

REVIEW ARTICLE

Effect of the 7-step handwashing technique and food sanitation in preventing intestinal parasitic infection: giardiasis (*Giardia lamblia*)

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Over time, *Giardia lamblia* has become the most dominant causative factor in gastrointestinal diseases in developing countries. The spread of these parasites can also occur through water and food contaminated with sewage and anal sex. In children, transmission of Giardiasis usually occurs through fecal-oral transmission or transmission of the disease from stool to mouth. This study was created to educate readers about the importance of proper hand washing and maintaining food sanitation as well as changing your lifestyle to be cleaner and taking care of yourself and those around you in preventing *Giardia lamblia* infection and exposure to Giardiasis. The research method used is a literature review. Selected references from journals, the internet and libraries. Most cases occur through Food Born Disease or food that has been contaminated, in this condition it can occur from various possible causes, it could be due to a lack of hygiene level on the part of the seller or buyer.

Keywords: Giardiasis, *Giardia lamblia*, Food Sanitation, Parasitic Infections.**INTRODUCTION**

Intestinal parasitic infections are increasingly troubling to the public, especially people who live in less clean environments and low levels of hygiene. The lack of knowledge and awareness of the public in maintaining cleanliness and a healthy lifestyle is very influential in increasing the exposure index of intestinal parasitic infections.

Hand washing efforts using the 7-step technique affects interpersonal health. Interpersonal health can include efforts to prevent and address health problems that target the person and the community involved. Large cities have the potential to increase the prevalence of *Giardia lamblia* parasitic infections and exposure to Giardiasis. This is triggered by several factors, one of which

is the lack of food sanitation that causes Foodborne Illness or contaminated food. Transmission of giardiasis can occur through the mouth of the parasitic host through fecal media (Harun et al., 2019).

Applying the 7-step handwashing technique is one of the healthy and clean living behaviors that is currently the talk of the world, this happens because of the implementation of controversial handwashing procedures that are not good enough not only in developing countries but also in developed countries, in the density of people who still often forget to wash their hands and change their lifestyle to be cleaner and better. This has an impact on

The prevalence of Giardiasis is relatively high in countries such as Indonesia. This has an impact on the relatively high prevalence of Giardiasis in countries such as Indonesia. Education related to the importance of implementing good sanitation, especially how to wash hands properly, is very necessary for elementary school children. Their age is very vulnerable to exposure to diseases from all directions, therefore it is necessary to provide assistance and education on washing hands properly to minimize the spread of giardiasis (Fransisca et al., 2015).

The habit of washing hands among teenagers to children still has many shortcomings. They are not given education on the importance of washing their hands before and after doing activities, therefore it is very necessary to hold counseling about washing hands and the impact if they do not wash their hands. Within the scope of elementary school alone, there are still those who do not understand how to implement the habit of washing hands properly (Artika et al., 2017). Special attention needs to be paid to the level of doneness and cleanliness of the food to be served. The existence of damage from food can never be separated from how the level of cleanliness is created by the person who manages and serves, as well as the surrounding environment that supports it (Windy, 2019).



Figure 1. Footage of the sale of unhygienic snacks

Hand washing is often taken for granted or even trivialized, even though it has been given the understanding that every disease will start through the mouth and hands. Washing hands using the 7-step technique is very good, especially if this is uniformed with good soap as well. School children are even more frequent and more accustomed to consuming something without washing their hands first. This is due to the lack of children's understanding of hand sanitation in every incident (Purwandari and Ardiana, 2013). In general, this study was conducted to educate readers about the importance of proper hand washing and food sanitation, as well as changing lifestyles to be cleaner and taking care of themselves and others in preventing *Giardia lamblia* infection and exposure to giardiasis.

MATERIALS AND METHODS

Using a literature review research design, references were selected through journals, the internet and literature to be able to determine the effect of the 7-step handwashing technique in preventing intestinal parasite infection *Giardia lamblia* on exposure to Giardiasis disease. As well as the lack of sanitation of food and drinks that will have a big impact and may be the main cause of this parasitic infection. Focus on Literature Review This is to provide an understanding and overview of the results of research or research on "The effect of the 7-step hand washing technique and food sanitation in preventing giardiasis from the parasite *Giardia lamblia*". Search strategies using Copyright © accredited journals, namely Google Scholar, Research Gate. This research process is carried out by entering keywords in English and Indonesian such as "Giardiasis" + "Food Sanitation" + "Hand washing factor" "Reservoir Infectious *Giardia lamblia*". The process is carried out to support and validate research results on the topic in a systematic manner.

According to Harun et al., 2019 Giardiasis can be diagnosed based on clinical symptoms, physical examination and the presence of trophozoites or cysts of *Giardia lamblia* in fecal samples when observed microscopically. Mild infections will rarely cause clinical symptoms, and carriers will find *Giardia lamblia* cysts more often, but patients with diarrhea will find trozoites more often.

