

Assessment of the Implementation of Maternal and Child Health Services of Rural Health Units in Tarlac City

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Abstract—This study aimed to assess the implementation of the Maternal and Child Health (MCH) services delivered by rural health units (RHUs) in Tarlac City. This study determined the available health services in the health centers; described how target clients are informed of the services; described the system of how these services are supported and the flow of their delivery. The assessment by the 178 health workers focused on the adequacy of the budget and supplies; adequacy of the number of RHU personnel; and their competence in delivering the services. The 487 mothers assessed the extent of information and dissemination; adequacy of health services or programs; availability and adequacy of health providers when they are needed. The problems experienced by both the RHU personnel in delivering the health services as well as those encountered by the target clients in availing them were also identified. An action plan involving educational institutions in health promotion was developed.

Index Terms—Maternal and child health services, millennium development goals, rural health units.

I. INTRODUCTION

Reducing child mortality rates, improving maternal health, fighting disease epidemics such as AIDS and achieving universal primary education are among the eight Millennium Development Goals (MDGs) that 192 United Nations member States and 23 international organizations have agreed to achieve by the year 2015 [1]. To realize these goals, various government and non-government institutions are encouraged to participate and cooperate.

The United Nations Children's Fund (UNICEF) [2] recognized the central role of education in the Millennium Development Goals during the MDG SUMMIT 2010 High Level Round Table on September 22, 2010 at the United Nations, New York. Accordingly, the behavior and habits of the future parents are determined by the education of today's children and youth. They said that children of parents with at least a basic education are more likely to survive after the age of five because educated parents, particularly mothers, have been reportedly shown to make better use of available health services and provide greater quality care to their children. They even cited one of the findings presented by the United Nations Educational, Scientific and Cultural Organization (UNESCO) that mothers with primary education reduced child death rates

by almost half in the Philippines and by around one-third in Bolivia. Education also delays the age at which young women give birth; adolescent girls are up to five times more likely to die from complications in pregnancy than women in their 20s, and their babies are also at higher risk of dying; poorer and less educated women, especially those living in rural areas, are far less likely to give birth in the presence of a skilled health worker than better educated women who live in wealthier households.

In the Summit, it was reported that effective school health programmes which integrate health, nutrition, sanitation and education services in schools have been proven to improve health. Examples of these programmes are the provision of malarial treatments, de-worming, school-feeding programmes and clean water. Accordingly, these can directly impact the health and survival of children.

The role of education in realizing the goals of reducing child mortality, improving maternal health and achieving universal primary education as elucidated above, prompted the conduct of this study. Schools have to intensify awareness of students of the consequences of early pregnancy, not only to the mother but also to the child. As time progresses and technology is becoming highly advanced, it is observed that more and more students get impregnated. The school then needs to seriously take its role of educating students to be always on guard to spare them from untimely pregnancies.

The Provincial Health Office (PHO) Annual Report [3] indicated that the overall morbidity rate in 2009 is at 12,425/100,000 population and 5,785 deaths with a crude death rate of 4.45/1,000 population. In 2010, the number of death was 5,776. Infant mortality rate (IMR) average was at 5.8 deaths per 1,000 live births for the last three years. The provincial IMR was low as compared to the 2006 IMR national figure of 24 deaths per 1,000 live births. There were 140 infant deaths recorded in 2009. In 2010, this rose to 151. There were also 89 under five year-old children who died in 2010. The number of maternal deaths increased from 0.04/1,000 live births in 2006 to 0.43/1,000 in 2009. In 2010, this slightly rose to 0.45/1000.

Non-communicable and lifestyle-related diseases were reported to be the most significant causes of mortality in Tarlac for the past five years. Infectious diseases remain the leading cause of morbidity over the past five years. Respiratory infections such as Acute Respiratory Tract Infection (ARTI) significantly affect the population at more than 5,400 cases per 100,000. Water, sanitation, and hygiene related diseases such as diarrhea and other gastro-intestinal disorders are also persistently among the top ten causes of morbidity.

The figures above show that the number of deaths in infants, children and mothers has not substantially reduced compared

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to the previous years.

This study then focused on assessing the implementation of maternal and child health services in the Local Health Units (or the Rural Health Units) to determine the factors that could have contributed to the difficulty in substantially reducing morbidity and mortality. Most importantly, another goal of this study is to mobilize the educational institutions in incorporating health promotion in their curricula through an action plan that this study proposed. The partnership and cooperation of health agencies and schools will more likely bring about a stronger force to ensure maternal and child health.

II. REVIEW OF RELATED LITERATURE

The role of education in health promotion is very vital. Goolam Mohamedbhai [4], the president of the International Association of Universities delivered a talk about “The Contribution of Higher Education to the Millennium Development Goals” in the 4th International Barcelona Conference on Higher Education, with the theme “New Challenges & Emerging Roles for Human and Social Development” held on March 31 – April 2, 2008. He asked if the academics are really aware of the MDGs and immediately claimed most of the HEIs are not. He challenged the creation of awareness of the MDGs in HEIs. He added that the MDGs are not just the business of the government but should be the business and responsibility of all stakeholders. This is because according to him, since MDGs deal with human, social and economic development issues, they must “de facto be of concern to HEIs.” He suggested ways on how the HEIs can help in achieving the MDGs. Among these are: (1) Agricultural Colleges and Universities can play a key role in promoting agricultural development thru teaching, research and outreach programmes; (2) HEIs can research into causes of non-attendance to advise policy-makers, arrange literacy courses for parents to influence them to send their children to school, etc.; (3) all student teachers, including fresh graduates, should do a compulsory posting in rural areas, before or after graduation; (4) main role of HEIs here is to train and retrain huge numbers of teachers to meet the country’s needs, and to ensure quality training. In reducing child mortality and improving maternal health, HEIs are directed to educate mothers about childcare. HEIs offering Health curricula can assist in giving immunization to children through coordination with the local health units. HEIs can involve in health education among the communities. To combat communicable diseases such as HIV/AIDS and other diseases, integration of the topic in all curricula can help and HEIs will need to collaborate with other national and regional institutions for concerted approaches.

