



The Effect of Health Education on The Prevention of Leptospirosis Events in The Dormitory Environment

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ABSTRACT

Leptospirosis is a zoonotic disease caused by the bacteria *Leptospira* sp. Leptospirosis is often found in tropical and developing countries, including Indonesia. *Leptospira* bacteria are the cause of leptospirosis that can attack animals and humans. Infection in humans is an incidental event, because the main reservoir or spreader of *Leptospira* is rats. The urine of mice infected with *Leptospira* mixed or contaminated with water used for bathing can enter the human body through injured skin and mucous membranes. Prevention efforts are one way to reduce the incidence of leptospirosis, one of which is to cultivate good attitudes and knowledge about leptospirosis. This type of research is quantitative using a one group pre-post test design. The sample in this study was Imelda Medan university students with a total of 30 respondents using accidental sampling. Data analysis using Wilcoxon test. The results showed that there was a significant difference ($p < 0.05$) in the average knowledge of respondents before and after the intervention, meaning that there was an increase in respondents' knowledge of leptospirosis prevention.

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INTRODUCTION

Education is basically any planned effort to influence, provide protection and assistance so that participants have the ability to behave as expected. Education can also be said as a process of personal maturation. In addition, education is a process of guidance and demands to achieve certain goals and it appears that there are changes in students.

Education is a systematic planning process and is used intentionally to influence behavior through a process of changing knowledge, attitudes, and skills. Education is a process of achieving goals, meaning that this understanding includes that education is in the form of a series of activities that start from the actual conditions of the individual learning, focused on the expected individual achievement.

Health education is a dynamic process of behavior change, with the aim of changing human behavior which includes components of knowledge, attitudes, or actions related to the purpose of healthy living both individually, in groups, and in society, as well as using existing health service facilities appropriately and in accordance with (Cecep Triwibowo and Mitha Erlisyah Pusphandani, 2019).

Health education is a tool used to provide good information to the community, so that people are able to recognize the health needs of themselves, their families, and groups in improving their health. Health education can also be defined as the addition of one's knowledge and abilities through learning practice techniques or instructions.

Conceptually, health education is an effort to influence, and or invite other people, whether individuals, groups or communities, to carry out healthy living behaviors. While operationally, health education is all activities to provide and or improve the knowledge, attitudes, and practices of the community in maintaining and improving their own health.

Health education is an application or (application) of education in the health sector. The expected outputs in health education are: health behavior (behavior to maintain and improve conducive health).

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community in maintaining and improving their own health (Hariza Adnani, 2019).

According to Setiawan (2008), quoted from Teguh Prihantoro and Arum Siwiendrayanti, leptospirosis is a disease caused by infection with pathogenic bacteria called leptospira and is transmitted from animals to humans (zoonosis). Transmission can occur directly due to direct contact between humans (as hosts) with urine or infected animal tissue and indirectly due to contact between humans and water, soil or plants contaminated with urine from animals infected with leptospire. The usual routes of entry in humans are injured skin, especially around the feet, and/or the mucous membranes of the eyelids, nose, and mucous membranes. (Ramadhani, 2012).

This disease is a public health problem throughout the world, especially countries with tropical and sub-tropical climates that have high rainfall. This coupled with poor environmental conditions is a good land for the survival of pathogenic bacteria so that it allows the environment to be a suitable place for living and breeding of leptospira bacteria (Oktini, 2007; Ramadhani, 2010).

According to WHO cited by Maya Sofiyanti et al, 2018 the World Health Organization (WHO) estimates that the incidence of leptospirosis is 0.1 to 1 case/100,000 people in moderate non-endemic areas, and 10 to 100 cases/100,000 people in humid, tropical, and tropical areas. endemic. The number of severe cases is reported to be between 300,000 to 500,000 annually worldwide, with a fatality rate of up to 30% (World Health Organization, 2003).

