Philippine Journal of Science
134 (2): 127-133, December 2005
ISSN 0031 - 7683

Evaluation of Health Media and Public Relations in Prevention and Control of Dengue Haemorrhagic Fever in Thailand

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This study evaluates the existing public relations and information program on Dengue Haemorrhagic Fever (DHF) in Thailand, and analyzes factors affecting the behavior on prevention and control of DHF. Using questionnaires, data were collected in sample provinces and districts of Bangkok with high and low DHF incidences. In each province, multistage random sampling was done on 65 persons for one municipality and one sub-district, and in districts of Bangkok for a total of 1,170. Results indicate that people received information on DHF through media e.g. television, radio, public health officers and volunteers, and public information campaign, which had significant influence on the knowledge and understanding of prevention and control of the disease in areas with high and low DHF incidence ($p<0.05$). But knowledge and understanding had significant influence on prevention and control practices only in areas with high DHF incidence ($p<0.05$). In addition, the information received had significant influence on prevention and control practices in areas with low DHF incidence ($p<0.05$) but not in areas with high DHF incidence ($p>0.05$). DHF prevention and control practices are better in areas with low DHF incidence than in areas with high DHF incidence with significant difference ($p<0.05$). Information received also significantly affected practices in DHF prevention and control ($p<0.05$) in urban (municipality) and rural (Tambol Administration Organization, TAO) areas and the districts of Bangkok. People in rural areas had better behavior than those in other areas in preventing and controlling the disease because they received information through direct channels e.g. public health volunteers. Thus, integrating mass and direct media could help to disseminate information on DHF prevention and control practices better than using mass media alone.

Key words: Evaluation, Public Relation, Media, Vector - Borne Disease

INTRODUCTION

Presently, the mosquito-borne disease is a problem in many places and its treatment seems more complex (Rozendaal 1997). Dengue Haemorrhagic Fever (DHF) has been occurring in Thailand for a long time. The number of DHF patients increases every 3 – 5 years. Although DHF incidence decreased from 5 to 2 percent, Southeast Asian countries like Thailand, Indonesia, Myanmar, etc. still confront the plague (Suppadit 2003). DHF was discovered in Thailand more than 30 years ago and it still is a noticeable public health problem since there is a trend that the rise in DHF incidence will continue.

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A big number of patients during the May to September period is noted while the highest number of patients was observed during July and August every year (Moonpruk 1998).

Currently, destroying dengue larva is a significant DHF control method. But this is difficult to implement continuously everywhere since the common house mosquito larva lives in clean water in every household (Office of Dengue Haemorrhagic Fever Control 2000). Thus, an effective control of DHF is to foster people's awareness on the danger of DHF, and that they should destroy the mosquito larva by themselves (Taweesarn 2004).

The Department of Disease Control under the Ministry of Public Health is responsible for the prevention of DHF in Thailand. The department does public relations campaigns throughout the country. These are done through mass media e.g., TV, radio, and print media (Department of Disease Control 2001). To determine the level of success in DHF control, researchers conducted a study on the monitoring and assessment of the results on the use of health media and public relations on DHF prevention. It aimed to find out whether the results are effective in long term DHF control planning.

The general objectives of the study were to investigate the people's perception on data or information about DHF through mass media, and to investigate factors affecting people's perception on data or information and behaviors on DHF prevention and control. The expected results of the study were to (1) obtain information on the result of Health Study Media in the public relations on DHF; (2) identify the factors affecting people's perception on data or information and understanding of DHF, as well as factors affecting people's behavior on the prevention and control of DHF; and (3) obtain information on trends for development and improvement of Health Study Media in the DHF prevention and control implementation.

Hypotheses of this study are as follows: (1) People with different perceptions on media related programs on DHF seemingly have different understanding and behavior on DHF prevention and control; (2) People with different knowledge and understanding on DHF seemingly have different behavior on DHF prevention and control; (3) People living in areas with different DHF incidences have different media perceptions, knowledge and understanding, and behavior; and (4) People living in municipality, Tambol Administration Organization (TAO) area, and Bangkok have different media perceptions, knowledge and understanding, and behavior on DHF prevention and control.