In Maldives, efforts of schools to contribute in achieving the MDGs were also reported. Maldives is on track for achieving MDGs 4 and 5 and they claimed that MDG 4 was achieved in 2005. A case study about the Maldives Health Promoting Schools Initiative (MHPSI) which was initiated in 2004 was presented by Mr. Ahmed Shafeeu, Director-General, Ministry of Education. The education and health sectors of Maldives work hand-in-hand to create a “health literate” community. The purposes of the MHPSI were: (1) To provide support to schools for increasing the number and variety of health-related

activities (2) To promote involvement of entire school communities in health-related activities and school life; and (3) To help schools become healthier places for students and staff to learn, work and develop. This program was successfully implemented through coordination and management of the School Health Unit, Ministry of Education and linked with national policies and strategies, especially those related to health and education. It is steered by a National Advisory Group, which provides advice and direction on the development of the initiative. In the report, key achievements of the MHPSI were: (1) Existence of a policy framework within both the education and the health sectors; (2) Inclusion of health promotional material in the curriculum; (3) Joint programme by UNICEF, the Ministry of Health and the Ministry of Education to provide Vitamin A to children, and a deworming component was also included afterwards; (4) A teacher-focal point carries out health awareness programmes; (5) Specific initiatives such as water safety, disaster preparedness, life-skills education, and an anti-smoking campaign were initiated and carried out as part of the school health education programme; (6) The Global Health Promoting Schools Initiative was adopted and is being implemented in Maldivian schools; and (7) A Health Promoting School Handbook and a School Health Policy have been published and disseminated [5].

In Pittsburgh, Germany, “Improving Maternal and Child Health Care, A Blueprint for Community Action in Pittsburg Region” was done as an effort to improve the nation’s maternal and child health care system [6]. This was conducted from January 2002 and December 2003. Their methodology included an extensive website search and a literature review of best practices in maternal and child health care; an analysis of local and state policies impacting maternal and child health care delivery; and interviews with representatives of model national programs, local providers, and mothers and families in the Pittsburgh region. The recommendations were further enhanced and refined through discussions with a local learning collaborative composed of key maternal and child health care stakeholders in the community, as well as several national experts in the field.

The findings of the study revealed that maternal and child health care involves multiple actors – the government, other support agencies, the health providers and the community residents. According to the researchers, caught in this system are the consumers of health care services, who must bear the impact of its inefficiencies and inadequacies while simultaneously meeting their other basic life needs. Furthermore, findings revealed the need for a vision that has a tremendous breadth and power that originates from the community’s own needs, values, and goals in order to confront the multiple issues that impact the overall maternal and child health care system.

In the Philippines, efforts in participating in the government’s health promotion activities were also reported. Since the last quarter of 2006, the different Municipal Health Units (MHUs) of the province of Biliran started implementing the center-based child birth delivery in compliance with Resolution No, 166 series of 2006 of the Sangguniang Panlalawigan of the province of Biliran in order to address the maternal and child deaths [7]. This was first implemented in

the MHU of the municipality of Biliran. It was reported that some 15 child births were attended in just about 20 days after the implementation. Since there is only one nurse in this area, their midwives have to attend to delivering mothers residing in their assigned areas and they were willing to be on duty in taking care the mother and her child as they stay at the health center overnight.

In Hinatuan, Surigao del Sur, ten health services were outlined which included maternal care during pregnancy pre and postnatal since this is viewed by the leaders vital to the pregnant mothers to prevent maternal and infant deaths. Provision of Ferrous Sulfate, Vitamin A is given routinely during check-up. Education on maternal hygiene, breastfeeding and family planning are integrated during the prenatal and post-natal care. They also have the Expanded Program for Immunization (EPI) as one of the impact programs of the Department of Health which prioritizes free immunization coverage for all children age 0 to 12 months for the protection against the following communicable diseases: Tuberculosis (vaccine used is BCG), Diphtheria, Polio and Tetanus (vaccine used is DPT), Hepatitis (HBV) and Measles (vaccine used is AMV) [8].

III. STATEMENT OF THE PROBLEM

This study assessed the implementation of the Maternal and Child Health (MCH) services delivered by Rural Health Units (RHUs) in Tarlac City.

Specifically, it aimed to answer the following questions:

1. What are the services available in the local health units of Tarlac City to ensure maternal and child health?
2. What are the standard operating procedures or system of implementing the MCH services?
3. How do the RHU workers assess the system of implementing the MCH services as to:
 - 3.1. adequacy in terms of their number in providing these services;
 - 3.2. their competence in providing the services; and
 - 3.3. adequacy of budget/supplies in providing the services?
4. How are clients informed about the Maternal and Child health services at the local health units?
5. How do the clients assess the implementation of health services as to:
 - 5.1. extent of information and dissemination;
 - 5.2. adequacy of health services or programs; and
 - 5.3. availability and adequacy of health providers when they are needed?
6. What are the common problems encountered by the health personnel in implementing the MCH services?
7. What are the obstacles of the target clients in availing the MCH services?
8. What action program is proposed to involve educational institutions in the effective implementation of Maternal and Child Health Services?

IV. METHODOLOGY

The researchers developed two sets of questionnaires. One was intended for the local health workers comprising of medical doctors, nurses, midwives and barangay health workers. The other set was distributed to the mothers who

sought the services of the local health units during their pregnancy and availed health services for their children. The questionnaires were developed after an interview with the city health nurse head on the existing MCH programs and services. Before fielding questionnaires to the respondents, the questionnaires were shown to the city health nurses for validation. Inputs were considered and the questionnaires were finalized.

