International Journal of Community Medicine and Public Health
Engkeng S et al. Int J Community Med Public Health. 2021 Aug;8(8):3773-3776
http://www.ijcmph.com
pISSN2394-6032 | eISSN2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20213001

Original Research Article

The effect of health promotion in overcoming dengue hemorrhagic fever in public senior high school one Bitung city, North Sulawesi, Indonesia

Sulaemana Engkeng*, Maureen Irinne Punuh, Afnal Asrifuddin

Department of Public Health, University of Sam Ratulangi, Manado City, Indonesia

Received: 31 May 2021
Revised: 10 July 2021
Accepted: 12 July 2021

***Correspondence:**
Sulaemana Engkeng,
E-mail: sulaemanaengkeng@unsrat.ac.id

ABSTRACT

Background: Dengue hemorrhagic fever is a health problem in Indonesia because both the virus that causes it and the mosquitoes that transmit it are widespread in residential areas and public facilities throughout Indonesia. This study aims to determine the level of knowledge before and after counselling.
Methods: The type of research used is quantitative research with a quasi-experimental approach in one group pre-test post-test which was held at State high school 1, Bitung city. The population in this study were all students at the State high school 1, Bitung city with a total sample of 89 students using the Lemeshow formula. The sampling technique used was stratified random sampling with the inclusion criteria being willing to be respondents and being present at the time of the research, while the exclusive criteria were transfer students from other schools.
Results: Based on the results of the study, it was found that there was an increase in respondents' knowledge about dengue prevention. The results of the analysis of student knowledge in the pre-test showed mean=13.17 with a standard deviation of 1.848 and in the post-test showed mean = 16.08 with a standard deviation of 2.341. There is a significant increase in knowledge of student's knowledge with the results obtained, namely the difference in the mean of -2,910 and $p<0.05$.
Conclusions: The outcomes achieved by the counselling given to students can provide increased knowledge through the media of posters, stickers, brochures, videos and banners.

Keywords: Health Promotion, DHF Management, Knowledge

INTRODUCTION

Dengue hemorrhagic fever (DHF) is an infectious disease that is prioritized in disease prevention and eradication programs. DHF is an acute febrile disease that has the potential to cause death.[1] This disease is transmitted through the bite of Aedesaegypti and Aedesalbopictus mosquito vectors infected by the dengue virus which is transmitted by female Aedesaegypti mosquitoes.[2]

Dengue virus infection has occurred endemic in Indonesia during the last two centuries from mild symptoms and self-limiting disease. In recent years, the disease has had more severe clinical manifestations as dengue hemorrhagic fever and the frequency of outbreaks has increased. Indonesia is a country with a densely populated population of 245 million. However, dengue disease is widely reported in big cities and rural areas in Indonesia and has spread to remote villages due to high displacement and population density.[3]

North Sulawesi province is one of the dengue-endemic provinces. According to the North Sulawesi Provincial health office, the regions that experienced a significant increase in cases from year to year were Manado city and North Minahasa regency. In 2011, Manado city occupied the top position with 156 cases, followed respectively by cities and districts, Kota Mobagu with 151 cases, North Minahasa district 120 cases, Sangihe Islands district 120 cases, Southeast Minahasa district 118 cases, Minahasa district 116 cases, 107 cases Tomohon city, 106 cases of Bolaang Mongondow Selatan, 98 cases of South Minahasa, 91 cases of Bitung city, 76 cases of North Bolaang Mongondow, 74 cases of Bolaang Mongondow regency, 63 cases of Pulau Sitaro regency, East Bolaang Mongondow 45 cases, and Talaud Islands district 44 cases.

In Manado, DHF sufferers are very high based on data from the Manado city health office in 2010 there were 998 cases, in 2011 there were 408 cases and in 2012 there were 440 cases which were collected from all community health centers in Manado. The highest cases occurred in Malalayang district, followed by Mapanget, Tikala, Wanea, Sario, Tuminting, Singkil, and Bunaken, respectively. Cases of dengue hemorrhagic fever at the community health center of lower Paniki for the last three years, namely in 2010 the number of cases was 90 people, in 2011 the number of cases had decreased to 7 people, in 2012 the number of cases increased by 59 people, early 2013 from January to February alone, there have been 15 cases of dengue hemorrhagic fever in the lower Paniki community health center area. DHF in the last 5 years continues to attack North Sulawesi. According to data from the North Sulawesi provincial health office, a total of 6130 cases have occurred with a death toll of 74 people. DHF cases in the last 5 years were the highest in 2016. There were 2217 cases. Decreased in the year 2017 to 587 cases, dengue cases increased again in 2018 a total of 1713 cases occurred. In 2018 the highest number of deaths was 24 people. DHF cases in Bitung city in 2015-2017 there were 346 cases of dengue and 8 cases of death, in 2018 there were 120 DHF cases.[4] It is suspected that the high incidence rate is due to a large number of mosquito breeding sites such as used cans, used plastics, used car/motorcycle tires, and other containers that can hold clean water or rain puddles. The elements of community behaviour related to knowledge, attitudes and actions proclaimed by the Indonesian government through the Indonesian ministry of health are manifested in activities of draining, hoarding, burying it is still not identified whether all of them are related to the presence of dengue infectious mosquito larvae. The purpose of this study was to analyze the effect of health promotion in overcoming DHF in public senior high school 1, Bitung city, North Sulawesi, Indonesia.

