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THE OUTBREAK OF HEPATITIS A: EVIDENCE IN PACITAN DISTRICT

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Abstract

Introduction: *Indonesia is a country with a high geographical distribution of hepatitis A. In June 2019, the government established the status of hepatitis A outbreaks in Pacitan District, which is spread across several districts. Based on data from the District Health Office of Pacitan, there were 1,310 peoples with hepatitis A on October 2019. Through this study, the relation between knowledge, attitudes, and personal hygiene as risk factors of hepatitis A outbreaks in Pacitan District can be identified.* ***Methods:*** *Observational analytic methods and case control research design were used in this study. The population was 280 people. The sample consisted of 60 peoples with case of 30 peoples and control of 30 peoples. Case and control samples were taken randomly (simple random sampling). The research data were collected using the interview method, then analyzed using the Chi Square test and the Contingency Coefficient.* ***Results and Discussion:*** *There was a correlation between knowledge level with the occurrence of hepatitis A outbreaks (p-value = 0.002 <0.05), attitudes with hepatitis A (pvalue = 0.004 <0.05), and personal hygiene with the occurrence of hepatitis A outbreaks (pvalue = 0.001 <0.05).* ***Conclusion:*** *Inadequate knowledge, inappropriate personal hygiene lead to the spread of hepatitis A outbreaks in the working area of Primary Health Care of Ngadirojo, Pacitan District.*

INTRODUCTION

Hepatitis is still one of several public health problems in the world, especially in developing countries and regions with low income (1). Hepatitis has a major impact on worldwide morbidity and mortality. In particular, it is estimated that 1.5 million new cases of hepatitis A are found every year. WHO also estimated in 2016 there were 7,134 people who died from the hepatitis A virus worldwide (2). Outbreak of hepatitis A in Indonesia occurred 6 provinces and 11 districts / cities as many as 495 cases in 2013, while in 2014 in 3 provinces and in 4 districts / cities as many as 460 cases (3). In 2018, cases of hepatitis A has recurred 9 times in 5 provinces and 8 districts with a total of 564 cases (4). In 2019, hepatitis A sufferers increased many times over the previous year, namely 2447 cases (5)

Hepatitis A is caused by Hepatitis A Virus Infection (HAV). Infection through food and water that has been contaminated with HAV is a common cause. People who have suffered from hepatitis A can transmit it to other people through direct contact or fecal-oral (6). Hepatitis A virus is a non-level RNA virus classified as picornavirus. HAV can only last long in its host which is humans. HAV can also be stable in the environment for months at low pH levels and moderate temperatures. However, it can be destroyed at high temperatures ≥ 80°C, with formalin and chlorine (7).

The HAV virus that has infected the body takes an average of 14-28 days for symptoms to appear. Clinical symptoms that usually appear when a person has been infected with HAV include jaundice, dark urine, and tender hepatomegaly with fever, malaise, fatigue, anorexia, vomiting, abdominal discomfort, diarrhea and jaundice. Symptoms of hepatitis will usually appear in adults (8). The virus in human body suffering from hepatitis A willreplicate in the liver, excreted in bile and excreted in the feces (9).

In June 2019, the Government of Pacitan District determined an outbreak of hepatitis A in Pacitan District. According to data from the District Health Office of Pacitan, the hepatitis A outbreak that occurred in June-October 2019 found 1,310 cases of hepatitis A which spread across 13 primary helath care working area. Based on the results of the preliminary survey, there were 5 patients who had a history of using mountain springs and clean water tanks as clean water sources. Then the patient had a history of using refilled drinking water produced by small and medium enterprises in the village and well water as a source of drinking water. There were three sufferers who used well water as a source of drinking water without boiling water before consumption. The patients who had not applied hand washing properly and correctly were as many as four out of five sufferers. Patients also used the same eating utensils in turn. There were two children sufferers who had the habit of snacking in the school canteen with poor personal hygiene.

Therefore, researchers want to conduct research based on the incidence of hepatitis A that occurred in Pacitan District. This study aims to find out the correlation between knowledge, attitudes, and personal hygiene as risk factors for hepatitis A in Pacitan.