The questionnaire for the RHU personnel consisted of open-ended questions and 3-point Likert scale items wherein the mothers responded "adequate or competent (3)," "moderately adequate or moderately competent (2)," and "not adequate or not competent (1)." The questionnaire for the mothers consisted of close ended questions and was written in Filipino, the national language of the Philippines.

The questionnaires for the health workers were distributed in the city health units and in the barangay health stations. Some questionnaires were distributed to the mothers while seeking the services of the centers. Since the researchers could not get enough respondents from the health centers, they went to the elementary schools where other mothers were found waiting for their children.

The respondents of the study were 178 RHU personnel and 487 mothers. The data were analyzed and interpreted using descriptive statistics. Frequencies and Percentages were used to present the problems encountered by the health workers and the clients. The evaluation of the MCH programs from both groups of respondents was presented using the weighted mean.

V. RESULTS AND DISCUSSION

A. Services Available for the Pregnant Mother and Children at the RHUs

RHUs provide four services for the mothers. Prenatal checks are being done for pregnant mothers. The DOH recommends that all pregnant women have at least four antenatal visits during each pregnancy to ensure good health. In these prenatal visits, mothers receive immunization with tetanus toxoid. This will protect them from subsequent exposures to the same microbial agent [9]. According to the Tarlac PHO Maternal Care Program Accomplishment Report (2011), in the last quarter of 2010, there were 2,661 (24.33% of eligible population) pregnant mothers injected with 2 doses of tetanus toxoid and 2,721 (24.88% of the eligible population) received 2 doses of tetanus toxoid plus.

Vital signs of the pregnant mothers such as blood pressure were monitored. The blood pressure of mothers has to be monitored from time to time and prescribe management regimens to hypertensive mothers to prevent premature births due to eclampsia [10], [11]. Weight monitoring is also done to the mothers and they are advised to take in the right diet to prevent overweighing. This may contribute to hypertension. Vitamin A and ferrous sulfate were also given to pregnant mothers. However, some mothers who were interviewed claimed that sometimes the health centers do not have available vitamin A.

Other maternal health services include Health education on healthy and safe pregnancy; proper nutrition for the mother and child; family planning; and proper breast feeding. In the 6th

National Nutrition Survey 2008 initial results showed prevalence of anemia among pregnant and lactating women at 43.9% and 42.2%, respectively [12]. This is the reason why mothers must know how to achieve proper nutrition during pregnancy because if mothers are healthy, their babies will likely become healthy too.

Mothers are also taught about the importance of breastfeeding. In the 2nd Quarter Report for 2011 [13], the MCH coordinator of the City Health Office reported that 715 babies were exclusively breastfed until 6 months. This figure may be small considering the 3,279 births in Year 2010 to the 2nd quarter of 2011. The 2008 National Demographic Health Survey (NDHS) results show that 8% of infants under two months old are not breastfed. Furthermore, only 34% of infants under 6 months old are being exclusively breastfed, most are mixed-fed with other milk or plain water or given complementary feeding. By age 6-9 months, only 63% of infants are being breastfed with 58% receiving complementary food [12].

Lastly, nurses, midwives and Barangay Health Workers (BHWs) conduct post natal home visits to those who gave birth at the birthing stations of the RHUs. This is to know whether the mothers have followed doctors' orders to prevent postnatal infections or any complication resulting from failure to follow prescribed health care procedures and to know whether the newborn babies are being managed well by the mothers.

As to the health services for the children, immunization is the top priority of the health centers. There were 1,721 infants given BCG; 1,708 injected with DPT 1; 1,677 injected with DPT 2; 1,844 injected with DPT 3; 1,708 received OPV 1; 1,677 received OPV 2; and 1,644 received OPV 3. For the Hepa B1 within 24 hours after birth, 225 babies were injected; Hepa B1 more than 24 hours after birth, 1,471 babies had it; 1,510 were injected with Hepatitis B2; and 1,495 with Hepatitis B3. For the measles vaccine, 1,844 had it; 1,796 0-11 months and 315 12-23 months children were fully immunized and 1,573 children were protected at birth (12-23 months) [13]. The benefits of immunization are numerous. Firstly, it has reduced mortality rate among children. Secondly, children are now looking healthy, not only they are having long life span but they are also looking pale and hearty. They do not have disturbed growth. Gone are the days when children are seen using crutches to walk because of not being immunized against poliomyelitis. Thirdly, on the part of parents especially mothers, they now have the sign of relief due to surviving rate of their children. They do not pass through agonizing experiences of taking their wards to herbalists and spiritualists who will ask them to pay huge sums of money before treating the child [14].

Another child health service is blood pressure monitoring. However, from the data collected, the clients claimed this was not all the time done. Perhaps the health workers do not regard this as priority health service to the children since increased blood pressure is now seen among young children, these cases are not pronounced in the Philippines unlike in other areas of the world where cases of obesity have been recorded to increase even among children.

Ferrous sulfate and Vitamin A are given free in the health centers. This is to ensure good eyesight (vitamin A) and healthy blood (ferrous sulfate) for the kids to prepare them for

school. The mothers, however, expressed that vitamin A is not all the time available in the health centers. There were 6,811 children aged 12-59 months who received Vitamin A but only 229 from ages 60-71 months had it; 434 sick children aged 6-11 months and 699 aged 12-59 months were given Vitamin A. These were the children who received iron: 43 anemic children were aged 2-59 months; and 37 infants aged 2-6 months with low birth weights [13]. According to mothers, iron is "not all the time" given to them when they ask for it.

Deworming is also done in the health centers because parasitism is prevalent among Filipino children. The UNICEF [15] reported that 8 out of 10 Filipino children have *Ascaris lumbricoides* in their intestines. This was confirmed by the students of one of the researchers when they conducted a medical mission to San Jose de Urquico Elementary School in 2005. In the fecalysis, they had identified *Ascaris* in almost all the school children who were able to submit fecal samples. Some children even have two to three types of parasites in their stools. These were *Enterobius vermicularis* and *Trichuris trichuria*. In Yalung's report fecal samples of 156 children were subjected to laboratory analysis.