MATERIALS AND METHODS

The study was conducted on people living in the municipalities, TAO area, and Bangkok. Provinces with high and low accumulated DHF incidences on January and May 2003 were intentionally selected to represent each region in the country. Bangkok, however, was divided into two regions for the study. The study covered seven months, September 2003--March 2004.

Locales of the study include 8 municipalities, 8 TAO areas, and Bangkok (2 regions). These areas were classified into 2 categories: 9 places for high incidence of DHF patients, and 9 places for low incidence of DHF patients.

Target Respondents and Sample Group

The target respondents in this research are Thais who live in the North, Northeast, South, Central Thailand, and Bangkok.

The size of sample group was obtained from the computation formula of Bryman (2000) using multi-stage random sampling by selecting 1,170 samples of households representing provinces in the country's 4 regions and Bangkok (2 regions). In each province, 1 municipality was selected using random sampling to represent the urban community, and 1 TAO was selected using the same method to represent the rural community. Moreover, accidental (2) sampling was used to obtain 65 samples in each municipality and TAO. The provinces included in this study were selected based on high or low DHF incidences that occurred in those provinces. Accidental sampling was also used in Bangkok with 65 samples in each region that recorded high and low DHF patient incidences.

A questionnaire was used as tool in collecting data for the study. DHF experts at the Office of Haemorrhagic Fever Control, Department of Disease Control of the Ministry of Public Health tested the questionnaire on content validity and reliability. This was aimed at obtaining content validity and reliability of the questions as well as clarity of meaning to be conveyed to respondents. There were 30 samples (people living in Meenburi District, Bangkok). Scoring and statistical analysis on reliability of the questionnaire were done through Cronbach's Alpha method (Wanitbancha 2003). The test's result showed the value of 0.85, implying that the questions had high reliability. The questionnaire was then adapted and improved once more before using it to the intended samples.

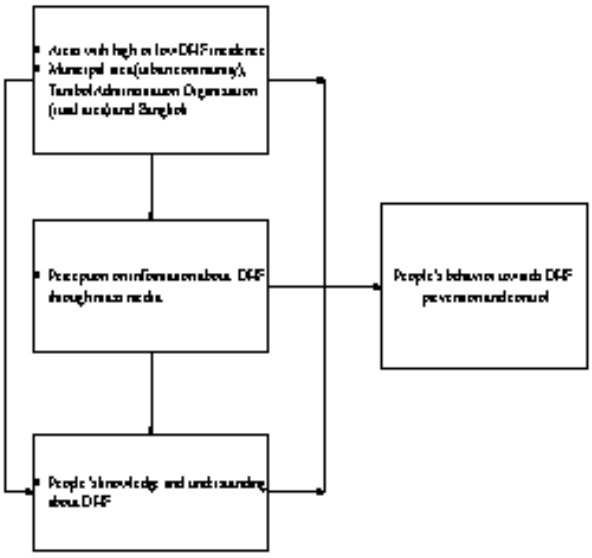

Figure 1. Conceptual framework of the study

Primary data were collected from 8 sample municipalities and 8 sample TAOs as representatives of each region in Thailand. Secondary data were collected through investigation and data gathering from books, reports, research papers, and other printed materials related to the study.

Analysis was done using the Statistical Package for the Social Science: SPSS version 10 (Wanitbancha 2003). This involves two methods wherein (1) frequency and percentage were both used for qualitative statistics as general information obtained from the questionnaire, and (2) T – test, F – test, and Chi – square were used with the statistically significant relationship of 0.05 to determine the correlation between independent variables and dependent variables.

