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Influence of Student Behavior on Hepatitis A Incidence and Prevalence in Islamic Boarding School "Sidogiri"

Bhirawa Odie Prino Secaria[1(CA)], Lilis Sulistyorini[2], Soedjajadi Keman[3]
[1(CA)]Department of Environmental Health, Faculty of Public Health, Universitas Airlangga, Indonesia; bhirawaodie@gmail.com (Corresponding author)
[2]Department of Environmental Health, Faculty of Public Health, Universitas Airlangga, Indonesia; l.sulistyorini@fkm.unair.ac.id
[3]Department of Environmental Health, Faculty of Public Health, Universitas Airlangga, Indonesia; soedja_keman@yahoo.com

ABSTRACT

Islamic boarding school Sidogiri is one of the school which has 8.400 male students. The sanitary conditions of Islamic boarding school are closely related to the contagion rate of contagious environment-based diseases, one of which is Hepatitis A. Islamic boarding school Sidogiri experiencing Hepatitis A outbreak in 2014, attacked as many as 111 students. This research was conducted to find out the correlation between students behavior (knowledge, attitude, and action) with incident and prevalence of Hepatitis A. The type of research was analytic observational research by analyzing behavior with the occurrence of Hepatitis A (IgG and IgM). The study was conducted in Islamic boarding school Sidogiri Kraton subdistrict in Pasuruan district from July 2017 until March 2018. The population in this study were all students in Islamic boarding school Sidogiri. Sample selection was done randomly so that got sample amount 38 people. The result of this research mentioned that attitude and action factor have significant influence to the occurrence of hepatitis A (IgG) with p-value equal to 0.017. The lower the attitudes and actions, the higher the prevalence of IgG. While the action factor has a significant effect on the incidence of Hepatitis A (IgM) with p value of 0.001. The lower the action, the higher the prevalence of IgM. Socialization, promotion and health education needs to be done to reduce the risk of contracting hepatitis A.

Keywords: Islamic boarding school; students behaviour; hepatistis A; IgG; IgM

INTRODUCTION

Islamic boarding school or commonly called islamic boarding school is a community based Islamic education institution both as a unit of education and/or as a container of education providers(1). Indonesia has total number of 27,218 islamic boarding school of institutions consisting of 13,446 (49.4%) traditional islamic boarding school 3,064 (11.3%) khalafi/khalafiah Islamic boarding school (modern islamic school), and integrated/combined 10,708 (39.3%)(2).

Islamic boarding school Sidogiri is one of the Islamic boarding school in Kraton Subdistrict of Pasuruan district, which was established approximately 200 years ago. This Islamic boarding school has students as many as 8,400 male students. The area of the Islamic boarding school is approximately 8 hectares, consisting of 3 hectares in the south of the river and approximately 5 hectares in North river(3).

Sanitation of Islamic boarding school is a public health effort that focuses on overseeing the physical structure, where people use it as a refuge. Sanitation facilities consist of ventilation, temperature, humidity, occupancy density, natural lighting, building construction, garbage disposal facilities, human waste disposal facilities, and clean water supply(4). The sanitary conditions of Islamic boarding school are closely related to the contagion rate of contagious environmental diseases. One type of infectious disease that is often found in the environment of Islamic boarding school is Hepatitis A.

Hepatitis A is an inflammatory disease of the liver caused by Hepatitis A virus where transmission can occur through the mouth and gastrointestinal tract, so the hygiene of food and beverage sanitation is very important so as not to be easily contaminated by viruses that cause Hepatitis A. This disease is a common source

disease its main transmission through food and water sources. The cause of this disease is hepatitis A virus (VHA) or antero virus 72 from class Picornavirus. VHA can be found in the patient's stool. Antibodies against this disease can be checked on the patient's blood serum. Anti-HAV can persist in serum until chronic after infection. But the peak of anti-HAV titer is usually obtained one week after illness. Hepatitis A virus is 27 nanometers in size and can be classified as Piconavirus[5]. From the schematic representation of the Hepatitis A virus particle component that previous investigators found the stool sample suspension would remain infectious despite sterilization with acid, ether, high temperature and even frozen for more than one year. However, Hepatitis A virus can be inactivated by steam sterilization (auto claving), boiling, exposure to high concentrations of formalin and ultraviolet (UV) radiation. Factors that can affect transmission of Hepatitis A include environmental factors and behavioral factors of a person.