"Operation timbang" is another program of the health centers. During the data collection, the researchers observed that before the babies are checked or given vaccines, they are first weighed. This is to monitor incidence of children who are malnourished.

Medical and dental checks are also carried out in the health centers. There were 114 children aged 12-71 who were provided with BOHC. Also, the number of sick children in the health centers is as follows: 655 children aged 6-11 months, 1,068 children aged 12-59 months, and 472 children aged 60-71 months [13].

Supplemental feeding among the undernourished is another program of the health centers. There was no information on supplemental feeding in the accomplishment report [13]. The health workers also indicated in the data collected that supplies and budget for supplemental feeding is not all the time adequate. According to WHO [16] undernutrition, micronutrient deficiencies and illness in childhood have been found to impair cognitive development, school attendance and learning capabilities. WHO also reported that in Cebu, children who were stunted at the age of two years were observed to have significantly lower test scores than their peers. Moreover, in the 6th National Nutrition Survey 2008 initial results showed that among children under age five, 27.6% are underweight and 1.4% are overweight [12].

B. System of Implementation of Maternal and Child Health Services

As seen in Fig. 1, the Department of Health (DOH) determines the basic MCH programs and services to implement to target clients. The DOH issues directives or implementing guidelines; releases budget and supplies to the City Health Development-III (CHD-III), Region-III Office. The CHD-III in turn releases the directives or implementing guidelines and supplies except for the budget to provincial health offices. According to the nurses interviewed, monetary budget is not released to the provincial and city health offices. Only vaccines, purgatives, vitamins, equipment, materials and other medical supplies are given to them. Whatever budget or

supply is lacking, the local City government provides it.

Once directives, implementing guidelines and supplies are distributed to the PHOs and CHO, these are allocated to the different RHUs. The medical doctors assigned in the RHUs give directions to their nurses. Target clients can avail of the services and supplies at the RHUs but those who are far from the main RHUs can go to the BHSs near their residences. Nurses and midwives are assigned to the BHSs.

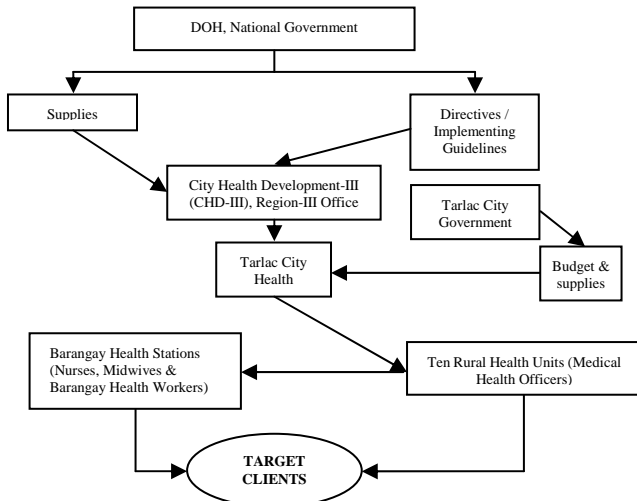


Fig. 1. Flow of MCH programs and services

Since the services of RHUs and BHSs are not only for mothers and children, schedules are posted in the RHUs and BHSs to have an orderly delivery of health services. Usually, in the BHSs Tuesday or Wednesday are the days allotted for mother and children but the clients can go anytime in emergency cases. In the RHUs, any type of client can seek health assistance from Monday to Friday.

In the system, the role of the BHWs is very vital. They serve as links between the health centers and the target clients. Republic Act 7883 provides that the government and all its instrumentalities shall recognize the rights of BHWs to organize themselves, to strengthen and systematize their services to their community; and to make a venue for sharing their experiences and for recommending policies and guidelines for the promotion, maintenance and advancement of their activities and services [17]. Also, according to the pharmaceutical company United Laboratories, BHWs play an important role in improving the country's healthcare system (Santos, 2011). Moreover, in the 2010 National Confederation of BHWs in Cebu City, Senator Loren Legarda thanked the BHWs because of their importance in the entire chain of health care delivery [18].

C. RHU Workers' Assessment of the System of Implementing the MCH Services

The Health workers assessed the implementation of the health services in terms of the adequacy of budget and supplies, adequacy of the workers and their competence in delivering the health services.

As to budget and supplies, the RHU personnel claimed that these are adequate all the time to support the MCH services except for giving of vitamins and conducting home visits of the health workers. This was confirmed by the response of the clients that one of the obstacles or problems they have

encountered in the health centers was lack of vitamins. The BHWs also claimed they do not have fare to go from house-to-house to visit the mothers and children. In the flow of health services discussed previously, budget and supplies mainly come from the city government and only an augmentation from the Regional Health Development III. This means that if the city government target earnings will not be able to meet the budget appropriated for health services, they may not be able to deliver the expected MCH programs and services.

In one of the interviews, a mother asked the researchers whom to seek help with her problem regarding a neighbor who maintains a piggery near their house. She shared that for a long time her children are suffering from frequent respiratory diseases and gastroenteritis because they are left with no option but to live with the devastating smell of the piggery. In fact, she said one of her children developed asthma and heart failure. This is one of the cases where regular monitoring of health workers must be conducted so they could look into the environment of the mothers and children. They have to educate the community to maintain sanitation to prevent occurrence of health abnormalities. However, the BHWs cannot be obliged to do this with the meager allowance they are receiving from the city government. The nurses and midwives cannot also attend to this, considering their limited number. There are only 35 permanent midwives directly coordinating with the 535 BHWs to help them in health services delivery.

