

**Community-based study on awareness and practice of care givers  
regarding Dengue Haemorrhagic Fever in Thaketa Township, Yangon**

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The study was conducted in Thaketa Township involving the 405 respondents of age 18 years and above. The majority got medium scores. The mean knowledge and practice scores of the caregivers were not statistically different whether there was a primary DHF case at home or not. Almost 60% of the interviewees got DHF message by watching television and they recommended that it was the most effective media. Persons who had access to radio, television, newspapers and journals got higher chance than those who had not. Radio is still a valuable tool in health education process in semi-urban area where electricity is running out. Less than 15% was exposed to none of the Information, Education and Communication (IEC) materials. More than six years of schooling, being currently married, access to television, radio, newspapers, and journals were significantly related to total scores. Larva was found in 67% of water storage tanks and 15.9% of flower vases according to the observation checklist. Community members were more interested how DHF was transmitted to the child rather than the *Aedes* mosquito. Low practice score (65%) was associated with high knowledge level, indicating that high knowledge did not necessarily lead to correct practice. Less than half of the subjects had seen posters and pamphlets. IEC materials need to improve in way of presenting messages and should be sufficiently distributed in the community.

## INTRODUCTION

Dengue is an urban disease, but it is becoming rural. About 50-100 million cases of dengue fever were estimated annually. Almost 500,000 Dengue Haemorrhagic Fever (DHF) cases require hospitalization each year, of which 90% are children less than 15 years of age. Mortality averages 5% of DHF cases and epidemics are cyclical [1].

DHF is a severe, often fatal, febrile disease characterized by abnormalities of haemostasis, and in severe cases, a protein losing shock syndrome. The incidence of DHF is greater by far in Asia than in the Americas. DHF continues to be a serious

public health problem and a major cause of hospitalization and death among children in many Asian countries [2].

DHF is one of the Diseases Under National Surveillance and is also enlisted as 17<sup>th</sup> priority disease in Myanmar National Health Plan (1996-2001). One of the strategies stated in NHP includes IEC by production of guideline for Basic Health Staff (BHS) in prevention and control of DHF. DHF is endemo-epidemic in many places, 12 out of 14 States and Divisions in Myanmar [3].

Breeding sites cited by respondents include roof gutters apart from containers, receptacles, vases, flower pot plates, and

bamboo holders [4]. In Myanmar, health education in the form of health talks are routinely carried out in schools and in the community. Before and during epidemic season, health messages are informed through radio, television and newspapers.

WHO guidelines on Global Strategy for Control of DF/DHF vectors included:

- (1) Selective integrated mosquito control with community and intersectoral participation
- (2) Active disease surveillance based on a strong health information system
- (3) Research on vector control, etc [5].

This study will provide some recommendations for existing IEC materials regarding DHF: source reduction and early symptom of DHF. Community participation on case information and vector control will be enhanced. Awareness of caregivers for early referral can prevent severe complication of DHF which in turn leads to reduction of mortality.

### *Objectives*

The general objective was to assess the awareness and practice of care givers regarding DHF in Thaketa Township in Yangon. The specific objectives were to identify the awareness and practice of care givers on DHF, to assess the source of knowledge, and to recommend for existing IEC materials.

## **METHODOLOGY AND DESIGN**

A community-based cross-sectional study was conducted in Thaketa Township, involving 405 subjects of age 18 years and above. Care givers were those who took care of the children at home or at the health center or at the clinic. Thaketa Township, one of the hyperendemic regions in Yangon Division, was purposely selected because there were 3 deaths out of 182 cases from January to July, 2002. Four wards were

randomly selected out of nineteen.

Both quantitative and qualitative data collection methods were used.

Semi-structured questionnaire was used for interviews of community members after obtaining an informed consent. The households where a child was residing were selected randomly. In these households, we chose one subject from each household, regardless of sex. The respondent must be a relative of the child. No specific exclusion criteria were employed. Mothers were the priority group in the interview. If the mother was not present at home during the interview, another household member (father/ grandfather/ grandmother/ brother/ sister/ uncle/ aunt) was requested to answer the questions. Samples from each of four wards were taken proportionately based on total population of each ward. Data collection tools were pre-tested. The observation checklist was also used to support the findings.