The number of reported cases related to natural disasters and floods has increased with the most prominent outbreaks occurring in Nicaragua (1995), Peru and Ecuador (1998), Orissa (1999), Malaysia (2000), Jakarta (2002), Mumbai (2000 and 2005).), and filifina (2009). Not all countries consider Leptospirosis as a public health threat that needs prevention as early as possible, perhaps due to the different diagnostic capabilities in each country. Leptospirosis generally attacks farmers, plantation workers, mine/sewer workers, abattoir workers and the military (Schneider et al., 2013).

According to the International Leptospirosis Society (ILS), Indonesia is currently one of the tropical countries with relatively high cases of leptospirosis mortality, ranging from 2.5% to 16.45% or an average of 7.1% and is ranked third in the world for mortality rates (World Health Organization, 2003). 2003).

Leptospirosis in Indonesia is spread, among others, in the provinces of West Java, Central Java, Lampung, Yogyakarta Special Region (DIY), South Sumatra, Bengkulu, Riau, West Sumatra, North Sumatra, Bali, NTB, South Sulawesi, North Sulawesi, East Kalimantan and West Kalimantan. The mortality rate due to leptospirosis in Indonesia is high, reaching 2.5% to 16.45%, at the age of more than 50 years, mortality reaches 56%. In some publications the mortality rate is reported to be between 3% to 54% depending on the infected organ system (Zulkoni, 2011).

METHOD

Research Type and Design

This study uses quantitative research methods that produce data in the form of numbers and are generally analyzed using descriptive or inferential statistics. Quantitative research methods are used to examine populations or samples using research instruments with the aim of testing the formulated hypotheses (Sofar Silaen, 2018). The type of research used in this study is a quasi-experimental design with a One Group Pre-Test-Post Test

approach that only uses pre-experimental groups, researchers can examine the changes that occur after the treatment is given.

Research time and place

This research was conducted in March-July 2020, the time of the study was calculated from the preparation of the proposal to the preparation of reports and research publications. This research was conducted in the Dormitory of Imelda University, Medan, precisely in the "BAHAGIA" Dormitory.

Population and Research Sample

The population is a generalization area consisting of objects or subjects that have certain quantities and characteristics that are determined by researchers to be studied and then drawn conclusions (Sugiyono, 2011). The population in this study were students, especially for students who were in the "BAHAGIA" dormitory at Imelda University, Medan. The sample is a large part of the number and characteristics possessed by the population (Notoatmodjo, 2012). The sample in this study were students, especially for students who were in the "BAHAGIA" dormitory at Imelda University, Medan. the sampling technique is Non-Probability Sampling with the Accidental Sampling method.

Data Collection Techniques

Before carrying out the data collection process, the first step that must be done is to make preparations for the smooth implementation of the research, in the form of a research permit and an initial survey to the place that will be used as the research location. In addition to conducting a survey first, researchers must also approach students, especially for students who are in the "BAHAGIA" dormitory environment of Imelda University, Medan, who will be respondents in the research to be carried out. It aims to explain the reasons and purposes of informed consent to respondents. The researcher must explain to the respondent that the research that will be carried out will not harm and will not have a negative impact on the mental or physical and the confidentiality of the respondent is maintained. After all the above requirements are met, then the data collection process is carried out from the research site.

Primary data

The data obtained by the researchers themselves by taking measurements, observations, surveys, interviews with respondents using questionnaires compiled based on written concepts and others.

Secondary data

Data obtained from other parties/agencies that routinely collect data. The secondary data used in this study is data that has been published by related agencies such as the Ministry of Health, Infodatin, WHO, student reports and records or documents, especially for students who are in the "BAHAGIA" dormitory environment, Imelda University Medan.

Tertiary data

Data obtained from research results and the amount that has been published/complicated from other parties in tabular form. In this study, tertiary data were taken from the Journal of Health, Journal of Nursing and previous research on the Prevention of Leptospirosis Incidence, and so on.