As to the adequacy of the number of RHU personnel in delivering the MCH services, this got weighted means equivalent to "all the time," except for home visits. In fact, the BHWs expressed they do not have adequate allowance to make home visits to the clients for follow-up checks. Home visits of BHWs are very important in informing mothers about the need to visit the health center regularly especially if they are pregnant. Regular checks are necessary since potential problems may occur in the course of pregnancy. Common health problems during the prenatal period are related to the mothers' lifestyle choices, physical and emotional health, nutritional status, and prenatal care. Education on these issues is available at the health centers. Furthermore, pregnant mothers have to be reminded by the BHWs to have physical examinations and screenings during the entire pregnancy and they have to be made aware that early prenatal care is essential for a safe pregnancy.

The RHU personnel said they are all the time competent to give all the services for the mothers. The medical doctors claimed that all health workers undergo training before they are assigned jobs to ensure that they do not commit error as they deliver the health services.

As to delivery of the child health services, adequacy of budget and supplies for immunization, blood pressure monitoring, deworming, "operation timbang" and medical consultation had weighted means of 2.73, 2.95, 2.57, 2.89 and 2.50, respectively which are all equivalent to "all the time." However, some doctors claimed that although generally, supplies for immunization are adequate, this is mostly true for BCG (against tuberculosis), DPT (against diphtheria, pertussis, tetanus) and OPV (against polio). Sometimes, vaccines for hepatitis and measles vaccines are inadequate

For Vitamin A supplementation, ferrous sulfate, dental

check-up and supplemental feeding among undernourished, these got 2.15, 2.29, 2.44 and 2.30 weighted means equivalent to moderately adequate. This means that there are times when budget and supplies to support these services are inadequate. Again, this supported the claims of the clients of the inadequacies of these services in the health centers.

As to the adequacy of the number of personnel, most services are well attended by the personnel but not in vitamin A supplementation ($\bar{x}=2.38$); dental check-up ($\bar{x}=2.42$) and supplemental feeding for the undernourished ($\bar{x}=2.37$). In the past years, BHWs went from house to house to give vitamins but recently, this practice seemed not done anymore. For the supplemental feeding, some doctors said that some non-government organizations help carry this out. Educational institutions can also help in this area. Extension services in HEIs may include supplemental feeding as one of their programs. The number of public dentists is also inadequate. According to the city health office, there are only about ten public dentists in the health centers.

D. Clients' Sources of Information of the MCH Services

The clients were asked how they are able to know the MCH services available at the health centers. Delays in seeking health care have been estimated to contribute up to 70% of child deaths [19]. However, health information may not reach poor and marginalized populations for a variety of reasons, including physical distance to health centers and limited outreach in many areas. Moreover, they claimed that children residing in urban areas and in better-off households are often more successful in accessing care than children living in rural areas or in poor households. The resulting inequalities in access to child health services may perpetuate inequalities in child survival.

In Tarlac City, majority of the respondents (N=348, 71.46%) get the information from the BHWs. This indicates that the BHWs are doing their responsibility of informing the community where they are assigned about the services of the health centers. In the National Confederation of Barangay Health Workers of the Philippines, 2010, Senator Loren Legarda thanked the BHWs and said "for sixteen years, the barangay health workers have been the health information disseminators, the nurturers of expectant mothers and sick children, and the providers of genuine health care to the Filipino in the deepest nooks of the country." However, in the problems encountered by the health workers while delivering health services, some BHWs expressed the lack of transportation allowance to visit all the eligible mothers in the communities where they are assigned. Senator Legarda continues her speech "with the resurgence of different disease outbreaks that most often emerge in the remotest areas in the country or with every calamity that strikes us, our BHWs serve as the caretakers of the lowly Filipinos. They have one of the toughest jobs and are one of the most dedicated sectors in government. However, it is distressing that their efforts come unrecognized and neglected." She further said, "Our health workers are undermined with regard to their meager honorarium and tough working conditions. Even with their relentless efforts in providing health care to our barangay folks who could not afford hospital fees, they are underpaid and not even provided with a health insurance program." [18] This

confirms the claim of the BHWs.

To help the BHWs in their predicament, schools can be vital channels of information-dissemination. They could post announcements or tell students to remind their mothers to visit the health centers to avail of the services.

Other mothers (N=83, 17.04%) are informed through the barangay leaders. This shows the cooperation of the health personnel and the barangay leaders in promoting health in the community. Community leaders should work hand-in-hand with the health workers in order to ensure good health among the residents.

Seventy-eight mothers (16.02%) on the other hand, are informed through the neighbors who have already availed of the services.

Few (7, 1.44%) are informed through televisions or radios. The DOH makes sure they prepare advertisements or announcements through television ads or programs about important services they could avail from the health centers especially when there are epidemics. One example of this is the house-to-house measles vaccination to children eight years old and below which was massively announced in the media. Owning a radio and/or television had a greater effect on the use of contraception, immunization, and prenatal care in urban areas than it did in rural areas. Since other economic indicators had a less significant effect on the use, possession of a radio and/or television may actually represent access to information rather than wealth [20].

Maternal and child health care involves multiple active participants – the government, other support agencies, the health providers and the community residents. All sectors must cooperate to achieve good health in the community [6].

E. Clients' Assessment of the Implementation of Health Services or Programs

The clients were asked if they are fully informed of the MCH programs and services at the BHSs and RHUs. In four RHUs the means are 2.45, 2.27, 2.30 and 2.47, respectively. These values have verbal descriptions equivalent to "moderately adequate." In the questionnaire for the RHU personnel regarding the problems they have met in delivering the health services and programs, some BHWs expressed they do not have enough fare to go from house-to-house.

The other 6 RHUs indicated an "adequate" response with means of 2.75, 2.70, 2.50, 2.65, 2.57 and 2.9, respectively. This is a good indication that the BHWs in these communities have fulfilled their role in the community.

