The Roles of Pharmacists in Relation to Medical Doctors, Nurses and BHWs in Preventing Dengue

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Abstract- The roles taken by Pharmacists, Medical Doctors, Nurses and Barangay Health Workers (BHWs) are important in the maintenance of community health and prevention of diseases as Dengue. In general the study aimed to determine the roles of health professionals in Dengue prevention in the community. Specifically, the it aimed to obtain the demographics of the respondents, describe the roles of pharmacists in Dengue prevention in the community relative to medical doctors and nurses and to compare the roles of pharmacists with BHWs. Pharmacists were observed, chronology, by community people to engage in drug dispensing, drug prescription and researches related to Dengue prevention while medical doctors were observed to engage in drug prescription, researches and drug dispensing. Both health professionals engage less in community activities related to Dengue prevention unlike the Nurses who are active in community health information. BHWs do researches and community activities related to Dengue prevention at higher percentage than Pharmacists, Medical Doctors and Nurses. These community health workers showed low roles in drug prescription and drug dispensing.

Index Terms- Barangay health workers, community, medical doctors, nurses, dengue

I. INTRODUCTION

A. Background of the Study

In 2011, it was reported that the Philippines ranked 4th in the list of Association of Southeast Asian Nations (ASEAN) member-countries afflicted by dengue [1]. Only July 26, 2012, the Philippine Department of Health (DOH) reported a 16-percent rise in dengue cases. The DOH National Epidemiology Center’s (NEC) dengue surveillance report mentioned that there were already 51,597 cases recorded from Jan. 1 to July 14, 2012. The surge, as stated by NEC is 16.43 percent higher compared to the same period in 2011. Death tolls increased from 293 to 328 during the same period in 2011 as well. Most of the cases occurred in Metro Manila followed by Calabarzon and Central Luzon. There were peaks of dengue incidence in the Zamboanga Peninsula, Bicol, Davao region, and Western Visayas at 227%, 137%, 136% and 124%, respectively. NEC also reported that 53% of dengue patients were male. Many of the patients were children and 40% belong to the age bracket of 1-10 years of age [2]. It was mentioned that Dengue which is a mosquito-borne infection that results to severe flu-like illness, with potentially fatal complication of dengue hemorrhagic fever has no specific treatment as of yet. Only correct medical care aids in the survival of Dengue patients [1].

Health professionals can be trained to become health informationists[3] in order to contribute to the prevention of Dengue in the Philippines. Medical doctors may further enhance their health communication skills by explaining diagnosis, investigation and treatment involving the patient in the decision-making; communicating with relatives; communicating with other health care professionals; breaking bad news; seeking informed consent/clarification for an invasive procedure or obtaining consent for a post-mortem; dealing with anxious patients or relatives; giving instructions on discharge; giving advice on lifestyle, health promotion or risk factors [4]. Public health physicians work in a variety of settings, including nongovernmental organizations, manage care organizations, occupational medicine, aerospace medicine, academia, public hospitals, and governmental agencies. These physicians work on the areas having the need for higher levels of public health knowledge and practice [5].

Community health nursing focuses on case finding, health maintenance, health teaching and counseling activities. It is geared towards the improvement of health for the total community. The practice focuses on groups at risk of specific problems on health. These vulnerable groups include the pre-schoolers, pregnant women and those who have long term health problems [6].

Among other mandates, pharmacists can take part in health promotion campaigns, both locally and nationally. They can handle a wide range of health-related topics specifically on drug-related ones. They may also tackle topics concerned with other health problems like diarrhea, tuberculosis, leprosy, HIV-AIDS as well as family planning. They may also take part in the education of local community groups in health promotion, and in campaigns on disease prevention, like the Expanded Programme on Immunization, and malaria and blindness programmes [7].

B. Objectives

In general the study aimed to determine the roles of health professionals in Dengue prevention in the community. Specifically, the study aimed to obtain the
demographics of the respondents. Also the research aimed to describe the roles of pharmacists in Dengue prevention in the community relative to medical doctors and nurses. To compare the roles of pharmacists with Barangay Health Workers (BHW).

C. Scope and Limitation

The study looked into the roles of pharmacists, medical doctors, nurses and Barangay Health workers in a community situated in a Dengue hot spot in the Philippines. Three pre-identified community clusters where used to attain the objectives. Survey questionnaires were used to determine the roles of the above said professions in relation to Dengue prevention. Only descriptive statistics was used to analyze the data.