METHODS

This study used an observational analytic method with a case control study design. The working area of Primary Health Care of Ngadirejo in Pacitan District was the location for this research which took place in October 2019-February 2020. The study population was all residents suffering from hepatitis A throughout Pacitan District. The object of this research were patients (cases) and non sufferers (controls). The case group was taken from hepatitis A patients who were registered at Primary Health Care of Ngadirejo. The control group was patients of Primary Health Care of Ngadirejo who did not suffer from Hepatittis A. The sample size was calculated using the Lemeshow formula (10) so that the sample size was 30 case groups and 30 control groups. The sampling technique was carried out randomly or Simple Random Sampling.

The dependent variable in this study was hepatitis A cases. The independent variables in this study were knowledge, attitudes and personal hygiene. Secondary data were obtained from recapitulation of hepatitis A sufferers in Pacitan District for the period of October 2019 which were obtained from the Pacitan District Health Office and Primary Health Care of Ngadirejo, Pacitan District. Then the independent variables use primary data. Primary data obtained through direct observation to the research location, interviews, and through the results of filling out questionnaires.

The data was collected using the interview method to measure the knowledge and attitudes of respondents regarding the symptoms, the mode of transmission, prevention and treatment of hepatitis A. Respondents were divided into high knowledge with 65-100% of correct answer and low knowledge with ≤ 64% of correct answer. Respondents were divided into positive attitude with 61-100% of correct answer and negative attitude with ≤ 60% of correct answer. The observation method was carried out to determine the personal hygiene of respondents in preventing hepatitis A such

as good and correct hand washing habits, the habit of using eating and drinking utensils separately, the habit of consuming healthy food and drinks, good and correct defecation behavior. Respondents were divided into good personal hygiene with applied 65% -100% of the assessed personal hygiene criteria and poor personal hygiene with applied ≤ 64% of the assessed personal hygiene criteria. Medical record data from the Pacitan District Health Office and Primary Health Care of Ngadirejo containing the names and addresses of hepatitis A sufferers and a structured questionnaire were used as the source of patient data. Data were analyzed and presented in tabular form. Data were analyzed using the chi square test, and the contingency coefficent for the bivariate test.

RESULTS

Respondent Characteristics

The results of the univariate analysis test regarding the characteristics of the respondent were gender, age, and education. The subjects in this research were 60 respondents, with 30 case and 30 control respondents. Most of the respondents were 71.7% female and 38.3% were 26 - 45 years old. Whereas, most of education level was 53.3% in (Senior High School, University) (Table 1).

Table 1. Characteristics of Respondents in Pacitan District

Characteristics of Respondents	Frequency	Percentage (%)
Sex		
Male	17	28.3
Female	43	71.7
Age (year)		
12 – 25	14	23.3
26 – 45	23	38.3
46 – 65	22	36.7
>65	1	1.7
Educational status		
Ungraduated, Primary School, Junior High School	28	46.7
Senior High School, University	32	53.3

Knowledge Level

Analysis of the correlation test between knowledge and the occurrence of hepatitis A outbreaks showed that respondents with high knowledge about the incidence of hepatitis A were 23.3% in the case group, while 63.3% were in the control group. Respondents with low level of knowledge about the incidence of hepatitis A, 76.6% were patients (cases) and 36.7% were non-sufferers (controls).

The results showed p-value = 0.002 (p <0.05), there was a significant correlation between the respondent's level of knowledge and the occurrence of hepatitis A outbreaks. The Odds Ratio (OR) calculation of knowledge on the occurrence of hepatitis A outbreaks was 5.675 at the confident interval of 1.841 - 17.494 (Table 2).

Attitude

the result of the respondent's positive attitude and the occurrence of hepatitis A outbreaks was 26.7% (8 people) in the case group, while as many as 63.3% (19 people) in the control group. Respondents with negative attitudes were 73.3% (22 respondents), in the case group and 36.7% (11 respondents) in the control group.

The results of Chi-Square analysis obtained p-value = 0.004 (p <0.05), there was a correlation between the respondent's attitude and the occurrence of hepatitis A outbreaks. The results of Odds Ratio (OR) calculation of attitudes towards the occurrence of hepatitis A outbreaks was 4.75 at confident interval of 1.584 - 14.245 (Table 2).