As to the adequacy of MCH services and programs to ensure good health for the mothers and children, three RHUs indicated a "moderately adequate" response with means 2.35, 2.09 and 2.40, respectively. This indicates that the mothers being served in these RHUs and BHWs feel they still need more services from the health centers to ensure good health. In the portion where the mothers were asked about their obstacles or problems in availing of the health services, the highest response was lack of medicines and health facilities. This could be the wishes of the mothers who were not convinced of the adequacy of the MCH services and programs. Some mothers even expressed their dismay over other centers who only inform mothers close to them or to their relatives. In 7 RHUs their clients claimed the MCH services and programs are

adequate.

The clients were also asked if the number of health workers is adequate to serve their needs and their children. Clients in 5 RHUs indicated an “adequate” response with means of 2.53, 2.55, 2.59, 2.57 and 2.80, respectively. The clients in the other 5 RHUs, the WMs generated were 2.30, 2.27, 2.45, 2.42 and 2.44 respectively, which are all equivalent to “moderately adequate.”

As to the availability of the RHU personnel every time the clients seek the services of the health centers, only 3 RHUs had a mean equivalent to “adequate” (means of 2.60, 2.5, 2.71 and 2.80, respectively). There were more RHUs which generated a “moderately adequate” rating (means of 2.15, 2.41, 2.35, 1.95, 2.29 and 2.41, respectively). In the item asking for problems encountered by the clients in availing the MCH services and program, others expressed that some RHUs and BHSs close early and they suggested that doctors should stay in the health centers from 8:00 A.M. to 5:00 P.M.

The mothers were asked if they have availed of the specific MCH services in the RHUs or BHSs during their visits. Results show that only in education on healthy and safe pregnancy; proper nutrition and breastfeeding got weighted means equivalent to “adequate” (2.51, 2.50 and 2.52 respectively). They only availed some doses of immunization against tetanus which is supposedly vital in preventing future neonatal deaths against tetanus; have not availed of regular blood pressure and weight monitoring; some have not received vitamin A; have not regularly attended education on family planning and have not regularly been visited by health workers.

In the interviews conducted while the mothers were filling out the questionnaires, the researchers asked them why they have not fully availed of the health services. Some said RHU personnel are mean and unapproachable that is why they do not go back for follow-up prenatal checks. Others expressed that nurses or doctors are not available or they close early. Some said they do not have fare to frequently visit the center.

On the part of the health workers, they claimed that mothers do not follow their prescriptions. They only come during emergencies or the time they are about to give birth. The generally lower levels of health-related knowledge and awareness among poor and marginalized groups may result in low demand for health care services. Also, women’s typically lower levels of literacy may likewise place many forms of health information, such as print media, beyond their reach, while restrictions on their mobility may limit their exposure to new health-related ideas and practices [19].

This is a rich avenue where schools may take its role in literacy. In their extension programs, they could gather mothers who are left in the houses and put up literacy classes. Topics on health education can be integrated.

For the home visits, again, mothers claimed this was not all the time done.

For child health services, only immunization was done all the time they seek for it ($\bar{x}=2.60$). All mothers in various RHUs except one gave a rating of “adequate.” This is consistent with [13] showing that nearly 2000 children were given several vaccines: BCG, DPT, OPV, Hepatitis and Measles and almost 2000 children aged 0-11 months were fully immunized. This is a good promise that the future young people will be free from tuberculosis, diphtheria, pertussis and

tetanus, polio, hepatitis and measles.

In giving of vitamin A and ferrous sulfate, mothers’ response generated “moderately adequate.” This is consistent with the interview from few mothers that vitamins and iron are not always available in the center. Supplemental feeding was not all the time done also ($\bar{x}=1.84$). Based on the 1998 National Nutrition Survey conducted by the Food and Nutrition Research Institute-Department of Science and Technology (NNS-FNRI-DOST), 32% of children five years of age and below were underweight, 67.6% were normal and 0.4% were overweight. The same survey also showed that 34% were stunted and 6% were wasted. In 2001, FNRI updated the nutritional status of Filipino children at the regional level and showed that, among those five years old and below, 30.6% were underweight, 31.4% were stunted, 6.3% were wasted and 1% were overweight [21]. In Tarlac City, there is no report of the number of infants with low birth weights; only 63 infants with low birth weights aged 2-6 months were seen in the health centers and 37 were given iron [13].

Medical and dental consultation were not all the time available also ($\bar{x}=1.90$ and $\bar{x}=2.15$, respectively). Republic Act 1082 strengthened health and dental services in the rural areas. The salient provisions of this RA along creating a position of public dentists states that there shall be in each province a Provincial Health Officer, and in each congressional district, a Public Health Dentist: provided, however, that a congressional district having a population of over one hundred fifty thousand shall have an additional Public Health Dentist.

According to [22], there was a big increase in the allotment for Implementation of Doctor to the Barrios and Rural Health Practice Program from P123.284 M to P1.8742 B, or P1.7 B increase, which President Aquino said will be used to deploy “some 200 doctors, 1,021 midwives and 12,000 nurses to regional health units, barangay health stations (BHSs) and hospitals nationwide.” This only represents 1% of the estimated shortage of health workers nationwide. While this will mean additional health workers, this will perpetuate flexible labor arrangements like contractual, job-order, and casual work if no additional regular plantilla positions are provided. This is the experience in the ongoing Registered Nurses for Health Enhancement and Local Service (RN HEALS) program, which employed 10,000 nurses temporarily for 1 year with remuneration lower than that of regular nurses. This will not ensure continuous quality service to rural communities while job security, salaries, and rights of health workers are violated. Still not appropriated in the national health budget are allocations for additional plantilla positions for doctors, nurses, midwives and other health professionals. This means that the shortage of health professionals in the RHUs may not be addressed in the coming days.

Giving of free medicines was not all the time done also ($\bar{x}=2.04$). This is understandable since the budget of the local government units may not be enough to give medicines for free to all eligible clients.