D. Significance of the Study

The results of the study may be used to catalyze improved participation of Pharmacists in the field of health care in an inter and multidisciplinary approach with medical doctors, nurses and BHWs. Revitalizing the roles of health professionals will hopefully lessen the incidence of Dengue fever in the Philippines. Enhanced specialized training in community health practice may be proposed for the Philippine Educational System.

<table>
<thead>
<tr>
<th>Roles of Allied Health Professionals in Dengue Prevention</th>
<th>BHW</th>
<th>pharmacist</th>
<th>doctor</th>
<th>nurse</th>
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<tbody>
<tr>
<td>Gives information</td>
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<td>Does home visits</td>
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<tr>
<td>Prescribes medicines</td>
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<td>Dispenses medicines</td>
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<tr>
<td>Cleans the environment together with the community residents</td>
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<tr>
<td>Helps in spraying insecticides</td>
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<td>Helps in setting up Ovi-Larvicidal traps</td>
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<td>Collects Ovi-larvicidal traps</td>
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<td>Researches</td>
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<tr>
<td>Do visual aides</td>
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II. METHODOLOGY

A. Research Design

The study followed descriptive, exploratory design using a survey questionnaire geared toward attainment of the set objectives. The study intended to explore the roles of health professionals and workers in a community in the Philippine setting.

B. Locale of the Study

The study was conducted in a hot spot in Metro Manila, Philippines- Barangay Old Balara, Quezon City. The pre-identified areas were Area 1-Luzon, Area 2-Old Balara and Area 4- Sitio Payong.

C. Data Collection

Fifteen families per cluster where randomly selected. Both the father and the mother or the oldest persons in each family were requested to answer the formulated survey questionnaire on demographics and the segment related to the roles of health professionals and workers. They were asked to tick their corresponding answers per row and column combination. The questionnaire was translated in Filipino(Table I)

D. Data Analysis

Descriptive statistics was used to analyze the roles of pharmacists in relation to medical doctors, nurses and BHWs. Percentage was mainly utilized.

III. RESULTS AND DISCUSSION

The selected site for the study as mentioned was in Barangay Old Balara, Quezon City Philippines. This is a hot spot in Metro Manila in relation to Dengue outbreaks. Below is the map from the Dengue ReMoVe Website for the three areas that were studied

![Map of experimental sites](image)

Experimental sites of the dengue surveillance project in bgy old balara; AREA1-luzon, AREA1-old balara and AREA4-sitio payong

There were 82 who responded to the survey questionnaires out of the 90 distributed. The respondents’ ages clustered from 21-40 years old. Majority were females, married and without work. Most are high school graduates (Fig.1, Fig. 2, Fig. 3 and Fig. 4).

![Age of respondents](image)

Figure 1. Age of respondents
From the results of the survey it was shown that Pharmacists were observed by community people to engage in drug prescription, drug dispensing, researches related to Dengue prevention at 27%, 45% and 18% respectively while medical doctors were observed to engage in the same activities at 67%, 29% and 37%. The drug prescription activities of medical doctors were observed by the respondents at higher percentage relative to the pharmacists while drug dispensing was higher among pharmacists than medical doctors. Because of the answers given to the survey form, the observation then implies that Pharmacists also prescribe drugs in the community which is not within their responsibilities. Pharmacists engage in researches related to Dengue prevention at a percentage lower than that of the medical doctors. Both Pharmacists and Medical Doctors have low participation in community activities even with information dissemination that can help prevent Dengue. However, they have shown lower roles in drug prescription, dispensing and researches related to Dengue prevention relative to the Pharmacist.

In relation to the BHWs, the pharmacists and the other health professionals showed very low roles in Dengue prevention in the community. BHWs give information, does home visits, cleans the environment together with community residents, helps in spraying insecticide, helps in setting up Ovi-Larvicidal traps, helps in collecting Ovi-Larvicidal trap, creates visual aids for information at 73%, 76%, 24%, 78%, 72%, 71%, 69%, 62% respectively. BHWs do researches at higher percentage than any of the health professionals. These community health workers showed low roles in drug prescription and drug dispensing at 6% and 24% respectively (Table II).

