
Assessment of the Department of Health's 4S Laban Kontra Dengue Program Practices among selected residents in Laguna

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ABSTRACT

Dengue is a disease that has been a huge crisis in the Philippines which had just caused an epidemic in 7 months of 2019, raising 146,000 cases that doubled in the case of last year. There are some programs that deals with the spread of the infection like the 4S Laban Kontra Dengue of Department of Health that eradicates these insects in mainly places that is heavily affected by the disease. The researchers aim to focus if some of the places practice the 4S program in Laguna. The objective of this research is to see the relationship between the demographic profile of parents and their practices in the 4S Program. The collected data pertains to the demographic profile and questions that relates to the topic, these questions are answerable in a survey questionnaire to be handed out to the respondents. It is known that the barangay was informed about the 4S program that pertains to DOH and as well as the knowledge of dengue to its symptoms and its danger. Majority of the parents are in the age of 31-40 years old, are high school graduates, and as well as people who gain P 1,000 to P 9,000 worth of income. The 4S program was only implemented on the highly infected places in the Philippines making no significant relationship between the 4S DOH program and demographic profile of the respondents.

Keywords: *Dengue, 4S DOH Program, profile, parents*

INTRODUCTION

Dengue is one of the concerns in the Philippines, the first epidemic in Southeast Asia is Manila in 1954 the increasing incidence of dengue disease can be explained by some factors. Dengue is caused by one of the four dengue viruses transmitted by a Linnaeus mosquito, which is the mosquito breeds in the open containers with water and they can survive the year in tropical and subtropical climates.

In many cities, the calamity that the dengue has caused is now known in a lot of provinces and in which a declaration from the government regarding to the eradication of dengue has been carried out. They declare that any country that has been in the state of calamity due to dengue will be carried out with funds that may help in the purchase of blood supply and intravenous fluids, diagnostic kits and other medical supplies for patients who need it. An example of this is the Island of Garden City in Samal, Davao Del Norte of July 12. In which there has been a dengue outbreak. The city has been recorded with 249 dengue cases from January to June, with a 730 percent increase compared to the last year with two deaths.

According to Abiva, Acain, Baluran, Becoy, Cruz, Monique (2012), Department of Health (DOH) is calling all the attention of each community worldwide to help fight against dengue. According to their census to the places like National Capital Region, central Luzon, Calabarzon and Ilocos Region, the case of having dengue this year is much lower compared to the other years during same season. Due to this goal, Department of Health planted programs and one of this is 4S to increase the awareness of every Filipinos to fight against dengue. DOH becomes partner with Center and Health Development to fulfill this program. The Department of Science of Technology also launched the program Mosquito Ovicidal/Larvicidal Trap or Mosquito OL Trap to full force the 4S program. They also do a 4 o'clock habit where everyone in the community need to cooperate in disposing the stagnant waters which a suspected place for mosquito to live in.

A study done by Pineda (2019), the Department of health, in partnership with Center for Health Development is enhancing its campaign in kontra dengue through implementing the "Enhanced 4s"

strategy. This said program aims to prevent and control the outgrowth of Aedes- borne disease called dengue throughout the country. 4's program viewpoint is search and destroy breeding sites; seek early consultation; self-protection; and say 'yes' to fogging only in hotspot areas in those areas whose cases is increase for two consecutive cases. This program also made possible thru the help of Local Government Unit.

The goal of the study is to assess the impact of perception of parents on the 4's DOH dengue program. Specifically, the major purpose is to find a relationship between parent's perception and the 4's DOH dengue program. Finding a precise and accurate conclusion regarding this matter will also help the researcher to determine how demographic profile of the respondents, age, gender, socio-economic, educational background affect the perception of parents.

Review of Literature

Foreign Literature

Dengue has been one of the diseases that dramatically have caused burden among the worlds. In a sense that it has caused majority of cases and even have caused misclassification and underreported. It has been estimated that per year, 390 million people are reported to have this disease in which 96 million have manifest it clinically. And among 3.9 billion people in 128 countries has been reported at risk of the infection with dengue virus.