RESULTS

Perception on Data or Information about DHF through Health Study Media

1. Sample groups in areas where there was high DHF incidence.
   - 1.1 In the municipality areas, more than half (66.5%) of respondents never attended a seminar. Majority of respondents (70.4%) never participated in activities or exhibits about DHF. Almost all of them (95.4%) never participated in the activities and exhibits but they obtained data or information through various media. There was a high level of exposure to data or information through various media (55.4%). They obtained data or information mainly through TV (90.4%), followed by information campaign (73.5%), and radio program (72.7%).
   - 1.2 Among sample groups in TAO areas, half of respondents (50.0%) never attended a seminar and slightly more than half (52.7%) never attended activities or exhibitions about DHF, but received data or information through media. More than half of respondents (66.5%) received data or information through media, and majority received data or information mainly through TV (87.7%), followed by radio program, and district or provincial public health staff with 76.2% and 74.3%, respectively.
   - 1.3 Among sample groups in Bangkapi District, Bangkok, majority of respondents (75.4%) never attended a seminar and 75.4% never attended activities or exhibitions about DHF. Majority of respondents (93.8%) received data or information through media. Less than half (36.5%) received data and information through media in a low level, but majority received information mainly through TV (90.7%), followed by radio (64.5%), and newspaper (58.5%).
2. Among sample groups in areas where there was low DHF incidence
   - 2.1 Among sample groups in the municipality, more than half of respondents (60.4%) never attended a seminar and more than half (62.3%) also never attended activities or exhibitions about DHF. Majority of respondents received data or information on DHF through media (93.1%). However, more than half of respondents (61.5%) had a high level of exposure to data or information through media, mostly through TV (81.8%), followed by radio (78.8%), and hospital staff (72.3%).
   - 2.2 Among sample groups in TAO areas, more than half of respondents never attended a seminar (59.2%), and activities or exhibition about DHF (52.3%). Majority of respondents received data or information on DHF through media (96.2%), and more than half had a high level of exposure to data or information through media (68.1%). Majority received data or information from volunteers (89.3%),

followed by TV (85.7%), and district and provincial public health staff (84.2%).

2.3 Among sample groups in Taweewattana District, Bangkok, majority of respondents never attended a seminar (76.9%). More than half never attended activities or exhibitions about DHF (80.3%). However, all respondents received data or information through media. But at present, less than half of them had a high level of exposure to data or information through media. Information was mostly obtained through TV (89.2%), followed by newspaper (61.6%), and relatives (61.5%).

People's Knowledge and Understanding about DHF

1. Sample groups with high DHF incidence
   - 1.1 Sample groups in municipality. Most sample groups (60.8%) had a high level of knowledge and understanding about DHF.
   - 1.2 Sample groups in TAOs. More than half of the sample groups (56.5%) had a high level of knowledge and understanding about DHF.
   - 1.3 Sample groups in Bangkapi District, Bangkok. More than half of respondents (56.9%) had a high level of knowledge and understanding about DHF.
2. Sample groups with low DHF incidence
   - 2.1 Municipality. More than half of respondents (60.8%) had a high level of knowledge and understanding about DHF.
   - 2.2 The TAO. About half of respondents (51.9%) had a moderate level of knowledge and understanding about DHF.
   - 2.3 Taweewattana District, Bangkok. More than half of respondents (55.4%) had a moderate level of knowledge and understanding about DHF.

People's Behavior Regarding DHF Prevention and Control

1. Sample group in areas where there was high DHF incidence
   - 1.1 Municipality. Majority of respondents (61.5%) had moderate level of behavior regarding DHF prevention and control.
   - 1.2 The TAO. About half of respondents (51.2%) had a moderate level of behavior regarding DHF prevention and control.
   - 1.3 Bangkapi District, Bangkok. More than half of respondents (63.1%) had a moderate level of behavior regarding DHF prevention and control.
2. Sample group in areas where there was low DHF incidence
   - 2.1 Municipality. More than half of respondents (53.8%) had a moderate level of behavior on DHF prevention and control.
   - 2.2 The TAO. More than half of respondents (58.1%) had a moderate level of behavior on DHF prevention and control.
   - 2.3 Taweewattana District, Bangkok. More than half of respondents (53.8%) had a moderate level of behavior on DHF prevention and control.