BHWs are not legally mandated to prescribe drugs. The same holds for dispensing of drugs unless a special training was undergone (Fig 6)

### TABLE II. ROLES OF ALLIED HEALTH PROFESSIONALS IN DENGUE PREVENTION IN OLD BALARA COMMUNITY

<table>
<thead>
<tr>
<th>Roles of Allied Health Professionals in Dengue Prevention</th>
<th>BHW</th>
<th>Pharmacist</th>
<th>Doctor</th>
<th>Nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gives information</td>
<td>73%</td>
<td>4%</td>
<td>8%</td>
<td>16%</td>
</tr>
<tr>
<td>Does home visits</td>
<td>76%</td>
<td>2%</td>
<td>0%</td>
<td>22%</td>
</tr>
<tr>
<td>Prescribes medicines</td>
<td>6%</td>
<td>27%</td>
<td>67%</td>
<td>0%</td>
</tr>
<tr>
<td>Dispenses medicines</td>
<td>24%</td>
<td>45%</td>
<td>29%</td>
<td>2%</td>
</tr>
<tr>
<td>Cleans the environment together with the community residents</td>
<td>78%</td>
<td>0%</td>
<td>0%</td>
<td>22%</td>
</tr>
<tr>
<td>Helps in spraying insecticides</td>
<td>72%</td>
<td>6%</td>
<td>0%</td>
<td>22%</td>
</tr>
<tr>
<td>Helps in setting up Ovi-Larvicidal traps</td>
<td>71%</td>
<td>2%</td>
<td>8%</td>
<td>14%</td>
</tr>
<tr>
<td>Collects Ovi-Larvicidal traps</td>
<td>69%</td>
<td>2%</td>
<td>6%</td>
<td>22%</td>
</tr>
<tr>
<td>Researches</td>
<td>39%</td>
<td>18%</td>
<td>37%</td>
<td>6%</td>
</tr>
<tr>
<td>Do visual aids</td>
<td>62%</td>
<td>2%</td>
<td>28%</td>
<td>9%</td>
</tr>
</tbody>
</table>

In one study on smoking cessation it was proven that health professionals exert more influence on the public with regard to health issues like cessation in smoking among women [8]. The study showed that the public
tends to believe health professionals over other informationists. If pharmacists and other health professionals can be trained to participate in community information and education drives at rates higher than the present one regarding the prevention of Dengue, perhaps the incidence of Dengue rise in the Philippines will decline.

![Roles of Health Professionals and Workers](image)

**Figure 6. Roles of health professionals and workers**

where 1 Give information; 2 Does home visits; 3 Prescribes medicines; 4 Dispenses medicines; 5 Cleans the environment together with community residents; 6 Helps in spraying insecticide; 7 Helps in setting up Ov-Larvicidal traps; 8 Helps in collecting Ovi-Larvicidal traps; 9 Researches; 10 Creates visual aides for information

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IV. CONCLUSIONS

This study showed that the Pharmacists’ roles are highest on drug dispensing, followed by drug prescription and researches in relation to Dengue. Medical Doctors on the other hand, engage highest in drug prescription, followed by researches and lastly by drug dispensing. Both pharmacists and Medical Doctors showed low participation in community activities related to prevention of Dengue. In general though, Medical Doctors participate at higher rates than Pharmacists except on home visits and spraying of insecticides in the community. Nurses play greatest role relative to the Pharmacists and Medical Doctors in community activities related to Dengue prevention. They do not prescribe medicines and showed very low drug dispensing roles and researches in the community. BHWs do researches and community activities related to Dengue prevention at higher percentage than Pharmacists, Medical Doctors and Nurses. These community health workers showed low roles in drug prescription and drug dispensing.

V. RECOMMENDATIONS

It is recommended that a bigger population of Old Balara, Quezon City, a Dengue hotspot in Metro Manila Philippines be surveyed. Communities in the same area with low occurrence of Dengue must also be surveyed on the roles of the health professionals and workers to analyze if their relative activities affect the prevalence of the disease. Special trainings for Pharmacists and Medical Doctors, and enhanced programs for Nurses in service for the community must be initiated in academic institutions. This will hopefully aide in better education of the Filipino population for the improvement of health and prevention of disease outbreaks as Dengue.

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REFERENCES


Judilynn N. Solidum is a senior member of the Asia Pacific Chemical, Biological and Environmental Engineering Society. She was born in Makati, Philippines on October 14, 1968. She graduated from the University of the Philippines, College of Pharmacy with the degree of Bachelor in 1989. She received her MS Diploma for Pharmacology in 1998 at the University of the Philippines, Manila in 1998. She obtained her PhD degree for Environmental Science at The University of the Philippines, Los Banos, School of Environmental Science and Management in 2006. She has since been engaged in researches related to drug discovery and mechanisms of drug action, as well as eco-toxicology with emphasis on contaminant monitoring and its removal.

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