A dengue fever is a common tropical infection with acute fevered illness it can be a deadly infection in the cases of serious manifestation, it can cause dengue hemorrhagic shock. For the diagnosis of dengue, several of the tropical doctors they use the presumptive diagnosis, but the precise diagnosis should be based on the immune diagnosis or viral study. By focusing on treatments, the symptomatic and supportive treatment it is the main therapeutic approach. The part or job of antiviral drugs in the treatment of dengue fever is very limited, but at present, it is widely studied.

A foreign literature by Dantés and Willoquet (2009), claimed that dengue is now the most important vector-borne disease in the Americas and threatens the health of millions of people that live in urban, suburban, and rural environments. Clinical and public health services have been incapable to diminish this disease since there is no vaccine available to avoid infection, no effective medical treatments that avert the development of severe symptoms and no sustainable control measures against the vector that guarantee protection of affected communities. Hence, increase of dengue cases is not only limited in the Philippines rather visible in foreign country too.

Pertaining to the distribution trends, before 1970, only 9 countries had experienced severe dengue epidemics, and now the disease has been endemic in more than 100 countries near the regions of WHO like Africa, the Americas, the Eastern Mediterranean, South-East Asia and Western Pacific in which The America, South-Asia and other western pacific regions are the most seriously affected with the dengue virus. And have been reported to exceed to 1.2 million to over 3.34 million in just the span of 8 years (2008-2016), and up to this day, it does not only increase the cases but also places that have not yet experienced this disease and in any certain time an explosive outbreak may occur. In which it may become a threat for future places that existed already to some countries like Europe, France, and Croatia in 2010.

Dengue is one of the public health problems in the tropical countries. It was named before as hemorrhagic fever or infectious acute thrombocytopenic purpura. It becomes a widespread epidemically. The four-dengue virus serotype circulates in the country where the children are the main carrier. Research for dengue required basic laboratory research, dengue report incidence, risk factor assessment, local epidemiology, and development of improve diagnostic test or the evaluation of interventions (Agrupis et, al. 2019).

Occurring management of dengue fever relies on the community members to controlling the host mosquito's breeding and protecting their self from the direct mosquito contact. Research indicates that by obtaining this vital community participation can be difficult. The current study they used the Health Belief Model as a support to find the beliefs that statistically predict of engagement in two distinct behaviors it is

the mosquito control and self-protection. It is indicated that the Health Belief Model is one of the effective in predicting mosquito control behaviors, but it is less effective in predicting self-protective behaviors. The Dengue fever awareness campaigns they target the people's beliefs as maybe the most effective in obtaining mosquito control behaviors.

Local Literature

Since 1958, dengue has been a notifiable disease in the Philippines. A study conducted by Bravo et. al. (2014), made a literature analysis and review to describe the epidemiology of dengue disease consist of a systematic review that provides a comprehensive overview of the available data involving the epidemiology of dengue cases in the Philippines for the period 2000–2011. The review highlights an increase in the reported incidence of dengue disease in the Philippines. As for the conclusion of the study, it shows that all regions reported cases of dengue disease, and most of them are from most populated, urbanized areas. The outcome of growing population, increasing urbanization, improvements in surveillance, and the limited success of vector control measures may be linked because of the growing incident of dengue disease in the Philippines.

In Iloilo city of May 7, the Department of Health- Center for Health Development (DOH-CHD)-6 underwent a campaign that prevents dengue in which they implemented the program that they have made called "Enhanced 4S" Strategy in which the 4S stands in "search and destroy breeding sites; Seek early consultation; self-protection; and say 'yes' to fogging only in hotspot areas where increase in cases is registered for two consecutive weeks." A meeting that was held by Dr. Rose Marie Lamirez of the DOH-6 who was a Medical Officer III talks about the prevention and control strategy of the "Aedesborne" disease specifically for dengue and the program that will be able to eradicate this disease which is Enhanced 4S that was accepted in 2017 by the World Health Organization (WHO).

Reports regarding to the cases of dengue that the World Health Organization annually observe is that the number of cases has increased from 2.2 million in 2010 to over 3.34 million in 2016, and although it has been uncertain with the activities that pertains to dengue. It still shows how sharp and large the increased cases have been in the reported cases within those years. It also features diseases that include its epidemiological patterns that relates to dengue including hyperendemicity of multiple dengue virus serotypes and multi countries have been impact alarmingly on both human health and the global and national economies.