F. Problems Encountered by the Health Workers and Clients in Implementing the MCH Services and Programs

The RHU personnel indicated problems they have encountered in delivering the health services to the clients.

They said that budget and supplies are not adequate to deliver the MCH programs and services deemed important to ensure good health to the clients. This had the highest percentage (N=156, 87.64%). This is consistent with the claim of the mothers that the health centers lack free medicines, vitamins and supplies.

Another problem expressed by 149 (83.71%) was the number of personnel in their area is not enough to serve the clients. One of the doctors even indicated that items are scarce for midwives who are important to attend to the concerns of the pregnant mothers.

One-hundred thirty-two or 74.16% claimed that clients only come when their children are very sick and they do not exactly follow health instructions (123, 69.10%). Illnesses are better managed when these are immediately subjected to medical checks and if clients follow prescribed treatment regimens [10].

In addition, 119 or 66.85% stated that some pregnant mothers only approach the health centers when they are about to give birth. This is especially true for mothers who already have experienced being pregnant. Mothers have to regularly subject themselves to prenatal checks in order to avoid complications or abnormalities which may compromise the health of both the mother and the baby [11].

According to 112 or 62.92% health workers, clients are not interested to attend health education seminars or activities. They observed that if there are no free medical supplies such as vitamins or medicines, clients do not attend health teachings.

Lack of transportation allowance to go house to house was a problem of 102 or 57.30%. This was observed to be a problem mostly expressed by the BHWs. This is understandable since the BHWs receive very minimal allowance from the city or the provincial government.

According to 98 or 55.01% health workers, they experience that transport service is difficult to find when patients need to be transferred from the health center to a hospital during emergency cases. The barangay officials may help in this problem since some barangays are provided with vehicles.

Moreover, 44 or 24.72% claimed that some centers are flooded during rainy season and 23 or 12.92% indicated that the center is not wide enough to accommodate the clients.

Lastly, 34 or 19.10% said that many clients are financially incapable to undergo medical diagnostic and treatment procedures necessary to manage their health.

Among the problems or obstacles the mothers encountered in availing of the MCH programs and services, lack of free medicines, vitamins and supplies got the highest percentage (N=244, 50.10%). The prevalence of children with low to deficient vitamin A levels in the Philippines is 38.0%, indicating that vitamin A deficiency remains a public health problem. Based on the deficient level alone, vitamin A deficiency prevalence is 8.2%. The prevalence of anemia for all age groups is 30.6%. Infants aged six months to one year have the highest Iron Deficiency Anemia (IDA) prevalence rate at 56.6% [16].

The Coalition for Health Budget Increase (CHBI) believes that a health budget that addresses the most urgent health needs of the people must be provided for now. A more realistic health budget should be allocated for the spiraling incidences of dengue and other infectious diseases, and deteriorating state

of hospitals. CHBI is again calling for Php (Philippine pesos) 90 billion health budget for 2012. This budget recognizes the importance of health amidst the growing needs of the people. It is a budget that works for immediate remedies to the most pressing health problems, while paving the way for more long-term solutions. Of the proposed Php 90 billion health budget, Php 40 billion is allotted for improving the public healthcare delivery system, particularly the state of public hospitals. These funds can be used to improve and upgrade their equipment, and ensure sufficient medical supplies and medicines in their pharmacies [22]. Medicine supplies in RHUs and BHSs are not even mentioned in the budget. This means that this problem of lack of free medicines will linger.

Long lines in health centers were experienced by 192 (39.43%) mothers. However, this should call for patience among the mothers. The government cannot give all their comforts. What mothers should do is to proceed to the center early to register. The health centers could devise a system such that pregnant mothers will not wait too long. Perhaps they could schedule patients so that they only come when their turn is near.

One-hundred sixty-three mothers (33.47%) indicated that they do not have time to go to the health centers. This may result to the lack of knowledge of the mothers of the potential dangers of not seeking professional health services during their pregnancy and the detrimental effects to their children. Again, this confirms the report of the WHO [16] that the lack of education of mothers can hamper access to basic health services. The BHWs and midwives should do massive health education to the mothers of the advantages of seeking health assistance.

Being not aware of the available services in the health centers was expressed by 162 mothers or 33.26%. Again, this calls for the need to strengthen information-dissemination. Schools can help the DOH in this area of health promotion.

Absence of doctors, nurses and midwives was the problem of 136 (27.93%) mothers. This should be addressed by the local political leaders. They have to plan monitoring schemes to ensure that the health personnel are in their designated areas of assignment.

One-hundred twenty-nine (26.49%) mothers claimed the health centers lack faculties and equipment. In fact 32 or 6.58% mentioned that centers lack chairs. They further so suggested that more laboratory services should be provided in the health centers since they cannot afford to pay laboratory requests in private establishments.

Far distance of health centers is a problem of 121 (24.85%) mothers and 83 (17.04%) claimed they do not have fare to go to the health centers. While it is true that health must be accessible even to the remotest parts of the rural communities, mothers must also do some sacrifices, except of course in emergency situations. In Ifugao, the annual health report of JICA- DOH [23] relayed a case of a mother suffering from prolonged labor. She was encouraged to travel to the Aguinaldo People's Hospital since the barangay health unit could not help her anymore. Since there was no available emergency vehicle in the village, she and her husband waited patiently for the arrival of the only public bus that will take them to the hospital over two hours away. As her labor progressed, her pain worsened, prompting the family members

to immediately act and bring the mother themselves to the hospital. As no vehicle could get to the mother's house atop the mountain, her friends and relatives decided to carry her on a hammock to the nearest hospital, the same way their ancestors did before them. Fortunately, the worried family met a JICA-MCH vehicle on the way and she was brought safely to the hospital.

This incidence just shows that distance should not be a hindrance to access health services. Community members, headed by the political leaders must work together to avail of professional health assistance. This means that barangay political leaders must also plan how they can help bring health services closer to their constituents.

