THE IMPACT OF THE LOCAL GOVERNMENT PABASA SA NUTRISYON PROGRAM TO THE HOUSEHOLDS WITH UNDERWEIGHT CHILDREN

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Introduction

Adequate food and nutrition are human rights that should be enjoyed by everyone. But malnutrition, especially among children poses a major threat to their growth and development. There are millions of children aging zero to seven years old who are malnourished. The latter is the main cause of more than half of all child deaths worldwide (UNICEF, 2008).

Malnutrition is a major health problem, especially in developing countries. Inadequate water supply, poor sanitation and hygiene have given their direct impact on infectious disease. Both malnutrition and inadequate water supply and sanitation are linked to poverty. These are either insufficient, too much food, the wrong types of food, aggravated the body's response to a wide range of infections that result in malabsorption of nutrients or the inability to use nutrients properly to maintain health. Clinically, malnutrition is characterized by inadequate or excess intake of protein, energy, and micronutrients such as vitamins, and the frequent infections and disorders that result (FAO, 2000).

Malnutrition affects all age groups, but it is especially common among the poor and those with inadequate access to health education, clean water, nutritious foods, and good sanitation. More than 70% of children with protein-energy malnutrition live in Asia, 26% live in Africa, and 4% in Latin America and the Caribbean (WHO, 2000). In the Philippines, one out of four children is considered underweight or stunted - telling signs of nutritional problems. But this figure, which translates into four million children under 10 being undernourished, is considered an improvement, according to the country's Food and Nutrition Research Institute (FNRI) in the year 2008. About 4 million (31.8%) of the preschool population were found to be underweight for age, 3 million (19.8%) adolescents and 5 million (13.2%) adults, including older persons were found to be underweight and chronically energy - deficient, respectively. The study conducted by FNRI (2008) reveals that malnourish infants and pre-schoolers are most vulnerable to a permanent physical and mental damage.

The Philippine government has been working extensively to make a difference in the lives of each Filipino child. Different government programs have been proposed, formulated, and materialized for the realization of the needs of the people specially the

less fortunate ones. The most current nutrition program by the Department of Health is the "*PABASA sa Nutrisyon"* that provide individualized and group nutrition and health education and counseling to mother or caregivers. This program mandates all government health agencies such as the Nutrition Program Coordinators (CNPCs), Public Health Nurses (PHNs), Rural Health Midwives (RHMs), Barangay Nutrition Scholars (BNSs) and Barangay Health Workers (BHWs) to actively participate in its endeavor.

The *PABASA sa Nutrisyon* is the centerpiece component of the Barangay Plan of Action for Nutrition (BPAN) that is considered as one of the low-cost and effective interventions for the prevention and promotion of health and nutrition in a barangay.

Ozamiz City is among the cities/municipalities with malnourished children. Hence, the City Nutrition Council embarked on this program in 2003. During this year there were 249 children identified as moderately malnourished and 12 children who are severely malnourished. The program was implemented from its launching, the raining of different local government health agencies, up to the implementation of the program in the 51 barangays in Ozamiz City. Until now the City Nutrition Council is still conducting PABASA sa *Nutrisyon* in the remaining barangays. The last five years of program implementation, 660 mothers graduated or 79.81 percent of the projected participation. The 2012 operational "Timbang" result showed 559 or 3.91 percent are still underweight and 74 or 0.52 percent are severely underweight.

The Ozamiz City Nutrition Program is evaluated annually by the National Nutrition Council on the program implementation of the PABASA sa *Nutrisyon.* In the 2011 and 2012 national evaluation one of the recommendations was to conduct an impact evaluation of the said program. Since Misamis University is an active member of the City Nutrition Committee, it coordinated and implemented the Responsive Action for Integrated Nutrition (RAIN) and Sustainable and Unified Nutrition (SUN) Program of the College of Nursing and Midwifery (CNM), with a joint research project conducted by the Ozamiz City Nutrition Council and the MUCNM to evaluate the impact of the said program.

Objectives

General: The study looked into the impact of the local government *PABASA sa Nutrisyon* program on the households with underweight children.

Specific Objectives:

1. Assessed the effectiveness of the PABASA program to the households with malnourished children as to:

a. Nutritional Status of the Children

b. Household with Presence of Backyard Vegetable Garden, Herbal Garden and Fruit Bearing Trees and Livestock

c. Degree of Compliance of Households as to the PABASA's Clean and Healthy Environment

d. Participants' Nutritional Practices as Prescribed by the PABASA sa Nutrisyon Program

e. Mothers' Adherence to the PABASA's Childcare Practices

f. Mothers' Degree of Involvement in the Barangay Health Activities

2. Assessed the impact of the PABASA sa Nutrisyon on the Program Implementer

Significance of the Study

The present study serves as an important indicator in determining the effectiveness of *PABASA sa Nutrisyon* which encompasses nutritional intakes, health practices, augmenting income and promote availability of food through backyard gardening and livestock raising in Ozamiz City.

