The Impact of Health Education on Mother's Knowledge, Attitude and Practice (KAP) of Dengue Haemorrhagic Fever[Ψ]

by

Tran Tan Tram*, Nguyen Thi Ngoc Anh*, Nguyen Thanh Hung*[#], Nguyen Trong Lan*, Le Thi Cam*, Nguyen Phuoc Chuong*, Le Tri*, Lise Fonsmark**, Anja Poulsen** and Erik Deichmann Heegaard**

** Directorate, Department of Dengue Haemorrhagic Fever and the Project Office, Children's Hospital N.1, 341 Su Van Hanh St., Dist 10, Ho Chi Minh City, Viet Nam*
***Departments of Intensive Care, Paediatrics, and Clinical Microbiology, University State Hospital, Rigshospitalet, Copenhagen, Denmark*

Abstract

A mother's knowledge, attitude and practice (KAP) study before and after health education of dengue haemorrhagic fever (DHF) was carried out in four communes in Southern Viet Nam. The study showed that health education had made a strong impact on the mothers' KAP of DHF. The KAP of mothers (how to recognize the child with DHF, how to take care of the child at home, and how to prevent the disease) were improved significantly after health education. This effective programme of health education on DHF can be implemented in other communities as part of the national programme for dengue control.

Keywords: Knowledge, attitude, and practice (KAP), mother, dengue haemorrhagic fever, dengue control, Viet Nam.

Introduction

Dengue haemorrhagic fever (DHF) is one of the leading causes of hospitalization and death in children in Southern Viet Nam. In 1998, a widespread DHF epidemic affected 51 out of 67 provinces of the country. Most cases were in 19 provinces of Southern Viet Nam (119,429 cases of DHF and 342 deaths)[(1)]. As there is no effective vaccine at present to prevent the disease or a drug to cure DHF, the only measure available to control it is to prevent its transmission by the vector, *Aedes aegypti* mosquito[(2,3)]. Health education increases people's knowledge about the disease and motivates them to

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[#] **For correspondence:** *hungdhf@hcm.fpt.vn*

participate actively in control measures. It is one of the objectives of our dengue project which collaborated with the Danish-Viet Namese Association in order to reduce the morbidity and mortality caused by DHF in Southern Viet Nam. Recognizing DHF patients early, treating them correctly and taking proper care of them play an important role in reducing the mortality. Health education to improve the knowledge of mothers in order to change their attitudes and practices is essential to bring down the morbidity and mortality of DHF in the community. We conducted the study to investigate the impact of health education on the knowledge, attitude, practice (KAP) of DHF of mothers having children aged less than 15 years in four communes in the dengue project area.

Materials and methods[¶]

This was a descriptive, cross-sectional study. Mothers of children under 15 years of age and living in the four communes where dengue is endemic, namely, Hung Long (Binh Chanh district, Ho Chi Minh City), Binh Chau (Xuyen Moc district, Ba Ria-Vung Tau province), Hoi An (Cho Moi district, An Giang province) and Gia Thuan (Go Cong Dong district, Tien Giang province), were enrolled in the study. The sample size of each commune was based on the calculator programme of the Epi-Info version 6.0, CDC, USA.

[¶]The study was approved by the Scientific and Ethical Committee of Children's Hospital N.1, HCM City, Viet Nam.

The first survey on mothers' KAP (Pre-KAP) was carried out for 115, 117, 126 and 104 mothers having children aged under 15 years at Hung Long, Binh Chau, Hoi An, Gia Thuan communes respectively. Each mother of these communes was educated once by the medical staff of the commune clinics (who had been trained earlier on how to educate mothers on DHF) from June to October in 1997 and in 1998. At the end of the programme, we conducted the second survey in August 1999 (Post-KAP).

Every mother was interviewed by the commune staff based on a prepared questionnaire. Doctors from district hospitals and the Children's Hospital N.1 supervised this interview. All the health staff and the doctors had been trained on how to conduct the survey.