Results of the Hypothesis Testing

1. Sample groups in areas where there was high DHF incidence

Hypothesis 1. There is a significant difference on the people's perceptions on information media about DHF, and seemingly different knowledge and understanding about DHF ($p<0.05$), but it does not affect their behavior on DHF prevention and control ($p>0.05$). Hypothesis 1 is therefore rejected.

Hypothesis 2. There is a significant difference among people with different knowledge and understanding about DHF, and seemingly with different behavior on DHF prevention and control ($p<0.05$). Hypothesis 2 is therefore accepted.

2. Sample group in areas where there was low DHF incidence

Hypothesis 1. There is a significant difference on people's different perceptions, and seemingly with different understanding and behavior on DHF prevention and control ($p<0.05$). Hypothesis 1 is therefore accepted.

Hypothesis 2. Knowledge and understanding about DHF do not affect the people's behavior on DHF prevention and control with significant difference ($p>0.05$). Hypothesis 2 is therefore rejected.

3. A comparative study on areas where there were high and low DHF incidences

Hypothesis 3. There is a significant difference on different DHF incidences in each area that does not affect the people's perceptions on information media, knowledge and understanding about DHF ($p>0.05$), but affects the people's behavior on DHF prevention and control ($p<0.05$). Hypothesis 3 is therefore rejected.

4. A comparative study on the people living in municipality, TAO, and Bangkok

Hypothesis 4. There is a significant difference among different people living in different areas, affecting their perceptions on media and behavior on DHF prevention and control ($p<0.05$), but it does not affect their knowledge and understanding about DHF with significant difference ($p>0.05$). Hypothesis 4 is therefore rejected.

DISCUSSION

The media related perceptions on DHF among the sample groups both in areas with high and low DHF incidences significantly affected the people's knowledge and understanding about DHF. This means that the information obtained from the different media helped the sample groups to obtain knowledge and understanding about DHF more than before. However, the result of knowing and understanding DHF will affect learning and behavioral change or it may depend on other factors (Suwannathat 1978). In the case of knowing about DHF through various media among sample groups in areas with high DHF incidence, there was no effect on people's behavior on DHF prevention and control. In contrast, in areas with low DHF incidence, there was an effect on people's behavior on DHF prevention and control. That is, there might be some other factors concerning the information each received that affected the delivery of the message or information to the receiver, which do not conform with the needs of the sender (Keeranan1999). This corroborates Barbara's (1980) study on the use of basic media to encourage learning in India. It was confirmed that it is necessary to use training media for the development of human resource, rural communities, and agriculture. It is also important to select media appropriate to the kind and objective of the training task. However, results of the study in areas with high or low DHF incidences revealed that people received information on DHF through outside sources such as TV, radio, newspaper, journals, etc. This caused a difference in appropriate behavioral changes implying that other factors aside from media-induced perception and knowledge may influence or activate a certain behavior on DHF prevention and control. This agrees with Chuethao (1995) who stated that activation is one method that assists to produce a desired behavior, which arises from the activation that may be self-initiated or through other external factors. In this study, it was found that public health staff and volunteers played an important role in areas with low DHF incidence in terms of utilization of media to activate/encourage people to realize the importance of DHF prevention and control.

In sample groups with high DHF incidence, the people's knowledge and understanding about DHF affected their behavior on DHF prevention and control. This might be due to the fact that they realized the danger posed by DHF to them. Thus, they are interested in finding ways to prevent and control DHF. This conforms to Suwan (1983)'s findings that knowledge is a behavior obtained from learning process and experience. It is accumulated and manifests in the form of memory. In a nutshell, this explains or describes human behavior. Although the sample groups had knowledge and understanding about DHF, they had a low level of behavior towards DHF prevention and control. This might be because people in these areas did not have enough information on DHF prevention and control. Another reason is that they lacked exposure to direct media to continually activate them towards DHF prevention and control. This resulted to lower level of prevention and control behavior compared to those living in areas with low DHF incidence. In contrast, in areas with low DHF incidence, the people's behavior towards DHF prevention and control was not affected. This conforms to results of the study of Hansuebsai (1998). It was determined that if people were aware only of the danger of DHF, it will not affect their behavior on DHF prevention and control.