Measurement Technique

To measure the Effect of Health Education on the Prevention of Leptospirosis Incidence in the Dormitory of Imelda University, Medan, there are 20 questions with an assessment of the good answer being worth 1, and the bad answer being 0 so that the highest score is 80 and the lowest score is 20. To measure it, the Sudjana formula is used:

$$P = \frac{\text{Range}}{bk}$$

$$P = \frac{80-20}{2}$$

$$P = \frac{60}{2} = 30$$

$$P = 30$$

Note:

P = The value you are looking for
Range = highest score – lowest score
BK = Number of categories

Then the level of influence of health education on the prevention of the incidence of leptospirosis according to the gut scale says:

Good : 14-18
Enough : 7-13
Bad : 1-6

Research Instruments

Data collection instruments are the tools used for data collection (Notoatmodjo, 2012). The researcher used an instrument in the form of a questionnaire. The questionnaire is one of the data collection tools that contains a list of

questions and a form of elaboration of the variables involved in the research objectives and hypotheses (Notoatmodjo, 2012). This questionnaire uses a type of checklist and cross-check questionnaire which is a list containing questions or statements that will be observed and respondents provide answers with a checklist (√) and a cross (X) in accordance with the desired results.

Data processing

After the data is collected, the researchers perform data processing through several stages. The first stage is editing to check or evaluate the completeness and consistency of all respondents' answers to the questionnaire given by the respondent. Then do the coding of each answer to make it easier for researchers, after that give a score to determine the score or the good score is 1 and the bad score is 0 from the level of knowledge. After completing the assessment, then tabulation is carried out by entering all the answers into the table to facilitate data analysis.

Data analysis with Univariate Analysis

Univariate analysis was used to describe the frequency distribution of each research variable. This analysis is used to obtain an overview of each independent variable which includes the patient's level of knowledge on the prevention of Leptospirosis.

Data analysis with Bivariate Analysis

This analysis is to determine the effect of health education on the prevention of leptospirosis at Imelda Medan University in 2020. Using the Wilcoxon test.

RESULTS AND DISCUSSION

Univariate Results

After conducting a study entitled "The Effect of Health Education on the Prevention of Leptospirosis Incidences in

the Dormitory of the University of Imelda Medan in 2020" on 30 respondents who were taken by accidental sampling, the following results were obtained.

Table 1.
Distribution of Characteristics of Respondents by Gender Regarding the Effect of Health Education on Prevention of Leptospirosis Incidence in the Dormitory of Imelda University Medan in 2020.

| No | Characteristics | Frequency | Percentage % |
|--------|-----------------|-----------|--------------|
| 1 | Male | 0 | 0% |
| 2 | Female | 30 | 100 % |
| Jumlah | | 30 | 100 |

Based on table 1. above, it can be seen that the majority of respondents are female as many as 30 people (100%), while

the minority of respondents are male as many as 0 people (0%).

Table 2.
Distribution of Characteristics of Respondents by Age About the Effect of Health Education on Prevention of Leptospirosis Incidence in the Dormitory of Imelda University Medan in 2020.

| No | Characteristics | Frequency | Percentage % |
|--------|-----------------|-----------|--------------|
| 1 | 18-20 | 6 | 20 % |
| 2 | 21-22 | 10 | 33.3% |
| 3 | 23-24 | 12 | 40.0% |
| 4 | 25-26 | 2 | 6.7% |
| Jumlah | | 30 | 100% |

Based on table 2. The above shows that the majority of respondents whose age interval is 23-24 years are 12 people (40%), while the minority of respondents whose age interval is 25-26 years are 2 people (6.7%).

Based on table 3 can be seen that the majority of respondents based on level 3 are 12 people (40.0%) while the minority of respondents based on level 2 are 4 (13.3%).

Table 3.
Distribution of Characteristics of Respondents Based on Levels About the Effect of Health Education on Prevention of Leptospirosis Incidences in the Dormitory of Imelda University Medan in 2020

| No | Characteristics | Frequency | Percentage % |
|--------|-----------------|-----------|--------------|
| 1 | Level 1 | 9 | 30.0% |
| 2 | Level2 | 4 | 13.3% |
| 3 | Level3 | 12 | 40.0% |
| 4 | Level4 | 5 | 16.7% |
| Jumlah | | 30 | 100 |

Hasil Bivariat

In this study, the data obtained can be analyzed using bivariate analysis, namely to determine the Effect of Health Education on the Prevention of Leptospirosis Incidence in the Dormitory of Imelda University, Medan in 2020.