METHODS

Current research is a quantitative research performed using a quasi-experimental approach in one group pre-test and post-test. To find out whether there was an effect, a Pre-test (01) was carried out on students and followed by the intervention (X) on students. After some time, a Post-test (02) was carried out on students. This research was conducted in July-September 2019. The population in this study were all students in Bitung city 1 State senior high school, totalling 1264 students. The sampling used in this study was the stratified random sampling method, namely the method of taking samples in populations with different or heterogeneous characteristics.[5] The samples in this study were students who were still active in State Senior high school 1 Bitung city. With the sample formula using the Lemeshow formula as many as 89 students. The inclusion criteria in this study were being willing to be respondents and being present at the time of the research activity, while the exclusion criteria were transfer students from other schools. The research instrument used a questionnaire and a laptop. The data analysis used was the univariate and bivariate analysis using statistical tests, namely the paired t-test. This method illustrates that the respondents are measured knowledge and attitudes before health education (pre-test scores) and the test of knowledge after health education (post-test scores) was measured after health education (post-test).

RESULTS

Characteristics of students determined in Bitung city 1 public senior high school are age, gender, knowledge. How to provide pre-test and post-test interventions after being given counselling is mentioned. It can be seen that there are 3 students aged 14 years (3.4%), 42 students aged 15 years (47.2%) and 44 students aged 16 years (49.4%) (Table 1). As for gender, it can be seen that the male gender is 26 students (29.2%) and the female gender is 63 students (70.8%) (Table 1).

Table 1: Frequency distribution of respondents by age and gender in Bitung city public senior high school in 2019.

Characteristics of respondents	N	%
Age (years)		
14	3	3,4
15	42	47,2
16	44	49,4
Gender		
Man	26	29,2
Women	63	70,8
Total	89	100

It was observed that the pre-test knowledge with good categories was 37 students (41.6%) and less knowledge was 52 students (58.4%). Meanwhile, the post-test knowledge with good categories was 43 students (48.3%) and less knowledge was 46 students (51.7%) (Table 2). The results of the Paired t-test statistical test for the pre-test and post-test of the respondents are shown in (Table

3). The results of the analysis of respondents' knowledge in the pre-test showed a mean=13.17 with a standard deviation of 1.848 and the post-test showed a mean=16.08 with a standard deviation of 2.341. There is a significant increase in knowledge of respondents' knowledge with the results obtained, namely the difference in mean of -2.910 and p<0.05.

Table 2: Frequency distribution of respondents based on pre-test and post-test knowledge of dengue hemorrhagic fever management in Bitung city 1 public senior high school in 2019.

Research variable	N	%
Pre test knowledge		
Good	37	41,6
Less	52	58,4
Post test knowledge		
Good	43	48,3
Less	46	51,7
Total	89	100

Table 3: Analysis of respondents' knowledge about dengue hemorrhagic fever in Bitung city 1 public senior high school in 2019.

Knowledge	Mean	SD	Difference in mean	P value
Pre test	13,17	1,848	-2,910	0.000
Post test	16,08	2,341		

DISCUSSION

The level of knowledge of students about dengue hemorrhagic fever before getting counselling about dengue hemorrhagic fever at senior high school 1 Bitung. The results of the pre-test research showed that the level of knowledge of students about dengue hemorrhagic fever was in a good category as many as 37 students (41.6%), 52 students (58.4%) in the poor category. The majority of respondents' knowledge is sufficient and perceptions are less likely to be caused by a lack of memory in the knowledge of students about dengue hemorrhagic fever. Knowledge or insight is very closely related to health information obtained by someone, meaning that if someone gets more and better information from various media such as television, radio or newspapers, posters and brochures about dengue hemorrhagic fever then it can increase one's knowledge at the same time shape one's perception for the better.