A report on August 6, 2019 said that the Philippines declared that the disease called dengue was declared a national epidemic saying that this disease have killed atleast 622 people in the country this year. More than 146,000 cases have been reported in the last seven months of this year (2019) which was doubled from the last year cases (2018), according to the country's health department. The officials have also said that the Western Visayas have been the most affected place in which has more than 23,000 cases of the disease, which was followed by the suburbs at the south of Manila and its capital which had more than 16,500 cases as well as the southern island of Mindanao with high cases of the disease.

Regarding the perception of parents, a study by Valido, Laksanawati and Adi Utarini (2018), created a study about acceptability of the dengue vaccination among parents in urban poor communities of Quezon City, Philippines before and after vaccine suspension. Based on their study, the acceptability of the dengue vaccine was rooted in the previous vaccine experience of parents. Parent's knowledge about dengue vaccine was limited because it was new, and they believed the dengue vaccine was like other government vaccines. Parents with pleasant experience with government vaccinations have accepted the vaccine, but some parents refused the vaccination because their children had an adverse reaction or are afraid of the injection. In the same way, parents who refused the vaccination demanded more information on vaccine safety and benefits especially if they have previous reactions from other vaccines. Those who refuse tend to have more knowledge about vaccines and refuse the dengue vaccine only among other vaccines. They parents believe the vaccine has not been proven effective because it was new. In addition, the vaccine was provided free by government and was seen to improve access.

DOH Secretary Pauly Jean Rosell-Ubian (2015) said that the first prevention must begin within the homes of the citizens and keeping order of their own houses can minimize the cases of this epidemic disease. When people are aware of the case and are oriented with what they must do, it is not hard to have them move and act right to help the government put an end to the dengue case that is taking over Philippines. In connection with this, the DOH and ASEAN leads the promotion of local ASEAN Dengue Day that aims to focus on the two core actions of the 4S strategy as the residents' responsibility for an effective prevention and control program with the enlarging cases of dengue.

DOH Health Chief Francisco T. Duque III (2019) implemented the enhanced 4-S strategy in their households. He warned the people that they should wear protective clothes. He also supported the fogging/spraying to make sure that the population of mosquitoes would not increase.

The DOH reminded the public to implement the 4S strategy in their homes to fight against the spreading of dengue. This is vital to prevent any infection especially towards children and infants. Mosquitoes multiply quickly and numerously, in any space that contains stagnant water, and they have specific times to bite and can come around inside or outside of houses. Therefore, the pressing of 4S strategy is for a good cause and to speed up the banishing of dengue in Philippines. Also, the public must act quickly when symptoms show up to prevent further infections and to cure them as soon as possible; after all prevention is better than cure. According to most of the studies, the main goal of 4's DOH program is to prevent dengue disease and to implement it all over the country, Philippines. About the perception of parents, there are diverse perspective depending on their position in the society.

Conceptual Framework

Figure 1 presents the correlation of the demographic profile of the parents and the perception of parents about the 4's DOH dengue program. The perception of the parents affects the effectiveness of the program because if their perception in the program is effective, they do it, practice it, and follow it, in relation with that, if the 4's DOH Dengue program is effective the perception of the parents to it turn in into positive.



Figure 1. Conceptual Framework of the Study

Objectives of the Study

This study aims to assess the DOH's 4S dengue program practices among the selected residents in Laguna. Specifically, it seeks to describe the demographic profile of the respondents in terms of age, gender, socioeconomic status, and educational background; know the perception of the respondents about the practices of 4S program; and determine if significant relation exists between the perception towards the dengue program and their demographic profile.

METHODOLOGY

A quantitative descriptive method was used in the conduct of this study. Survey questionnaires were distributed to 71 parents in the selected community. The first part of the questionnaire indicates the demographic profile of the respondent. In this section, age, gender, socio-economic status, and educational background was answered by checking which range the answer of the respondent fits. For the second part of the questionnaire, the perception of the respondents was measured. The second part is the perception of parents about the practices of 4S DOH dengue program and was measured through a 4-point Likert scale.