Islamic boarding school of Sidogiri experiencing Hepatitis A outbreak in 2014, attacked as many as 111 students[6]. Based on preliminary observation and outbreak report by Health Office of Pasuruan district, the description found among others found inadequate sanitation of Islamic boarding school especially about the provision of clean water, food management, personal hygiene to bad students, knowledge, attitude and behavior of students which is less supportive of healthy lifestyles, as well as the management of Islamic boarding school who are less interested in environmental sanitation issues Islamic boarding school, especially on the procurement of hygienic and healthy beverage food for the students. Therefore, this study was conducted to determine the relationship between students behavior with incidence and prevalence of hepatitis A. The students behavior here is knowledge, attitude and action of students. This study aims to analyze the relationship of students behavior with the incidence and prevalence of hepatitis A at Islamic boarding school of Sidogiri of pasuruan district.

METHODS

This research was observational Analytical of Epidemiology Environmental studies. This analytical study was conducted to analyze (IgM and IgG) risk factors or independent variables (behavior) with the incidence of Hepatitis A. The research was conducted on June 2017 untill march 2018 in Islamic boarding school Sidogiri of Kraton Subdistrict in Pasuruan District. The population in this study were all students and food handlers in the kitchen in Islamic boarding school Sidogiri. The sample selection of this research was done randomly, the method used was simple random sampling. Sample size needed in this study as many as 38 students. The data collected in this research was the primary data obtained through interviews using a structured questionnaire. Data analysis was done descriptively by using logistic regression analysis.

RESULTS

The Distribution of Incidence and Prevalence of Hepatitis A based on Behavior

Table 1. The Distribution of Incidence and Prevalence of Hepatitis A based on Behavior

Components of food handlers	Hepatitis A							
	Incidence (IgM)				Prevalence (IgG)			
	Negative		Positive		Negative		Positive	
	n	%	n	%	n	%	n	%
Knowledge								
• Good	28	90.3	3	9.7	26	83.9	5	16.1
• Bad	0	0	7	100	1	14.3	6	85.7
Attitude								
• Good	27	96.4	1	3.6	26	92.9	2	7.1
• Bad	1	10	9	90	1	10	9	90
Action								
• Good	27	96.4	1	3.6	26	92.9	2	7.1
• Bad	1	10	9	90	1	10	9	90

Table 1 was a cross-tabulation of the students behavioral component with incidence and prevalence of hepatitis A. The table show that as many as 85.7% of the positive students related incidents of hepatitis A has bad knowledge. Then as many as 90% positive students related to the prevalence of hepatitis A has a bad action.

Table 2. Relationship of students behavior with incidence and prevalence of hepatitis A

Components of Environmental Sanitation	Hepatitis A	
	Incidence (IgM)	Prevalence (IgG)
	p-value	*p-value*
Knowedge	0.000	0.001
Attitude	0.000	0.000
Action	0.000	0.000

Based on Table 2 between the knowledge component with the incidence and prevalence of hepatitis A showed a significance or p-value of 0.000 and 0.001, the attitude component with incidence and prevalence of hepatitis A showed a significance or p-value of 0.000 and 0.000 , and the components of action with incidence and prevalence of hepatitis A show a significance or p-value of 0.000 and 0.000. Statistically, the knowledge, attitudes, and actions of students were related to the incidence and prevalence of hepatitis A due to p-value <0.05. The correlation value indicates that the relationship was positive. This result mean poor knowledge, attitudes, and actions of students related to the incidence and prevalence of hepatitis A on students.

The Effect of Behaviors on Incidence and Prevalence of Hepatitis A

In addition to analyzing the relationship, this study also analyzed the influence of knowledge, attitudes, and actions of students with the incidence and prevalence of hepatitis A.

Table 3. Analysis of the effect of students behavior with incidence and prevalence of hepatitis A in IgG

Students behavior with incidence and prevalence of hepatitis A in IgG							
Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)
							Lower
Knowledge	0.913	22002.775	.000	1	1.000	2.491	0.000
Attitude	3.680	1.546	5.670	1	0.017	39.665	1.918
Action	3.680	1.546	5.670	1	0.017	39.665	1.918
Constant	-3.384	1.045	10.485	1	0.001	0.034	

Table 3 showed that a significance value of 0.017 (<0.05) indicating that attitude and action variables have a significant effect on the incidence of hepatitis in IgG. The estimate value was -3.384 indicating that the effect was negative. This mean that the lower attitudes and actions, the prevalence of hepatitis IgG would be higher, and the higher the attitude and action, the prevalence of IgG would decrease. While knowledge was known not to have an effect on the prevalence of IgG, meaning that students knowledge didn't affect the prevalence of hepatitis A in environment of Islamic Boarding School.

Table 4. Analysis of the influence of student behavior with incidence and prevalence of hepatitis A in IgM

Students Behavior with incidence and prevalence of Hepatitis A in IgM							
Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)
							Lower
Knowledge	1.566	33266.511	0.000	1	1.000	4.790	0.000
Attitude	21.203	6893.038	0.000	1	0.998	1615474842.000	0.000
Action	5.493	1.466	14.046	1	0.000	243.000	13.742
Constant	-3.296	1.018	10.475	1	0.001	0.037	

Table 4 showed that a significance value of 0.001 (<0.05) indicating that the action variable has a significant effect on the prevalence of hepatitis in IgM. The estimate value was -3.296 indicating that the effect was negative. This mean that the lower the action, the higher the prevalence of IgM, and the higher the action the prevalence of IgM would decrease. While attitudes and knowledge had no significant effect on the prevalence of IgM.