For qualitative data collection methods, focus group discussions (FGDs) were performed to explore the view on existing IEC among BHS, General Practitioners, Maternal and Child Welfare Association (MCWA) members, other volunteers including Ward Law and Order Restoration Council members, and voluntary fire brigade members.

Double data entry, checking, and cleaning were performed using EPI-INFO 6.0, and data analysis was conducted using SPSS 10.0.  $P < 0.05$  was used as the definition of statistical significance. The study lasted one year starting from June 2002.

## **RESULTS**

Sex ratio of male and female respondents was 1:7. Mean age was  $35.9 \pm 10.3$  years. Participants aged 18-35 years were more than those over 35 years (53.6% vs. 46.4%).

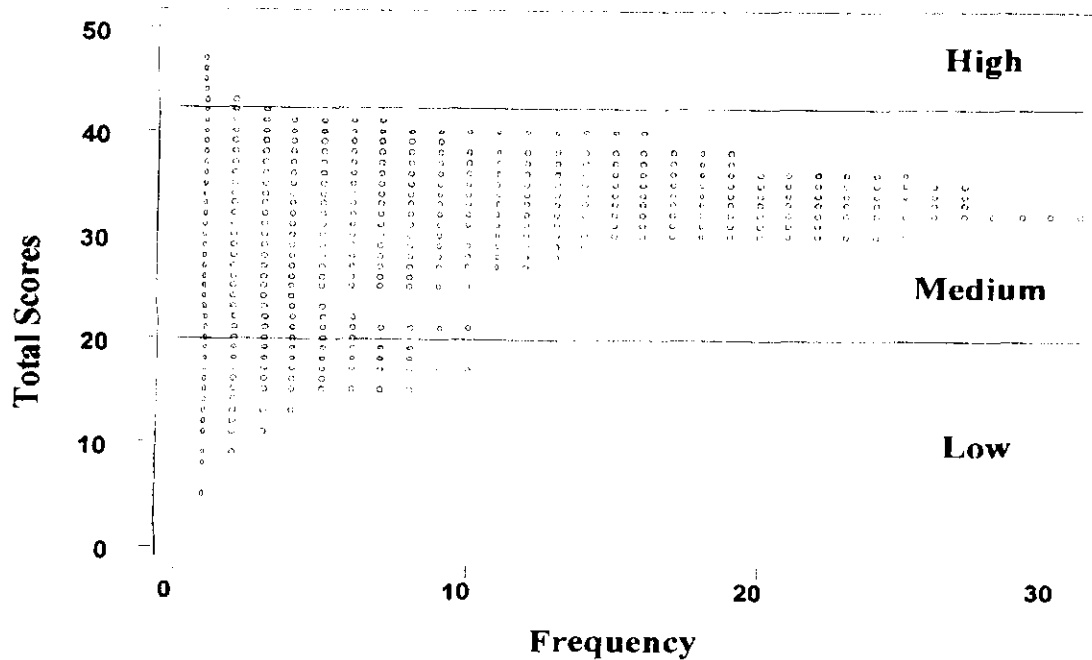


Fig. 1. Total scores of the respondents

Most study subjects were married (93.6%), mothers (78%) and literates (97.3%). Only 8.6% reported having had received  $\geq 12$  years' school education. Nearly three-fourths of the subjects were dependents. Nearly 40% lived in their own house and majority of the houses were built with wood (71.1%). Most of the households (77.8%) had one to two children under 15 years of age. Only 34 (8.4%) of the households participated in the interview had children with history of DHF.

Total score was categorized as low (0-20), medium (21-42) and high (43-62). The majority (83.7%) got medium scores (Fig. 1).

The difference of mean score between male and female was not statistically significant ( $p$  value = 0.271).