Table 2. Frequency Distribution of Respondents Based on Knowledge Level, Attitudes, and Personal Hygiene

Variable	Hepatitis A				p	OR	95% CI
	Cases		Control				
	n	%	n	%			
Knowledge Level							
High	7	23.3	19	63.3	0.002	5.68	1.841 – 17.494
Low	23	76.7	11	36.7			
Attitudes							
Positive	8	26.7	19	63.3	0.004	4.75	1.584 – 14.245
Negative	22	73.3	11	36.7			
Personal Hygiene							
Good	18	16.7	18	60	0.001	7.5	2.244 – 25.062
Poor	12	83.3	12	40			

Personal Hygiene

The result of respondents' personal hygiene and the occurrence of outbreaks of hepatitis A were obtained as many as 16.7% (5 respondents) in the case group, while 60.0% (18 respondents) in the control group. Respondents with poor personal hygiene were 83.3% (25 respondents) in the case group and 40.0% (12 respondents) in the control group.

The results of Chi-Square analysis obtained p-value = 0.001 (p <0.05), there was a correlation between the proportion of personal hygiene and the

occurrence of hepatitis A outbreaks. The results of Odds Ratio (OR) calculation on personal hygiene against the occurrence of hepatitis A outbreaks was 7.5 in confident interval of 2.244 - 25.062 (Table 2).

DISCUSSION

Hepatitis A sufferers will experience inflammation of the liver which can have mild to severe effects. The spread of the hepatitis A virus can occur fecal-orally, when a person accidentally eats food or drinks a drink that has been contaminated with the feces of a infected person with HAV. HAV is thermostable, resistant to acid, and resistant to bile (11-12).

In this research, the results of the characteristics' description was mostly males and their last education was junior and senior high school. These characteristics of respondents can be a risk factor for the low level of knowledge about hepatitis transmission (13). The susceptible age group to contracting hepatitis A was the adolescent age group due to the lack of knowledge and habits or daily activities, thus activities, eating, and playing outside the home cause easily contract to hepatitis A from other people whom they meet every day (14).

Lack of information sources obtained and accessed by sufferers and non-sufferers in the working area of Primary Health Care of Ngadirejo and the low level of health education provided were factors causing the low level of knowledge. It was due to have more and broader knowledge from various sources (15). Sources of information can be printed media or electronic media (internet, television, radio, etc.).

This extraordinary incident of hepatitis A in Primary Health Care of Ngadirejo working area of Pacitan District occurred in a village area with a geographical condition of 30% steep highlands and the limestone of mountain plateau, resulting in the lack of public knowledge regarding information on infectious diseases such as hepatitis A and other health information. The provision of information through counselling and outreach activities regarding the dangers of hepatitis A was only performed by Primary Health Care of Ngadirejo after the hepatitis A epidemic. Supposedly, the provision of all information on health and infectious diseases was conducted as a promotional and preventive step to prevent the occurrence of infectious diseases even to the point of becoming an epidemic or outbreak.

Efforts to increase the level of knowledge can be performed through health education and health promotion on the prevention of hepatitis A which was easily accepted and implemented by the community, thus there will be no more cases of hepatitis A in Pacitan District. In accordance with the results of research in Bondowoso District, there was an effect of increasing the community in Kapuran Village regarding hepatitis A before and after health promotion (16).

Based on the theory, it was stated that a positive attitude will facilitate the realization of healthy behaviour (15). The results of research in the working area of Primary Health Care of Ngadirejo, Pacitan District proved that respondents who have negative attitude were prone to illness, such as hepatitis A. This happened due to the lack of public awareness about how to behave when someone showed symptoms of the disease, especially hepatitis A. The majority was indifferent to the things about the prevention of hepatitis A. For instance, wash hands properly. Besides that, high mobility and activity at the time of the first case appear become the driving factors for this disease to spread rapidly. Research in Jambi proved that there was a correlation beetwenattitude and the incidence of hepatitis A in Tanjung Jabung Timur District, Jambi (17).

