stool must be disposed of at a certain place in order to become healthy latrines. In line with the research Wijaya (2011) states that there is a significant relationship types of latrines owned home on the incidence of diarrhea in infants.

On multivariate analysis, in research is using Multiple Logistic Regressions.

Table 3.Multivariate analysis

variables	Sig.	Exp (B)	95% EXP (B) Lower	CIFOR Upper
Knowledge	0.007	0.021	0.001	0.349
Hand Washing Habits	0.003	0.015	0.001	0.252
Latrine ownership	0.001	0.406	0.237	0.698

Based on Table 3, Results of Multiple Logistic Regression analysis is that the level of knowledge has a p-value of 0.007 which means to have a significant influence on worm incident. In line with the research Wijaya (2011) states there is a relationship between knowledge on the incidence of diarrhea in infants. According Rahmayanti (2014), there is a correlation between attitude with STH infection in grade 1, 2 and 3 SDN Pertiwi Lamgarot Ingin Jaya subdistrict, Aceh Besar district. Knowledge through health promotion approach is the prevention of health problems the right to change people's behavior, knowledge of individual health efforts to maintain the health of yourself, improve and enhance the

value of health, and prevent disease (Notoadmodjo, 2007).

Hand washing with a p-value of 0.003, with significant influence on the incidence of intestinal worms. Erna Research, (2015) stated there is a relationship between hand washing with worm. This is in line with the results Oktavia (2011) which showed that there was a significant relationship between hands washing with worm. This study was supported by Erna (2015), that behave wash hands with soap before eating students is still low, judging by 77.5% of respondents do not have the habit of washing hands with soap before eating. The habit of washing hands with soap after defecating on the respondents' own good. There are 73.2% of respondents have washed their hands with soap after defecating poor personal hygiene will be easily infected with intestinal worms, it is possible for respondents who did not consume the worm infected with worm medicine, and environmental hygiene is not good, clean water is lacking, and the lack of hygiene of food (Butarbutar, 2012).

Latrine is ownership with p-value of 0.001 which has a significant influence on the incidence of intestinal worms. OR of 0.406, which means respondents latrine ownership has a better chance against worm infection incidence compared with the variable knowledge, and hand washing. Nurfalq (2015), showed no significant association between the availability and condition of latrines with events STH with p value = 0.000 means that the prevalence of STH on the availability of latrines that do not qualify 2.842 more risky than the prevalence of infestation STH on the availability and condition of latrines that meet requirement.

Tirtayanti Research, (2015) mentions that the highest prevalence of helminth eggs of *Ascaris lumbricoides* (53.8%) due to be affected by soil conditions and rainfall and optimal temperature this worm breeding. *Ascaris lumbricoides* very high frequency ranges between 20-90%. The infective eggs can live a long time and is resistant to the adverse effects that the prevalence is high.

This research is in line with research Nasir, (2015) explains that the incidence of infestation *Ascaris lumbricoides* more men (30.6%) this can happen because the research area of male

respondents more activity on the ground and less attention to hygiene thus enabling easier STH infestation.

CONCLUSION

Factors that influence the incidence of worm craftsman tiles and bricks in the Village Karanggeneng Boyolali are knowledge, hand-washing and latrine ownership.

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