Researchers initiates the data gathering by asking first a permission to conduct a survey in each household and took an opportunity to gather data outside the house and it was requested as well to have been passed out to other neighborhoods near the specific area that will be convenient for the researchers to obtain. The whole surveying process happened in one day. After gathering all the data needed, the answers of the respondents were all tallied and processed through a statistical software, SPSS. Frequency percentage was used to summarize the demographic profile of the respondents. Weighted mean was used for the Likert Scale, and Pearson Chi-square was used in determining the relationship between variables.

RESULTS AND DISCUSSIONS

Table 1 shows the distribution of the respondents according to their profile. The highest frequency for age of respondents is 31-40 with 26 respondents. Second is 21-30 with 22 respondents. The lowest frequency is 20 & below with only 3 respondents. According to Ronald Giovanny Diaz (2018) age was included in the models as an adjustment variable and is significantly associated on dengue knowledge, including the recognition of the symptoms, the name and appearance of the mosquito. The total female respondents are 47 while the male is 24. Females are more responsive to this case for the protection of their children in Dengue. It is their first duty to ensure the healthy body of their children. Majority of people in that area have a salary of over P1000 - P9000 (42.3%) and the rest consists of people who gets an annual salary of below P1000 which percentages to 28.2% of the respondents while the people above P10,000 covers 29.6% of the respondents in the survey performed.

Table 1. Demographic profile of respondents

Profile	Frequency	Percent
Age		
20 and below	3	4.20
21 – 30	22	31.00
31 – 40	26	36.60
41 and above	20	28.20
Gender		
Male	24	33.80
Female	47	66.20
Socioeconomic status		
Below 1,000 php	20	28.20
1,000 – 9,000 php	30	42.30
10,000 and above	21	29.60
Educational background		
Elementary Undergraduate	1	1.40
Elementary Graduate	6	8.50
High school Undergraduate	9	12.70
High school Graduate	24	33.80
Vocational	7	9.90
College Undergraduate	8	11.30
College Graduate	16	22.50

Furthermore, 22.5% of the resident have taken and have finished college, 11.3% have been undergraduate in college, 9.9% are vocational, 33.8% has graduated high school in which is most of the respondents, 12.7% have been high school undergraduate, 8.5% in elementary and lastly 1.4% of the people who have been undergraduate in elementary. Hence, most of the respondents are high school graduate. A study by Valido, Laksanawati and Adi Utarini (2018) states that parent's knowledge about dengue vaccine was limited because it was new. Parents with pleasant experience with government vaccinations have

accepted the vaccine, but some parents refused the vaccination because their children had an adverse reaction or are afraid of the injection. In the same way, parents who refused the vaccination demanded more information on vaccine safety and benefits especially if they have previous reactions from other vaccines. This concludes that educational background has nothing to do with person's knowledge about dengue, instead they gain knowledge about dengue through experience.

Table 2 presents the parent perception about the 4S Laban Kontra Dengue DOH program. It shows that all the given practices of 4S DOH program was agreed by the parents. This also states that most of the interviewed parents were well informed about the dengue with a weighted mean of 3.41. While the least most agreed by the parents is the fogging program of the barangay with weighted mean of 2.73.

According to Abiva, Acain, Baluran, Becoy, Cruz, Monique (2012), Department of Health (DOH) is calling all the attention of each community worldwide to help fight against dengue. Due to this goal, Department of Health planted a program and one of this is 4S to increase the awareness of every Filipinos to fight against dengue.