DISCUSSION

The Correlation between Student Behavior and Incidence and Prevalence of Hepatitis A

The results of this study indicate that statistically, knowledge, attitudes, and actions of students are related to the incidence and prevalence of hepatitis A due to p-value <0.05. The correlation value indicates that the relationship is positive. This result means poor knowledge, attitudes, and actions of students related to incidence and prevalence of hepatitis A on students. This is in line with research conducted by Ratih (2015) which states that there is a significant relationship between behavior (knowledge, attitude, and action) of society with the incidence of hepatitis A.

In the study of students behavioral relationship with incident and prevalence of hepatitis A has been in accordance with previous research conducted Dwika (2014) that there is a very significant relationship between personal hygiene on the host associated with the occurrence of Hepatitis A means that behavior is an important factor that must be controlled in an effort to reduce the transmission hepatitis A especially in boarding school.

The Influence of Knowledge, Attitudes and Action on Incidence and Prevalence of Hepatitis A

The results showed that the significance of 0.017 (<0.05) attitude and action variables had a significant effect on the occurrence of Hepatitis A in IgG. The estimate value is -3.384 indicating that the effect is negative. This means that the lower attitudes and actions, the prevalence of hepatitis IgG will be higher, and the higher the attitude and action, the prevalence of IgG will decrease. While knowledge is known not to have a significant influence (> 0.005) on the prevalence of IgG, meaning that students knowledge do not affect the prevalence of hepatitis A in the environment of islamic boarding school.

While the test results influence of knowledge, attitude and action on IgM known significance value of 0.001 (<0.05) indicating that the action variable has a significant effect on prevalence of Hepatitis on IgM. The estimate value is -3.296 indicating that the effect is negative. This means that the lower the action, the higher the prevalence of IgM, and the higher the action the prevalence of IgG will decrease. Mean attitude and knowledge have no significant effect on the prevalence of IgM.

Based on the results of previous research, the environmental health condition of islamic boarding school and the clean and healthy life behavior of the students with the occurrence of hepatitis showed that multivariate analysis with multiple logistic regression test obtained three variables related to the occurrence of hepatitis A, is eating habits together in one place (OR = 21.48), the habit of exchange of cutlery (OR = 6.15), and immunization status as a preventive factor of hepatitis A (OR = 0.056). The risk of respondents if they have not been immunized against hepatitis A and used to exchange tools and eat together in one place is 3.36 times for the occurrence of hepatitis A[(9)].

Other studies have shown a significant association between behavioral factors and the incidence of hepatitis A. The behavioral factors consisted of a history of contact with hepatitis A sufferers, not washing hands with soap, not washing dishes with soap, often eating vegetables or raw foods (not cooked), exchange of cutlery, often eating in stalls that only wash with a bucket, and pay no attention to cleanliness of stalls[(10)]. The results of research Rahmah *et al* (2014) in accordance with the results of research I do, so it can be concluded that behavior has the highest influence than environmental factors and food handlers.

The similarity of the results of this study with some previous research note that behavior has a major influence on the transmission of hepatitis A, especially on the variable attitude and action is more influential than the knowledge. This means that even if students have high knowledge was not enough to make preventive efforts against the spread of Hepatitis A so it is necessary to practice in behaving and acting in an effort to reduce the prevalence of Hepatitis A especially in boarding school environment.

CONCLUSION

There is a significant correlation between knowledge, attitudes, and action on incidence and prevalence of Hepatitis A. Attitudinal and action factors have an effect on the occurrence of hepatitis A (IgG) compared to factor of knowledge of students. The lower the attitudes and actions, the higher the prevalence of IgG, and the higher the attitude and action the more prevalence of IgG will decrease. And the action factor has a significant effect on the occurrence of hepatitis A (IgM) compared to factor of knowledge and attitude of students. The lower the action, the higher the prevalence of IgM, and the higher the action the prevalence of IgM will decrease.

The need to socialize about the prevention of hepatitis A by installing health promotion media around the Islamic Boarding School. The need to promote health to students in the form of practice in addressing some of the things that have the risk of contracting hepatitis A. Need education efforts or actions directly exemplified by cottage board and caretaker cottage in the treatment of personal hygiene such as not allowed to exchange cutlery

and drink, is expected always wash hands and utensils and drinks before use, maintain personal hygiene and cottage environment, and apply a clean culture every time and place.

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