The steps involved in this literature review include a thorough observation of the material at hand, relevance, and quality of the sources. Thus this article will provide an understanding of the effect of the application of 7-step hand washing with food sanitation factors in dealing with intestinal parasitic infections or *Giardia lamblia* parasites.

RESULTS AND DISCUSSION

According to the research of Harun et al., 2019 the examination of fecal samples is a standard examination to find cysts or tropozoids of *Giardia lamblia*. By collecting stool samples on 3 occasions but periodically due to the circulation of parasitic cyst excretion inntermitten occurs. It is possible to find at least 50% - 70% of these parasites in a one-time examination of stool exposed to Giardiasis.



Figure 2. Microscopic features of Giardia Lamblia on fecal examination

In an effort to socialize this handwashing technique, it can increase knowledge about several things related to handwashing with the 7-step technique. This knowledge can be obtained from direct or indirect experience, or through education from the learning process related to health.

A person's knowledge of hand washing using the 7-step handwashing technique can reduce the number of viruses or bacteria that cause a person to contract diseases, such as diarrhea in a person.

Some people understand the importance of washing their hands well after doing activities outside or before drinking or eating something.

According to Nadiya and Asharina, 2016 one of the causes of *Giardia lamblia* infection is the lack of food sanitation or the lack of hygiene grade of snacks that are traded in the scope of children. This is usually called Food Born Disease, this comes from food or even snacks that are not clean or undercooked. When the food is not clean and undercooked, there will automatically be bacteria or microbes that survive and can very well contaminate consumers.

According to Trigunarso, 2020 one of the factors of lack of food sanitation is also obtained from the feasibility of containers, or food or snack storage places, $\leq 83\%$ of hawker or food traders do not pay attention to the feasibility of storing their merchandise. Using newspaper, plastic, or just a thin cloth will be very risky of being exposed to several microbes that are in the open air and insect contact.



Figure 3. An overview of traders who do not pay attention to the closing of the trading material

According to Permatasari et al., 2021 special attention is needed in the presentation of the food to be sold, such as paying attention to the sales container and the environment around the seller in order to increase the level of food hygiene and when touching a food, you must also pay more attention to the level of hand hygiene so as to minimize exposure to bacteria. On the other hand, there are still traders who ignore important things such as the consistency of the washing cookware or the sales area, as well as pay attention to dust or air contamination that can occur from not covering the food using a serving hood or other cleaning cover.

According to Hanevik et al., 2007, there are several symptoms that sufferers will experience before clinical examination and microscopically. Such as fever, pain in the abdomen, prolonged diarrhea, very strong smell of feces, sulfur smell in the mouth. As well as the consistency of stool which is also different from usual, tends to be darker, slimy, or there may be a little blood, as well as a very strong odor. The stool will tend to be more liquid or semisolid.

According to Fantinatti et al., 2022 in addition to patients with symptoms, there are also patients without the slightest symptoms. But usually asymptomatic patients will know the indications or signs of the consistency of the stool when they have a bowel movement. In addition to the consistency of feces, the smell of feces is also very different. Some of these things make sufferers realize that something not good, it's okay with their digestive system.



Figure 4. An example of the macroscopic appearance of the feces of Giardiasis patients

It would be a little impossible to change the facts for the better in a short span of time. Preventive measures through education and dissemination of information will take longer. However, there are several possibilities that can permanently reverse the situation for the better, one of which is due to interpersonal or intrapersonal awareness factors and is not caused by coercion.

By implementing food sanitation properly and doing 7-step hand washing techniques before and after activities, it may make a significant change to the anxiety of *Giardia lamblia* parasite infection in the community and even the educational scope such as elementary school children or preschool children.

CONCLUSIONS

Through research that has been conducted using the literature review method, it was found that several related articles/journals state that the effect of the 7-step handwashing technique and food sanitation on the prevention of intestinal parasitic infections. This problem occurs due to the lack of awareness of the surrounding community about the cleanliness of food, drinks, or the surrounding environment. Lack of education on how to wash hands properly and lack of habit of washing hands before and after activities. This condition makes people vulnerable to exposure to Giardiasis disease caused by the *Giardia lamblia* parasite which is transmitted through contact with contaminated goods, food, or drinks. Most cases occur through Food Born Disease or contaminated food, in this condition it can occur from various possible causes, it can be caused by a lack of hygiene value from the seller or buyer.

Author contributions

Nailah Zahrah Ardiningrum, Yauwan Tobing Lukiyono: Conceptualization, analysis, draft writing, and editing.

Conflict of Interest

There is no conflict of interest in this study.

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Data availability

Data related to the findings of this study are available at the corresponding author.

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