*Knowledge scores were computed across 20 questions.*

DHF is common in 3-8 years of age (44.4%). Majority (81.7%) replied that DHF was transmitted by the mosquito bite, whereas only 204 (61.6%) definitely knew the vector of DHF as *Aedes*. It usually bites

in daytime (80.4%). It breeds in clean and clear water (40.8%). *Aedes* can breed inside the house (76.4%). The common breeding sites stated were flower vases (56.7%) and ant traps (37.8%). *Aedes* also breeds outside the house (87.7%), mostly in water containers (61%), old tyres, broken pots, coconut shells (25.7%) and blocked gutters (2.2%). High transmission was found in rainy season (85.9%). DHF was a fatal disease (94.3%). There was no vaccine available for prevention of DHF (20.2%). The previously infected child may suffer second attack of DHF (72.3%). If the child had fever, DHF should be aware (64.7%). Signs and symptoms of DHF were fever (57.3%), vomiting (51.6%), purpura (36.3%), drowsiness (28.1%) and cold extremities (17%), etc. Mean  $\pm$  SD of knowledge scores was  $20.71 \pm 6.92$ .

*Practice scores were computed across 11 curative and preventive action.*

Initial home care management of the feverish child was the use of medicine (56.8%), consulting the health staff (33.3%), tepid sponging (14.3%), and the use of ORS solution (1.7%). Paracetamol was used as

the main drug to lower down the temperature (84.8%) and none of them gave any analgesics. Half of the respondents emptied the water containers once in three days. They brushed thoroughly the rim and inner side (29.4%), covered the water containers tight (26.9%). If larva was found in the water container, they removed larva (13.6%), drained out water (72.8%), and add larvivorous fish (9.6%). Flower vases were emptied once in three days (47.4%). Gutters were not cleared regularly (47.9%). Unused utensils were discarded (51.4%). Mean  $\pm$ SD of practice scores was  $9.48 \pm 3.04$ .

Table 1. History of primary DHF cases at home and scores of the care givers

Scores	Primary DHF cases at home		P value
	Present	Mean $\pm$ SD	
Knowledge score	present	$21.09 \pm 7.13$	0.742
	absent	$20.68 \pm 6.91$	
Practice score	present	$9.62 \pm 3.27$	0.832
	absent	$9.52 \pm 2.57$	

Mean knowledge and practice scores of the care givers were not statistically different whether there was a primary DHF case at home or not (Table 1).

Table 2. Knowledge scores and practice scores

Knowledge scores	Practice scores		Total	P value
	Low	Medium & high		
Low	92 72.4%	35 27.6%	127	0.164
Medium & high	182 65.5%	96 34.5%	278	
Total	274 67.7%	131 32.3%	405	

Though knowledge scores were high in some respondents, practice scores were

markedly low (65.5%) (Table 2).

The community members used mosquito net (47.9%), used repellants (47.2%), wore long sleeves (12.6%), use other methods (8.6%), and none (5.2%).

The interviewees obtained DHF information by watching television (60.7%), by listening to the radio (33.8%), by reading the pamphlets (48.6%), by reading the newspapers/journals (32.85%). Less than 15% was exposed to none of the IEC materials. The facts in those IEC were concise and easily recognized (78.3%). They recommended that television was the most effective media for dissemination of knowledge regarding DHF in the community.

As seen in Table 3, more than six years of schooling as well as being currently married were the only two respondent's characteristics significantly related to the total scores. Survey respondents who had 6-20 years of schooling were twice more likely to obtain high scores than those with 0-5 years of schooling. The total scores were high among the currently married compared with the unmarried, and the difference was statistically significant. Respondents who were exposed to health education media such as television, radio, newspapers, and journals captured high scores than those who had not. The chance was significantly higher among respondents who watched television (three times higher) than those who did not.

We counterchecked some responses by the observation checklist. Nearly 55% of households had two to three water containers. Although 46.5% of water containers had the lids, only 19% were covered tight. Larva was found in 67% of water storage tanks and 15.9% of flower vases at the time of interview. Gutter blockage was observed (3.2%). Old tyre, coconut shells and tins were found in the compound and the larva existed in half of

Table 3. Logistic regression model of total scores, by respondent's characteristics, and exposure to health education media