The results of this study are relevant to the research of Sitorus which states that there is an effect of providing health promotion through counselling on knowledge about dengue hemorrhagic fever.[6] A person's knowledge of the causes and ways of preventing dengue fever only reaches the level of knowledge and understanding. Knowledge has not yet reached the stage of interest, evaluation, trial, adaptation. Because the information obtained is still not clear and many factors influence individuals to take action according to their knowledge. So that student also have a good role in the prevention of dengue hemorrhagic fever, someone should have knowledge that reaches the level of analysis, application, synthesis and evaluation, and an attitude that reaches the stage of respect and responsibility so that they understand and want to carry out efforts to break the chain. Dengue hemorrhagic fever transmission. Thus it can be concluded that the higher a person's knowledge, the higher the level of one's accuracy towards the object of perception.[7]

The results of research conducted by Kusumawardani found that in the group that received health education, there was an increase in knowledge as indicated by the increasing score changes.[8] This states that health education has a major effect on knowledge in the prevention of dengue hemorrhagic fever in children. The higher the student's knowledge, the higher the motivation in carrying out the act of eradicating mosquito nests. Knowledge influences action. Increasing a person's knowledge about dengue hemorrhagic fever has an impact on increasing efforts to control the dengue hemorrhagic fever vector. Various studies have shown a correlation between the level of education and knowledge with the behaviour of dengue hemorrhagic fever prevention. The higher a person's level of knowledge about the importance of efforts to control the dengue hemorrhagic fever vector, the greater it is.

In terms of knowledge of dengue hemorrhagic fever prevention, it can be seen that students who have heard and mentioned the stands for drain, cover and bury are only in the amount of counselling, which is a channel for delivering information from program implementers in the field to community members, not going well; due to various constraints on program implementers in the field. the community has taken measures to prevent and eradicate dengue hemorrhagic fever. The way they do relates 15%. Dengue hemorrhagic fever control has been regulated in the decree of the minister of health number 581/MENKES/SK/VII /1992 concerning the eradication of dengue fever and decree of the minister of health number 92 of 1994 concerning amendments to the attachment to the decree of the minister of health number 581/MENKES/SK/1992, by focusing on prevention efforts with the movement to eradicate mosquito nests.[9,10]

CONCLUSION

Before the knowledge (pre-test) was found good knowledge as many as 37 students (41.6%) and less knowledge as many as 52 students (58.4%) and after knowledge (post-test) found good knowledge as many as 43 students (48.3%) and lack of knowledge as many as 46 students (51.7%). Schools can provide materials about the management of dengue hemorrhagic fever for students. So that it can help implement programs in improving public health. The influence of knowledge about the prevention of DHF was found to be p<0.05 so that there

was a significant difference in knowledge after being given intervention. Students were expected to be able to provide additional information about the prevention of dengue by practising draining, closing and burying.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Mansjoer A, Wardhani WI, Setiowulan W. Kapita Selekta Kedokteran. 2nd ed. Jakarta: Media Aesculapius Fak Ked UI; 2000.
2. Ginanjar G. Demam Berdarah. Jakarta Selatan: PT Mizan Publika; 2008.
3. Karyanti MR, Hadinegoro SR. Perubahan epidemiologi demam berdarah dengue di Indonesia. Sari Pediatr. 2016;10(6):424-32.
4. Dinas Kesehatan Provinsi Sulawesi Utara. Profil Kesehatan Provinsi Sulawesi Utara. Manado. Available at: https://dinkes.sulutprov.go.id/. Accessed on 20 April 2021.
5. Notoatmodjo S. Promosi Kesehatan Dan Perilaku Kesehatan. Jakarta: Rineka Cipta; 2012.
6. Sitorus RS. Perilaku Masyarakat dalam Pencegahan Penyakit Demam Berdarah Dengue Di Puskesmas Johor Kota Medan. Available at: https://www.semanticscholar.org/paper/Perilaku-Masyarakat-Dalam-Pencegahan-Penyakit-Demam-Sitorus/24bd48a17f7b6554a11d0d4cc676a31d3b25146d. Accessed on 20 April 2021.
7. Walgito B. Teori-Teori Psikologi Sosial. Yogyakarta: Andi Offset; 2011.
8. Kusumawardani E, Arkhaesi NH. Pengaruh Penyuluhan Kesehatan terhadap Tingkat Pengetahuan, Sikap dan Praktik Ibu dalam Pencegahan Demam Berdarah Dengue pada Anak. 2012;1(1):15-20.
9. Kementrian Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan Republik Indonesia Nomor 581/MENKES/SK/VII/1992 Tentang Pemberantasan Penyakit Demam Berdarah Dengue. Available at: http://hukor.kemkes.go.id/thread/Kepmenkes-no-581-tahun-1992-tentang-DBD/65. Accessed on 20 April 2021.
10. Kementrian Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan Republik Indonesia Nomor 92 Tahun 1994 Tentang Perubahan Atas Lampiran Keputusan Menteri Kesehatan Nomor 581/MENKES/SK/1992. Available at: https://jdih.bkpm.go.id/jdih/front/index/111/330. Accessed on 20 April 2021.

Cite this article as: Engkeng S, Punuh MI, Asrifuddin A. The effect of health promotion in overcoming dengue hemorrhagic fever in public senior high school one Bitung city, North Sulawesi, Indonesia. Int J Community Med Public Health 2021;8:3773-6.