Table 2. Perception about 4S Laban Kontra Dengue DOH program

	Weighted Mean	Verbal Interpretation
I am well informed about the dengue.	3.41	Agree
I know the factors and dangers of dengue.	3.37	Agree
I know the symptoms of dengue when someone is infected by it.	3.35	Agree
Properly usage of dengue repellent like lotion, katol, etc. is used whenever needed in this household.	3.32	Agree
Barangay knows the basic precautions for dengue.	3.10	Agree
I know when a person is infected with dengue.	3.07	Agree
I know the DOH's 4S program.	3.06	Agree
The Barangay Health Center are participating with the DOH's 4S program.	3.01	Agree
The Barangay Health Workers always reminds the people in the barangay about the risk and safety of dengue.	2.94	Agree
DOH is attentive when an incident of dengue occurred.	2.93	Agree
Programs pertaining to DOH's 4S is widely implemented here at the barangay.	2.87	Agree
The Barangay DOH's 4S practices/program is effective in your barangay.	2.82	Agree
Eradication of any sort of dengue infestation is outmost priority in this barangay.	2.77	Agree
Programs pertaining to cleanup in the streets of the barangay are held every year.	2.76	Agree
The barangay maintains the fogging program.	2.73	Agree
Composite Mean	3.07	Agree

Legend: 1.00 – 1.49 Strongly Disagree; 1.50 – 2.49 Disagree; 2.50 – 3.49 Agree; 3.50- 4.00 Strongly Agree

Table 3 shows the result of the 4S practices vs. the demographic profile of the respondents. It states that all demographic profiles (age, gender, socio-economic status, and educational background) have no significant relationship into the practice of the 4S in Laguna. The respondents perceived that the barangay

is biased when it comes to implementing the said program, and this could be one of the reasons. Also, with the existence of 4S program in their barangay, fumigation was only done once after the program was implemented. This means that regardless of the demographic profile of the residents, the result is not dependent on them. Hence, the practice of 4S is not completely implemented by the barangay and is subjected to ineffectiveness.

Table 3. Relationship between practices of 4S and demographic profile

Practices vs.	Pearson Chi-square	P-value	Interpretation
Age	4.702	.583	Not significant
Gender	2.611	.271	Not significant
Socioeconomic status	6.248	.181	Not significant
Educational background	5.795	.926	Not significant

Legend: If P-value is less than or equal to 0.05; significant; If P-value is greater than or equal to 0.05; not significant

CONCLUSIONS

The Department of Health had enhanced the implementation of 4S strategy in the households of the public. The acronym stands for “Search and destroy” mosquito-breeding sites, employ “Self-protection measures” (i.e. wearing long pants and long sleeved shirts, and daily use of mosquito repellent), “Seek early consultation”, and “Support fogging/spraying” only in hotspot areas where increase in cases is registered for two consecutive weeks to prevent an impending outbreak. This program is to prevent the number of cases of dengue to increase and to make sure the community’s safety.

This study is to show if the practices of the 4S DOH dengue program is being implemented in a selected barangay in Laguna. Based on the findings, the respondents that the researchers interviewed are mostly female at the age between 31 to 40 years old. The average monthly income that the respondents have are mostly between ₱ 1,000 - ₱ 9,000. Most of the respondents are high school graduate. The perception of the respondents about the practices of 4S DOH dengue program is that the practices are not that being implemented in the community. The practices of 4S DOH dengue program is executed only to the places where dengue cases are being reported. As per the data gathered, there is no significant relationship between the 4’s DOH dengue program and the respondent’s demographic profile due to the lack of implementation of the practices of 4’s DOH dengue program in the community. Most respondents stated that the DOH is just giving a powder that they may put in the canals to prevent the breeding of the mosquitos. One of the practices is the fogging where in the respondents said that not the whole community are experiencing the fogging. The data that the researchers gathered are the proof that 4S DOH dengue program that stands for Search and destroy, Self-protection measures, Seek early consultation, and Support fogging/spraying is not an effective practices in the community.

Recommendations

The 4S DOH program is certain to have some influence over parent’s perceptions since it is integrated into the program of the barangay. However, the results show no relationship depending on the survey made by the researchers in terms of demographic profile and parent’s perception about the 4’s DOH dengue program. This conclude that the chosen respondent and place must be purely connected with the objectives of the research, so that the research will be reliable and convenient at the same time. The citizens of every barangay must learn how to respond to every program that will be implemented, so that they will have enough knowledge about what is happening in their area. The parents must learn to participate, especially to a program like this where the health of their children can be affected. Barangay workers must also learn to implement their program effectively in the whole area of the barangay and not just in area that

is infected to prevent rapid spreading of disease. The barangay should also focus on all subdivisions under their territory because each of them are all in risk of Dengue.

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