Efforts needed to change attitudes is changing wrong thoughts about hepatitis A, by receiving in-depth information and paying attention to Hepatitis A either through mass or electronic media. Community habits gradually change after post-outbreak activities were conducted, by conducting regular counselling, observing, and giving chlorine to water sources consumed by sufferers, routine health monitoring of all areas where people suffer with hepatitis A. Positive attitude will facilitate the realization of healthy behaviour (15).

In this study, respondents were considered to have good personal hygiene with the habit of correct hand washing, using separate eating and drinking utensils, consuming healthy food and drinks and defecation behavior. However, after undertook the research, there were 83.3% of respondents with poor personal hygiene. It was caused by , unhealthy eating habits, which often consuming food and drinks simultaneously with other peoples. This eating habit could be a means of transmitting the hepatitis A virus if one of them was already suffering from hepatitis A. Then, the habit of buying food at poor sanitation facilities and the cooking habit of half cookedfood were common cause of of hepatitis A incidence in working area of Primary Health Care of Ngadirejo, Pacitan District. In addition, the behavior of open defecating can cause groundwater sources to be contaminated by feces of people with hepatitis A.

The most effective way to prevent transmission is washing hands properly (18). Research showed that washing hands with soap was the most prominent behavior correlated with the occurrence of hepatitis in Indonesia. Most of the respondents who suffered from

hepatitis did not have reflected behaviors of sanitary attitudes (19).

The occurrence of hepatitis A in Lamongan District in 2018 also showed that outbreaks were caused by patient behavior factors, included the use and exchange of cutlery together, eating together, history of contact with sufferers, habit of washing hands without soap and poor food handlers due to non-available hand washing facilities (20). Food handlers also need to pay attention to personal hygiene in serving food. It based on the research on 1993-2011 in the United States, there were 192 food handlers infected with HAV who had transmitted to 18% of restaurant customers (21). The results of research in New York City in 2013 there was also an explosion of hepatitis A cases due to food handlers.

In contrast to the hepatitis A case occurred at Madrasah Aliyah in Pesawaran District, students were at risk of suffering from hepatitis A because of washing hands without soap, consuming unhealthy snacks, and using unhealthy latrines. unproper hand washing was due to the unavailability of a sink andsoap for washing hands, each class only provided 1 bucket of water for washing hands. The unavailability of these facilities has triggered the emergence of hepatitis A cases (22).

The availability of hand washing facilities need to be prioritized in public places, since it resulting in cases of hepatitis A. As took place in Brebes District and Junior High School in Surabaya, unavailable of hand washing facilities caused the risk of poor hygiene and sanitation terms (23-24).

However, the availability of hand washing facilities also needs to be balanced with individual awareness in applying personal hygiene. In this study, the people in the working area of Primary Health Care of Ngadirejo had poor hand washing habits, such as washing hands without soap after defecating.

The research at the Daarul Muttaqien Cadas Islamic Boarding School, Tangerang, stated that 48.5%. Respondents had poor personal hygiene it showed the lack of awareness in personal hygiene (25).

Lack of public awareness in applying personal hygiene could be obtained by several factors such as lack of knowledge,lack of individual awareness, lack of counseling and socialization of Clean and Healthy Living Behaviors. According to research in Cirebon District in 2018, it was stated that respondents who had the habit of washing cutlery without soap had16.9 times greater risk of suffering from Hepatitis A than using soap (26).

The solution to improving good personal hygiene is getting used to maintain personal hygiene: by living clean and healthy, implementing the correct hand washing behavior (washing hands with soap at critical 5 seconds), then improving sanitation, processing food and beverages properly, handling food properly, as well as creating healthy life in order to avoid several infectious diseases. The change of person's behavior towarded could be seen from the comparison of personal hygiene before and after understanding and responding to an object. Providing education with the Snowball throwing technique could also be used to increase respondents' knowledge, attitudes and actions. The research proved that the Snowball throwing technique caused significant increase of knowledge (27).

CONCLUSION

The level of knowledge, attitudes, and personal hygiene correlated with the incidence of hepatitis A. Hepatitis A outbreak in Pacitan District was caused by lack of education about infectious diseases.

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