REFRESHING KNOWLEDGE ON DENGUE HEMORRHAGIC FEVER SURVEILLANCE FOR DENGUE PROGRAM OFFICERS AT PUBLIC HEALTH CENTERS

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https://doi.org/10.32827/ijphcs.6.2.180

ABSTRACT

Background: The pattern of disease in Lamongan District shows that Lamongan is a dengue hemorrhagic fever (DHF) endemic area. One monitoring method related to DHF problem in Indonesia is through epidemiological surveillance. We wanted to know the understanding level of DHF program officers regarding their duties related to DHF surveillance, besides that we wanted also provided refreshing knowledge regarding DHF surveillance.

Materials and Methods: Pre-experimental research with One Group Pretest-Posttest Design, carried out in February-March 2017 at the Lamongan District Health Office. Subjects were DHF Program Officers at Public Health Centers/PHC (33 PHC) in work area of Lamongan District Health Office. Primary data was used, Questionnaire regarding DHF surveillance was used as instrument. Sign test was used, to see knowledge difference between before and after refreshing knowledge.

Result: The results of this study indicate that there were differences in knowledge before and after refreshing knowledge (p value 0.000), participants in this activity were mostly male (67.6%) and overall were at age of <50 years (61.8%). Based on the results of pretest-posttest regarding DHF surveillance, it was found that mostly participants understood questions about activities that carried out when epidemiological investigation results were positive (pretest 93.9%; posttest 97.0%), because it was a routine activity conducted by DHF Program Officers.

Conclusion: It is better to exchange material about latest information related to DHF through social media that has been frequently used in Lamongan District Health Office.

Keywords: Dengue Hemorrhagic Fever, Refreshing Knowledge, Surveillance

1.0 Introduction
One contagious disease that often arises and develops in tropical regions is Dengue Hemorrhagic Fever (DHF). Indonesia as a tropical country in the Southeast Asia region seems to be a habitat for DHF disease. The Ministry of Health of the Republic of Indonesia noted the incidence of DHF per 100,000 populations from 1968 to the present shows an increasing trend (MOH, 2010).

Public health surveillance is used to determine the community health status, monitor the public health development, determine health priorities, evaluate health programs and develop health research (Lee et al., 2010). Decree of Ministry of Health of the Republic of Indonesia No. 1116 at 2003 concerning the Implementation Guidelines for Health Epidemiology Surveillance System states that surveillance is a systematic and continuous process of collecting, processing, analyzing, interpreting data and disseminating information to units that require as consideration in decision making or policy.

Lamongan is one of dengue endemic areas. Since 2012-2015 cases of dengue fever in Lamongan Regency have fluctuated. Incidence Rate of DHF in 2015 was 53.13 per 100,000 populations, this figure is higher compared to previous year that was 45.6 per 100,000 populations (Lamongan District Health Office, 2015). Whereas in 2016 the incidence of DHF declined again, that was 45.6 per 100,000 populations. In order to overcome the problems related to DHF in Indonesia since 2004 the Ministry of Health has collaborated with the Provincial Health Office and the District Health Office to implement DHF prevention methods.

One way to monitor the incidence of dengue is through epidemiological surveillance (MOH, 2005). DHF program officers need to know their duties related to DHF surveillance. When evaluating the DHF surveillance system in Lamongan District Health Office, we obtained that there were no report of timeliness and completeness data, complete report from public health centers (PHC) could only be found in SO form. As many as 50% of respondents stated that they still had difficulties in processing data and found no classification based on DHF endemic areas and determination of DHF transmission season (Cutwardani, 2016).

A book was also published in 2015 regarding the guidelines for controlling dengue hemorrhagic fever to complete and accomplish the previous edition. One of the strategies stated in the book is strengthening the surveillance system for early detection, prevention and control of cases and outbreaks of DHF. The guidelines are expected to be a learning material and reference for all health officers in Indonesia to improve knowledge and skills in DHF control (MOH, 2015). Based on that, we wanted to know knowledge level of DHF program officers at PHC related to DHF surveillance and provide refreshing knowledge, so that DHF Program Officers were able to refresh their knowledge or found new knowledge.

2.0 Materials and Methods

This research was a Pre Experimental research with One Group Pretest-Posttest Design. This activity was conducted in February-March 2017 at Lamongan District Health Office. Refreshing methods related to DHF surveillance used were through material delivery. Sampling technique used was total sample, all of DHF Program Officers at PHC in Lamongan District Health Office were sampled. Lamongan District had 33 PHC. Primary data was used in this
research. Instrument was a questionnaire regarding DHF surveillance. The activities are carried out in 3 stages:

1. Pretest aimed to determine knowledge level of respondents before refreshing knowledge was conducted. Knowledge related to DHF surveillance was assessed using a questionnaire.
2. Refreshing knowledge consists of material delivery activities summarized in power points.
3. Posttest purpose was to assess whether there were changes in knowledge level after refreshing knowledge. Assessment of knowledge after refreshing was carried out using the same questionnaire when the pretest was carried out.