Table 4.
Differences in Knowledge Before (pre) Giving Health Education About Prevention of Leptospirosis Incidences in the Dormitory of Imelda University Medan in 2020.

| No | Characteristics | Frequency | Percentage % |
|--------|-----------------|-----------|--------------|
| 1 | Goog | 3 | 10% |
| 2 | Enough | 8 | 26.7% |
| 3 | Less | 19 | 63.3% |
| Jumlah | | 30 | 100 |

Tabel 5.
Differences in Knowledge After (post) Giving Health Education About Prevention of Leptospirosis Incidences in the Dormitory of Imelda University Medan in 2020.

| No | Characteristics | Frequency | Percentage % |
|--------|-----------------|-----------|--------------|
| 1 | Goog | 30 | 30.0% |
| 2 | Enough | 0 | 0% |
| 3 | Less | 0 | 0% |
| Jumlah | | 30 | 100 |

Based on research, the Effect of Health Education on the Prevention of Leptospirosis Incidence in the Dormitory of Imelda University, Medan in 2020. It can be seen in the table of Wilcoxon test results below.

Table 6.
Differences in Knowledge About Prevention of Leptospirosis Events in the Dormitory of Imelda University Medan in 2020.

| No | Variabel | Amount (n) | Median ± interquartile range | P. value |
|----|-------------|------------|------------------------------|----------|
| 1. | (pre-test) | 30 | 35,00 ± 3,0 | 0.000 |
| 2. | (post-test) | 30 | 47,00 ± 3,0 | |

Note: P <0.05 then there is an effect of Health Education before and after the provision of health education. Based on the table above, Health Education on the Prevention of Leptospirosis Incidence in the Dormitory of Imelda University, Medan in 2020 is very influential.

Before the implementation of Health Education, the knowledge of respondents about preventing the occurrence of Leptospirosis who had good knowledge was 3 people (10%) while after it was implemented it increased by 30 people (100%).

DICUSSION

Changes in knowledge in the prevention of leptospirosis events

The results of research conducted by researchers showed that respondents changed their perception of knowledge in preventing leptospirosis events after being given communication, information and education to students. Before (pre) students were given communication, information and education on prevention of leptospirosis events, students did not know the efforts or ways to prevent it, as many as 19 people (63.3%), while after being given KIE as many as 30 people (100%). Based on the answers to the questionnaire, data obtained that the provision of communication, information and education (KIE) or health

education is very helpful in efforts to prevent the incidence of leptospirosis.

Before being given communication, information and education, students were asked about what leptospirosis is and how to prevent it and were given a questionnaire to fill out which would be given a score of 1 for a no answer and a score of 2 for a yes answer.

Effect of Health Education

The results of statistical tests using the Wilcoxon test obtained a p value of 0.0000 P <0.05, which means that the provision of communication, information and education (KIE) has an effect on knowledge in preventing the incidence of leptospirosis.

This is also in line with the research conducted by Aryani Pujiyanti et al, with the title "Effect of Health Education in

Efforts to Control Leptospirosis Extraordinary Events (KLB) in Bantul Regency" with the results of the study showing that there was a significant difference ($p < 0.05$) in the mean respondents before and after the intervention, it means that there is an increase in respondents' knowledge for the prevention of leptospirosis.

CONCLUSIONS AND SUGGESTIONS

Based on the results of research and discussion, this study concludes that: 1. Most clients with ignorance about preventing the occurrence of leptospirosis before (pre) being

given communication, information and education (KIE) have a sufficient/less level of knowledge in the Imelda University Dormitory Medan with a percentage reaching as much as 8 people (26.7 %), and 19 people with less knowledge (63.3%) 2. There is a significant effect between the provision of communication, information and education (KIE) to students at Imelda University Medan. The results of the Wilcoxon test show a significant value (p) of 0.000. The significance value of which is below 0.05 indicates that there is a significant influence between the variables of providing communication, information and education (KIE) to students in preventing the occurrence of leptospirosis.

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