Based on the results of this study, the sample groups knew the DHF prevention and control methods, but they might have inadequate knowledge and understanding about the DHF problem, so that their knowledge and understanding did not affect the activation of behavioral change on DHF prevention and control.

Results of this study revealed that people living in areas with low DHF incidence (21.8/40.0) had a higher score on behavior than those in areas with high DHF incidence (19.5/40.0). This means that other factors and media contribute in continually activating people on DHF, producing different behaviors among the people on DHF prevention and control.

With regard to the comparative study on sample groups of those living in the municipality, TAO area, and Bangkok, it was established that they had different perceptions and behaviors on DHF prevention and control. The behavior was categorized as: never (0 point) sometimes (1 point) and regularly (2 point). Levels of the behavior were divided into low (0-14 point), moderate (15-28 point) and high (29-40 point). The result illustrated that sample groups living in TAO areas obtained a higher average score on behavior (21.4/40.0) than those living in the municipalities (20.8/40.0) and Bangkok (17.1/40.0). This shows that there might be some media factors affecting the activation of behavioral change among people living in TAO area.

The researchers observed that volunteers and concerned public health staff play an important role in changing the behavior of the people rather than other media like newspaper, TV, radio, etc. This conforms to Phakdi's (1982) study on the role of media toward the acceptance of agriculturists in Kalasin province. Phakdi confirmed that personal interaction plays the most important role in the activation of knowledge, motivation, and decision-making of agriculturists in behavioral change.

CONCLUSION AND RECOMMENDATIONS

The level of people's perception on the information about DHF was high, but was moderate and high on knowledge and understanding about DHF. However, they had a moderate level of perception on DHF prevention and control. This means that public health media and public relations were effective among the target groups and helped them obtain a better knowledge and understanding about DHF. Thus, different forms of media should be further considered on the activation of people to achieve the desired behavior on DHF prevention and control. Also, there should be a study on the appropriate use of media among groups of youths and adults for more effective information programs/strategies. The media should produce information guides on the causes of DHF and identify ways to prevent it, e.g., the destruction of dengue larva rather than spraying of insecticide, which does not prevent DHF at the primary stage.

Personal media is more effective than other forms of media because they can directly and continually activate key people of the community on DHF prevention and control. Important personal information channels are public health volunteers and public health staff. In cases when there are different behaviors between people living in areas with high DHF incidence and those living in areas with low DHF incidence, it might be due to the fact that people do not often give sufficient importance to DHF as a public health threat/issue as well as to cooperation, problem solving participation, and brainstorming. Thus, people should be given a chance to participate in brainstorming and problem-solving on DHF. Continuous holding of activities, exhibitions or seminar/training can be done to encourage people's participation.

There were also different perceptions on DHF information through media among people living in the municipalities, the TAO area, and Bangkok. This might be due to differences in public relations approaches. After interviewing concerned staff and agencies on DHF, it was found out that the public health staff in the TAOs had clear responsibility, while public health volunteers were clearly assigned to be responsible for each village. Moreover, the villagers cooperated and followed the suggestions and recommendations of public health staff on DHF prevention and control. It was also noted that the villagers were willing to cooperate with concerned agencies responsible for DHF prevention and control since personal media were able to deal with them officially, and there was a two-way communication process that made it easy for them to understand the meaning of what the staff of concerned agencies wanted to convey. In the municipalities and Bangkok districts, however, public relations should be adopted together with personal and other media, which should be used or implemented side by side. That's because personal media cannot be easily implemented in urban areas since city life is hectic and many people do not like to deal with strangers. Thus, it is recommended that other forms of media should be used in urban areas.

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