The data collected were analysed by software SPSS version 6.0.

Results

The number of the mothers interviewed in the Pre-KAP and Post-KAP was 463 and 456 respectively. Table 1 presents the distribution by age of the mothers. Most mothers were 40 years of age or younger. 5.2-6.1% of the mothers were illiterate, about half of them had education levels of primary school Grade 5 or less, and remainder had received secondary schooling (Table 2). There were no significant changes in the age distribution and education levels of the mothers before and after the intervention (Tables 1 and 2).

Table 1. *Age distribution of mothers enrolled in the study*

Age (years)	Pre-KAP No. (%)	Post-KAP No. (%)	P-value†
<20	1 (0.2)	13 (2.8)	0.1
20-30	158 (34.1)	182 (39.9)	0.4
31-40	200 (43.1)	177 (38.8)	0.5
>40	104 (22.4)	84 (18.4)	0.5
Total	463 (100)	456 (100)	

† P-value of comparison between the first and the second survey (Pre-KAP and Post-KAP).

Table 2. *Distribution of education levels of mothers enrolled in the study*

Education level	Pre-KAP No. (%)	Post-KAP No. (%)	P-value†
Illiterate	24 (5.2)	28 (6.1)	0.7
Primary school	255 (55.1)	231 (50.7)	0.5
Secondary school	184 (39.7)	197 (43.2)	0.6
Total	463 (100)	456 (100)	

† P-value of comparison between the first and the second survey (Pre-KAP and Post-KAP).

Table 3 shows the proportion of the mothers who had knowledge about DHF and its transmission. In Pre-KAP we found that high fever, which is the main symptom of DHF, was known only by 55.3% of the mothers; bleeding manifestations such as epistaxis, gum bleeding, haematemesis and melena which are important signs and symptoms in the diagnosis, were mentioned by only 15.3% of the mothers. Only a small proportion of the mothers (12.5-25.2%) knew about the dangerous signs such as severe vomiting, abdominal pain, haematemesis and melena. The proportion of the mothers who knew about the symptoms/signs and dangerous signs of DHF increased significantly after they had been educated about the disease. More particularly, the proportion of mothers who did not know anything about the symptoms/signs and dangerous signs of DHF was brought down significantly from 16.8% to 0.9% and from 17% to 1.3%, respectively ($P < 0.00007$, and $P < 0.0001$, respectively).

The proportion of the mothers who knew that mosquitoes transmitted DHF from person to person and that mosquitoes attacked children during daytime increased significantly from 83.4% to 97.6%, and from 25.2% to 68%, respectively, after health education ($P < 0.0006$, and $P < 0.00001$). Only 0.7% of the mothers did not know about the transmission of DHF after health education in comparison with 15.8% before health education (Table 3).

Table 4 shows the way mothers took care of their children with fever at home. In Pre-KAP we noted that not all mothers knew how to correctly take care of a child with DHF at home: 52.8% of the mothers brought the child to a doctor; 66.9% of them sponged the child with high fever; only 34.2% and 6.1% of them encouraged the child to drink as much fluid as possible and eat normal food. In Post-KAP we found that the proportion of mothers who gave proper care to their children (giving antipyretic drugs; sponging; encouraging children to drink and eat; seeking doctors) had significantly improved. Seeking a doctor when their children had high fever was mentioned by 83.6% of the mothers. However, there were still 13.5% of them who bought drugs from a pharmacy.