Sixty-seven mothers or 13.76% expressed that the early closing of RHUs prevented them from availing of the health services and 43 (8.83%) indicated that some RHU doctors and other personnel are mean and unapproachable. This discouraged them to go back to the centers for follow-up management. Positive attitude of health personnel affects the reaction of clients towards health care services. Caring attitude of health professionals is therapeutic to the sick patients [10].

During the data collection, the researchers observed that they were met warmly by the RHU personnel in some centers but not in the other health units. The Tarlac City health head nurse for instance welcomed the conduct of this research and even shared her experiences in the delivery of health to the mothers and children in some schools. She provided relevant documents and was so kind to answer some questions during the interview. However, in some health units, there were those not interested in the study. They even returned some questionnaires unanswered.

G. Proposed Action Plan

The proposed action plan, which includes four programs, is outlined below:

- 1) Strengthening of school clinic programs
 - Health clinics must revisit their programs and assess if they are aligned with the DOH programs along MCH. They could develop short, medium and long term programs which will include health promotion for mothers and children.
 - School clinic personnel must not just serve the students and employees but must also be active in joining extension programs in the school's adopted communities.
- 2) Enrichment of curricular and extra-curricular programs of the schools by integrating health promotion activities
 - School programs such as nutrition month celebration should be enriched. Schools can sponsor medical mission by tying up with government and private health professional volunteers.
 - They could also conduct activities such as demonstration of preparing nutritious foods to booster good health to the pregnant mothers and children through the PTA.
 - Subjects with health topics must emphasize health for the mother and child. Teachers may invite the school physicians or nurses in their classes to provide more information about maintaining good

health among the students. Topics on health must not just revolve around the mother and child but also emerging health diseases and epidemics in the community such as dengue, TB, pneumonia and others so that students are well-informed on what preventive measures to do. This would require teachers to undergo seminars and trainings if their knowledge is inadequate.

- Campus-wide seminars may also be organized in case of disease epidemics.
 - Extension programs may include health promotion among mothers and children. The personnel in schools' clinics can be tapped to head these activities.
 - The association of the parents and teachers may also consider participating in the schools' health promotion programs. Through the PTAs mothers can be organized and health activities can be conducted among them. They could be given seminars and workshops. Supplemental feeding among undernourished preschool and grade school pupils may also be undertaken by the PTA.
- 3) Partnership of schools and local health units
 - Schools can initiate a talk with the local health units. They could allocate supplies in the schools to deliver to the children since they spend most of their time in the school. In this way, health workers no longer go house to house to deliver services especially if their number is insufficient to reach all the target clients. Schools can also seek volunteer supports from private sponsors. School clinics may be used to inject vaccines to the students. Schools may raise funds to purchase vaccines or the RHUs can allocate supplies to them.
 - 4) Integration of community announcements in the school information system
 - These could be accomplished by posting health information in conspicuous areas in the schools.
 - Information system such as announcements during flag ceremonies, release of school papers or gazettes and PTA meetings must include topics on health services and programs in the school and in the community.

VI. CONCLUSIONS AND IMPLICATIONS

Basic maternal and child health services are available in Tarlac City to ensure that these two important members of the family are protected. Most services are adequate except for number of health personnel, immunization with tetanus, blood pressure and weight monitoring, giving of vitamins, education on family planning, and home visits. Mothers claimed their children have received adequate vaccines but not in Blood Pressure monitoring, Vitamin A Supplementation, Ferrous Sulfate, Deworming, Operation "Timbang," Dental check-up, Supplemental Feeding among undernourished, and Medical consultation.

Among the top three problems encountered by mothers

were: lack of free medicines, vitamins and supplies; and long lines in health center. For RHU personnel, budget and supplies for vitamin A supplementation, supplemental feeding, ferrous sulfate, dental services, and home visits.

Educational institutions are vital channels of health promotion activities. They can be partners of the health agencies in providing health services to the mother and child. Second to the home, schools are where children spend most of their time. This makes the school potential for health promotion activities. Parents too, are stakeholders in schools. They can also learn about health information which will directly or indirectly affect the health of their families.

Health promotion activities involve direct delivery of health services to the target clients such as immunization and giving of food supplements such as vitamins. These are important in the prevention of diseases. These activities can be done in schools where children are found every day. It was found in the study that some mothers cannot go to the health centers to avail of free health services due to various reasons such as budget constraints. In this case, vaccines may be brought to the schools and health personnel can inject children there.

Another health promotion activity is health education. Again, the school is a sector where rich information-dissemination can be carried out. Hand washing can be taught in schools. This activity may be simple but this can do a lot in preventing diseases due to improper hygiene techniques.

Higher education institutions (HEIs) are also mandated to conduct extension services. Literacy programs, supplemental feeding, nutrition classes to mothers are just few of the various activities that can be included in the extension programs of the colleges and universities.

VII. RECOMMENDATIONS

An organization of mothers should be created in all communities. This will serve as an avenue for health information-dissemination and education. This could be initiated by health workers or the schools in their adopted communities. Health workers have to strategize their schedules so that health centers open at 8:00 A.M. and close at 5:00 P.M. They could do shifts with the BHWs so that they can attend to other commitments outside the health centers. Schools should enhance their health services to the pupils. They could monitor weight and height of pupils to identify malnourished ones. From these data, they could put up supplemental feedings. They could work together with the Parents and Teachers Association (PTA). They may also do inventories of school children with or without immunizations. They could look for agencies to provide vaccines. HEIs could enhance their extension services to include literacy programs, health education and entrepreneurship activities so that mothers will be more involved in managing the health of the family. School health programs may be aligned with the MCH programs and services of the health centers so that they become partners in promoting health to the people. City health officers must prioritize allocating more budget and supplies to support MCH programs and services. International organizations can be tapped to pledge support

including local non-government organizations. Increasing hiring of professional health workers or allowance for BHWs for their transportation expenses in visiting homes must also be considered.

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