Descriptive analysis is used to describe the characteristics of respondents and items from each question contained in the questionnaire. Meanwhile, Sign Test was used to assess differences before and after refreshing knowledge, which was one of the Non Parametric tests to test the average difference between two paired sample groups.

3.0 Result

Refreshing knowledge was carried out at Lamongan District Health Office with 33 participants invited, but in implementation there were 34 participants. Cause, there was one PHC that was represented by 2 people where prospective replacement of DHF Program Officer was also included.

3.1 Characteristics of Respondents

<table>
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<th>Table 1. Description of Respondents Characteristics</th>
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https://doi.org/10.32827/ijphcs.6.2.180
Respondents in this refreshing knowledge consisted of 67.6% men and 32.4% women. Majority of respondents <50 years were 61.8%. Meanwhile, number of respondents ≥ 50 years were 38.2%. It is evidenced that respondents in this activity had diverse education, mostly from diploma of nursing (47.1%) but no one of them came from public health education. Although, mostly respondents had worked ≥ 5 years (73.5%), there were not many people who had previous training related to DHF surveillance (20.6%).

3.2 Description of Pretest-posttest item about DHF Surveillance

Pretest-posttest question items consisted of 10 items. All of these items were used to assess knowledge respondents before and after the refreshing knowledge about DHF surveillance. pretest-posttest results can be shown in Table 2.

Table 2. Ability of Respondents to Provide Answers for Each Item

<table>
<thead>
<tr>
<th>Question</th>
<th>Pretest</th>
<th>Posttest</th>
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<tr>
<td>Q1 WHO's goal is to reduce the burden of dengue infection</td>
<td>42.4%</td>
<td>60.6%</td>
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<tr>
<td>Q2 Transmission certain way of dengue infection</td>
<td>66.7%</td>
<td>48.5%</td>
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<tr>
<td>Q3 Purpose of DHF surveillance</td>
<td>57.6%</td>
<td>69.7%</td>
</tr>
<tr>
<td>Q4 Criteria for determining DHF outbreak</td>
<td>30.3%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Q5 Incubation period of dengue virus until disease symptoms appearance</td>
<td>18.2%</td>
<td>63.6%</td>
</tr>
<tr>
<td>Q6 DHF Sporadic region definition</td>
<td>33.3%</td>
<td>54.5%</td>
</tr>
<tr>
<td>Q7 Data type that needed to determine time before DHF transmission period</td>
<td>21.2%</td>
<td>18.2%</td>
</tr>
<tr>
<td>Q8 Criteria for determining that Epidemiological Investigation of DHF is positive</td>
<td>15.2%</td>
<td>48.5%</td>
</tr>
<tr>
<td>Q9 What was done when stated that epidemiological investigations results were positive</td>
<td>93.9%</td>
<td>97.0%</td>
</tr>
<tr>
<td>Q10 Locations that require larvae surveys</td>
<td>27.3%</td>
<td>33.3%</td>
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</tbody>
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Results of 6 items on pretest were Q1, Q4, Q5, Q6, Q7, Q8, Q10 indicating that there were less than 50% of respondents who had an understanding of the material. Whereas for items Q2 and Q3, there were more than 50% who understand about this material. In addition, almost all of the respondents (93.9%) understood the Q9 items, which was about countermeasures carried out when the epidemiological investigations were positive.

Pretest results showed that number of respondents who understood the Q2 and Q7 items decreased. As for Q8 and Q10 items, number of respondents who understood the material increased, even the number was still below 50%. Furthermore, for Q1, Q3, Q4, Q5, and Q6 items, overall more than 50% of respondents experienced an increase in understanding of material. The number of respondents who understood P9 items also increased (97%) and table
2 shows that both the pretest and posttest, respondents best understood the answers to these items.

3.3 Knowledge Differences Before and After Refreshing Knowledge

Table 3. Knowledge Differences Before and After Refreshing Knowledge about DHF Surveillance

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>3.94</td>
<td>1.722</td>
<td>0.000</td>
</tr>
<tr>
<td>Posttest</td>
<td>5.44</td>
<td>1.845</td>
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Analysis results using sign tests indicate that there were significant differences between before and after the intervention. This means that there was an increase in respondents' knowledge between before and after refreshing knowledge.

4.0 Discussion

Capacity building from human resources, facilities and infrastructure greatly supports the achievement of DHF targets and control indicators (MOH), 2011). Increasing technological developments require employees to be able to improve their work quality so that they become good quality resources in terms of knowledge, skills, and high level of professionalism in work (Fajrizka, 2016). So that, routinely need to be held socialization/refreshing/training to officers from cadre, PHC to the center level (MOH, 2011).