Table 3. *Proportion of mothers responding to selected DHF knowledge*

DHF knowledge	Pre-KAP No. (%)	Post-KAP No. (%)	P-value†
Symptoms/signs			
• Fever >2 days	256 (55.3)	430 (94.3)	< 0.0001
• Petechia	234 (50.5)	392 (86.0)	< 0.0001
• Bleeding (epistaxis, melena, haematemesis)	71 (15.3)	337 (73.8)	< 0.0001
• Cold extremities	92 (19.9)	175 (38.4)	0.0039
• Adominal pain	46 (9.9)	227 (49.6)	< 0.0001
• Others	70 (15.1)	3 (0.7)	< 0.0001
• Don't know	78 (16.8)	4 (0.9)	0.00007
Dangerous signs			
• Lethargy, cold extremities	212 (45.7)	346 (75.9)	0.00001
• Severe vomiting	12 (25.3)	289 (63.3)	<0.00001
• Abdominal pain	58 (12.5)	228 (50)	<0.00001
• Bleeding	76 (16.4)	405 (88.9)	<0.00001
• Others	84 (18.1)	6 (1.3)	0.00006
• Don't know	79 (17.0)	6 (1.3)	0.0001
Transmission			
• Mosquito bites	386 (83.4)	445 (97.6)	0.0006
• Direct contact	8 (1.7)	5 (1.1)	0.7
• Others	9 (1.9)	7 (1.5)	0.8
• Don't know	73 (15.8)	3 (0.7)	0.0001
Biting time of the mosquito			
• Daytime	118 (25.2)	310 (68.0)	<0.00001
• Night	171 (36.9)	26 (5.7)	<0.00001
• Both daytime and night	125 (26.9)	114 (25.0)	0.7
• Don't know	51 (11.1)	6 (1.3)	0.0036
Breeding places of the mosquito			
• Water storage containers			
– With covers	177 (38.3)	56 (12.2)	0.00002
– Without covers	266 (57.4)	393 (86.2)	<0.00001
– Both of them	4 (0.9)	5 (1.1)	0.8
• Don't know	16 (3.5)	2 (0.4)	0.1

† P-value of comparison between the first and the second survey (Pre-KAP and Post-KAP).

Table 4. *Measures mothers took to care for their children with fever at home*

Measure	Pre-KAP No. (%)	Post-KAP No. (%)	P-value†
Giving antipyretic drugs	190 (41.1)	352 (77.3)	<0.00001
Sponging	310 (66.9)	388 (85.2)	0.0024
Encouraging to drink much water	159 (34.2)	344 (75.5)	<0.00001
Encouraging to eat normal food	28 (6.1)	217 (47.6)	<0.00001
Buying drugs from pharmacy	130 (28.1)	62 (13.5)	0.0109
Skin cut, chiropractic with medicated oil	39 (8.4)	8 (1.7)	0.03
Seeking doctor	245 (52.8)	381 (83.6)	<0.00001
Others	44 (9.5)	0	

† P-value of comparison between the first and the second survey (Pre-KAP and Post-KAP).

The proportion of mothers and the measures they took to prevent the disease in the Pre-KAP and Post-KAP periods is presented in Table 5. The proportion of mothers who did not know about DHF transmission and the measures needed to prevent it were brought down to 1.5% and 0.7%, respectively. We found that the proportion of mothers who said that larvicides were the best control measure to prevent DHF was significantly increased ($P < 0.0001$).

The dominant sources from which the mothers received health information on DHF in the Pre-KAP period were health personnel (44.9%), other people (41.7%), and television (29.2%). In the Post-KAP period, the proportion of the mothers receiving information on DHF from health personnel was significantly increased to 86.4% (Table 6).

Table 5. *Control measures mentioned by mothers to prevent DHF*

Measure‡	Pre-KAP No. (%)	Post-KAP No. (%)	P-value†
Cleansing trees around houses, draining water	95 (20.5)	35 (7.6)	0.008
Discarding disused water storage containers	296 (63.9)	236 (51.7)	0.08
Both of them	65 (14)	182 (40.0)	0.00003
Don't know	7 (1.5)	4 (0.7)	0.5
Larvicides	111 (24.0)	395 (86.7)	<0.0001
Using insecticides	280 (60.5)	56 (12.2)	<0.0001
Others	107 (23.1)	5 (1.1)	<0.00001

‡ Some mothers reported more than one measure.
† P-value of comparison between the first and the second survey (Pre-KAP and Post-KAP).