Variables	(n)	Percent	Odds ratio (95% confidence interval)
<i>Respondent's characteristics</i>			
Marital status			
- currently unmarried ( <i>r</i> )	26	6.4	1
- currently married	379	93.6	3.83(1.041-9.130)*
Years of formal schooling			
- 0 to 5 ( <i>r</i> )	133	32.8	1
- 6 to 20	272	67.2	2.134 (1.135-4.010)*
Mean years of schooling	7.6±3.6		
<i>Exposure to health education media</i>			
Radio			
- not listened ( <i>r</i> )	268	66.2	1
- listened	137	33.8	4.467 (1.463-3.641)**
Television			
- not watched ( <i>r</i> )	159	39.3	1
- watched	246	60.7	3.839 (1.906-.733)***
Newspaper/journal			
- not read ( <i>r</i> )	272	67.2	1
- read	133	32.8	2.890 (0.943-8.853)

\*Significant at  $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ , (*r*) = Reference category.

these solid wastes.

Findings on FGDs were presented in a short report elsewhere.

## DISCUSSION AND RECOMMENDATIONS

Above findings showed that community members had considerable knowledge particularly on transmission of DHF by mosquito bite, biting time of *Aedes*, and little knowledge on main vector of DHF (*Aedes*). Half of them replied that *Aedes* breed in polluted water. Most of the interviewees responded that common breeding sites of *Aedes* were the water containers and flower vases. Ant traps, broken pots, tins, old tyres, coconut shells were moderately known breeding places. Blocked gutters were the least known breeding site. Almost all participants were aware that DHF had fatal tendency. Nearly 80% thought that vaccine against the disease

was available. The majority applied measures to prevent the child from biting of mosquito and very few percentages used none. Points that should be highlighted for the community awareness are:

- *Aedes* is the main vector for DHF.
- *Aedes* only breed in clear water and not in polluted water.
- Blocked gutters are the possible breeding sites for *Aedes*.
- There is no vaccine for prevention of DHF nowadays.
- Sustainability of larva control measures is a must.

No statistical significance was found in knowledge and practice scores of male and female interviewees. However, the married got more chance to obtain high scores than the unmarried. The married were more enthusiastic and interested in DHF disease itself, preventive and control measures, than the unmarried as they had to take care of the children. The higher the year of schooling,

the better the chance to get high scores.

The caregivers with low educational level should be targetted for health education. The practice responses included real practice and intended practice. It indicated that most people are aware of DHF, irrespective of the presence or absence of a previously infected child in their family. Low practice score was observed among those with high knowledge level, which means that high knowledge does not necessarily lead to high practice. Barriers in behavioral change should be searched in further studies.

There were very few respondents who gave sponging and ORS when a child was febrile. And also, those who carried out larva control measures, and protected the child from mosquito bite during daytime were the minority group. It needs to investigate in detail for underlying reasons of why people fail to carry out corrective actions in caring the sick child, larval control, and protection from mosquito bite at daytime. Moreover, ORS should be promoted in home care of feverish child.

Less than half of the subjects had seen posters and pamphlets. Sufficient numbers of IEC materials should be distributed in the community.

Few interviewees were not exposed to any type of existing IEC. It needs to find ways to improve the exposure by discussions with community members and health workers through participatory approaches.

Persons who had access to radio, television, newspapers and journals got higher chance than those who had not. Television is the most effective media for the public and various forms of telecast, such as songs, comedies, short movies with famous actors, actress, etc. apart from discussions and health talks. Radio is still a valuable tool in health education process because in many places in semi-urban area. Specific IEC

messages should be included through multiple channels. Choice of media by the VBDC Programme is important. Television spots, and radio programmes should be arranged and it is necessary to assess the effectiveness. Further improvement of newly drafted IEC is a necessity.

Although many houses had at least two to three water containers, they were not covered tight to prevent from larva breeding. Larva were inspected in many tanks, and also in flower vases, gutters, and solid wastes. Social mobilization for sustainability of larva control activities should be implemented. Advocacy of volunteers for larval control, and partnership with local NGOs should be strengthened. Moreover, studies on how to motivate the people to sustain larva control measures, and how to promote an access to DHF information, are necessary.

## ACKNOWLEDGEMENT

The authors wish to acknowledge the Township Medical Officer and basic health staff in Thaketa Township for their support. We are grateful to the MCWA members, other NGO members and to the study area residents whose assistance made the study successful. This study was funded by WHO APW.

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