According to Fajrizka (2016), training/refreshing knowledge must be given to health workers regularly or at least once a year to increase knowledge. Indeed, the above opinion cannot be immediately carried out by some sides because of the distance, time and financial factors that can burden the side. As for in Lamongan District case, training for DHF program officers is still very rarely done due to limited funds. However, if we understand the main purpose of conducting training or refreshing knowledge is to get new information or knowledge, because every information and knowledge changes according to the development of new technology.

Training, it should begin with a good planning process. One of the steps that must be done in making a training plan is task analysis. Task analysis is an analysis to prospective trainees based on their tasks or job description. Task analysis is also part of training planning in training management. Job description that identified will be strengthened during the training. Job descriptions based on task analysis become references in developing a training curriculum. If all the tasks of program management officers are reviewed, then surveillance activities are one of them (MOH, 2007).

Participants who attended in this refreshing knowledge were mostly <50 years old. Even though, there is change in knowledge but average value produced is still not so great. One factor that influences learning outcomes is person factor that includes physiological and psychological
conditions. Physiological factors include person's physical condition in general, while psychological factors include interest, talent, motivation and cognitive abilities. This means that low learning outcomes can be caused by low learning motivation (Nurhidayah, 2015). Respondents aged ≥ 50 years were also quite large, nearly half of the refreshing knowledge participants were 38.2%. An individual's learning skills will begin to decline at around 50 years of age. However, they can be relied on for things that require experience and verbal abilities (Oortwijn et al., 2011).

DHF surveillance is routine surveillance carried out in all health service units in Indonesia. To ensure implementation of DHF surveillance system ongoing, it is necessary to described the role for each DHF surveillance unit in all levels of health service including center unit (MOH, 2011). DHF Surveillance Implementation is as follows:

1. Data collection. Case data collection is carried out in community health centers and their networks (community based), hospitals (hospital based), district/ city and provinces laboratories by using dengue fever reporting forms coordinated by district/ city health offices at district/ city level or at the provincial health office at the provincial level.
2. Processing and storing data. Implemented at each level of unit that carrying out surveillance.
3. Data analysis. Descriptive and analytical analysis is carried out in each surveillance implementation unit according to their respective capabilities.
4. Information dissemination. Implemented in each surveillance unit to those who need the data (MOH, 2011).

Appropriately, DHF surveillance activities need to be understood by DHF program officers. Because, increases in human population size, dengue vector-density and human mobility cause rapid spread of dengue virus in Indonesia (Karyanti et al., 2014). The objective of a DF and DHF surveillance programme is the early detection of outbreaks that permits the prompt implementation of control measures. In order to accomplish this, the factors favouring an outbreak should be monitored. This requires the monitoring of suspected cases of DF and DHF, case reporting, and epidemiological and entomological investigations. Presumptive cases of DHF (designated as with or without shock) should be reported to the appropriate local, national and international health authorities. An agency within the national public health authority is often designated to receive and compile this information as a part of dengue fever surveillance. These data should be processed rapidly (World Health Organization, 1997).

DHF surveillance pretest-posttest results showed that mostly respondents understand about the Q9 item, because it is a routine activity carried out by DHF programs officers at PHC if epidemiological investigation results are positive. Experience is the best teacher. experiential learning means learning from experience or learning by doing. experiential education in the first stage encourages students to undergo an experience and then encourages reflection of that experience so it can develop new skills, new attitudes, or new ways of thinking (Schwartz, 2013).

It is necessary to practice repeatedly and continuously to instill certain habits, so the knowledge that has been learned can produce skills and agility. More than that, it is expected that the knowledge and skills that have been learned become permanent, steady and can be used at any time by the person concerned (Kusumawardana, 2012). So it is known that in order to get a
solid knowledge of DHF surveillance for DHF program officers at PHC or across all levels, only refreshing knowledge is not enough. However, results of that knowledge need to be practiced and carried out continuously so that it can become a habit that produces a permanent knowledge.

5.0 Conclusion and recommendation

Conclusion of this study are there were knowledge differences regarding dengue surveillance before and after refreshing knowledge, and mostly respondents understand about actions taken when the results of epidemiological investigation are positive. Training/refreshing Knowledge for DHF program officers at PHC level should be done at least once a year. However, if the funds are limited to do training, it is often best to exchange latest information regarding DHF through online media that have been frequently used in Lamongan District Health Office. Timeliness and completeness data reports should be made for performance assessment of DHF Program Officers at PHC. It is expected that with this reports, the officers will be more accustomed to carrying out DHF surveillance activities.

Acknowledgement

We gratefully acknowledge Magister Epidemiology Departement of Universitas Airlangga, and Lamongan District Health Office for their cooperation.

Declaration

Authors declare that we have no conflict of interest.

Authors contribution

Kusuma Cutwardani contributions to wrote of the manuscript, did data collection and analysis. Meanwhile, Atik Choirul Hidajah and Sigunawan provided idea of research design and analysis, as well as direction of research process.

References