Table 6. *Sources of information on DHF which mothers received*

Source of information	Pre-KAP No. (%)	Post-KAP No. (%)	P-value†
Health personnel	208 (44.9)	394 (86.4)	<0.00001
Other people	213 (46.0)	130 (28.4)	0.01
Television	135 (29.2)	295 (64.8)	<0.00001
Radio	111 (24.0)	137 (30.0)	0.3
Newspaper	24 (5.2)	58 (12.8)	0.06
Others	15 (3.2)	1 (0.2)	0.1
Don't know	20 (4.3)	1 (0.2)	0.05

† P-value of comparison between the first and the second survey (Pre-KAP and Post-KAP).

Discussion

The aim of health education on DHF was to inform people of available scientific knowledge of the disease, so that they could use this knowledge to bring about change of attitudes and practices for better health. DHF education increased their understanding of the problem and encouraged their participation in prevention and control measures against the disease[4].

In the Pre-KAP period, we found that about half of the mothers knew that fever and petechia were the symptoms/signs of DHF, while only a small proportion of mothers (12.5-25.2%) knew about the dangerous signs such as severe vomiting, abdominal pain, haematemesis and melena. This explains why mothers sometimes brought their children with profound shock to the hospital very late. Therefore, in DHF education, we advised mothers on how to recognize DHF and to bring their children to the hospital immediately[5].

In the Pre-KAP period we knew that only a small proportion of the mothers gave proper care to their children with fever. So, in DHF education, the mothers were advised how to take care of the child with DHF at home. The fact that the proportion of mothers who gave proper care to their children (giving antipyretic drugs; sponging; encouraging the child to drink, to eat; seeking doctors) in the Post-KAP period was significantly improved showed the impact of health education on KAP of the mothers. However, still 13.5% of them bought drugs from a pharmacy. It raised the need to educate private pharmacies in any future programme on DHF education.

Up to 83.5% of the mothers said that mosquito transmitted the disease, but only 25.2% of them knew in the Pre-KAP period that mosquito bit children during the daytime. Concerning prevention of DHF, only 24% of the mothers noted that the use of larvicides was the best control measure. It told us to advise the mothers on how to prevent the disease effectively, and motivate them to participate in its control. The fact that the proportion of mothers who did not know about DHF transmission and measures to prevent the disease from occurring was brought down to 0.7%, and those who understood that the use of larvicides was the best control measure to prevent DHF was significantly increased, was encouraging.

The main sources from which the mothers received information about DHF were health personnel and other people. So, transmission of information on DHF directly from person to person was very effective. We concentrated on training health staff and improved advising the mothers on DHF. We also kept in mind that the education levels of most mothers were low, so while advising the mothers, health workers had to use simple words which were easy to understand. Health workers spoke slowly and sometimes repeated what they said in order to help the mothers remember. Leaflets and posters that were developed for DHF education had more pictures and less text. In the Post-KAP period, the proportion of mothers who received information on DHF from health personnel increased from 44.9% to 86.4%. This showed that our programme of health education had made a strong impact on the mothers' KAP of DHF.

Besides health education for mothers, we included in the project other activities such as motivating the commune people's committee, the youth and women's unions to participate actively in the programme of dengue control in their communities. These activities also contributed to the improvement of the mothers' KAP of DHF.

Conclusion

The purpose of health education on DHF for mothers was to raise their level of knowledge about the disease: how to recognize the child with DHF; how to take care of the child at home; how to recognize the dangerous signs in order to bring the child to hospital in time; and how to prevent the disease. They were also advised to change their attitudes and practices in order to control the disease in their communities. At the end of the project, we witnessed encouraging results. Health education had made a strong impact on the mothers' KAP of DHF. The need now would be to sustain this programme and implement it in other communities as part of the national programme for dengue control.

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