The finding of this study encourages parents or community members to be self-reliant to utilize indigenous food found in their locality. This may also contribute to their understanding of appropriate behavioral responses through introduction of healthy life practices. Moreover it inculcates positive values to the parents and other family members taking care of the children.

To the health workers, the findings provide information on the effectiveness of the program implementation and may use the data to further strengthen and improve their program implementation. This would also hopefully enable them to reevaluate and improve their health teaching strategies to counteract the negative outcomes of poor nutritional practices.

The City Nutrition Committee, City Health Office, and related health organizations, will also benefit from the results of this study, to help them reevaluate and improve their program on *PABASA sa Nutrisyon*.

Factors identified through this study will be used by nutrition health programs with emphasis on the *PABASA sa Nutrisyon* and guide the formulation of policies that will improve the quality in child nutrition and child care. Academically, findings of this study will provide information to the success or failure of the program implementation, thus intensifying the program further. The results may also form strategies in improving children's nutritional status in Misamis Occidental particularly in Ozamiz City and subsequently contributing to the reduction of malnourished children.

To Misamis University College of Nursing, the findings will give satisfactory data and information as to formulation of programs or community extension programs to help reduce the number of malnourished children to their adapted barangays within Ozamiz City.

Scope and Limitations of the Study

The study looked into the impact of the local government *PABASA sa Nutrisyon* Program on the households with underweight children in selected barangays of Ozamiz City. It was conducted in the coastal, lowland, and upland barangays, involving 390 households. This study is limited to the PABASA sa Nutrisyon objectives. A researcher-made observation checklist and structured interview guide were used to gather data and information. A pre-test was conducted between the periods of October to November 2012 so that improvements are assessed scientifically.

Related Literature

Malnutrition is the condition that develops when the body does not get the right amount of the vitamins, minerals and other nutrients needed to maintain healthy tissues and organ function. Malnutrition occurs in children who are either under-nourished or over-nourished as a consequence of consuming too few essential nutrients or using or excreting them more rapidly than they can be replaced. Nutrition is recognized as a basic human right, vital to the survival, growth and development of children according to the United Nations Children's Education Fund (UNICEF). Despite this pronouncement, however, malnutrition continues to claim millions of lives, with more than 5.5 million children under five years of age dying annually as reported by Devpulse (2008). There were 925 million malnourished people in the world in 2010, an increase of 80 million since 1990, despite the fact that the world already produces enough food to feed everyone (6 billion people) and could feed the double (12 billion people).

The Philippines ranks eighth in countries that have five million or more undernourished people. There were 15.2M undernourished people in 2001–2003, according to the Food and Agriculture Organization (FAO,2003). This represents the number of people consuming less than the minimum amount of food energy (measured in kilocalories per capita per day) necessary for the average person to stay in good health while performing light physical activity.

Malnutrition is the biggest single contributor to child mortality particularly in the 1-3 years of age. Children nutrition levels have been a major concern in nutrition studies because of their vulnerability to ill health. Mazumber et al. (2000) studies have indicated that malnutrition, a public health problem is most prevalent in pre-school children. More than 175 million of children who are under five worldwide are presently believed to be under nourished according to weight-for-age criterion The United Nations (2001) recently estimated that some 150 million children are under-weight, about 20 million low birth weight infants are born each year, and some 40 million children are afflicted with vitamin deficiency.

The Ozamiz City Nutrition Committee Report in 2003 shows that there are 827 households with underweight children of which 753 have Below Normal Low (BNL) weight and 74 are Below Normal Very Low (BNVL) weight. With the City's commitment to improve the quality of life among *Ozamiznon*, the City Nutrition Committee (CNC) of Ozamiz City implemented the *PABASA sa Nutrisyon* Program.

Pabasa sa Nutrisyon is a program that aims to lessen malnutrition by targeting and educating caregivers about proper nutritional practices, at the barangay level. The program has been adopted by the Philippine government through the National Nutrition Council, as one of its behavior change strategies for health. Together with the Nutrition Center of the Philippines, training is provided to health workers on how to conduct the program. *Pabasa* has been implemented in over thirty provinces in the country.

Moreover, the PABASA sa Nutrisyon is an information-sharing type of activity

where mothers are grouped into 10-12 per class, seated in a circular position reading the Nutri-Guide, facilitated by a PABASA leaders (BNS or BHW). The purpose of this program is to educate mothers of underweight children on the proper selection and preparation of family meals that are affordable yet nutritious for the prevention and control of malnutrition. The nutritional guidelines which the program teaches to the beneficiaries are: eat a variety of foods everyday; breastfeed infants exclusively from birth 4-6 months and give appropriate foods while continuing breastfeeding; maintain children's normal growth through proper diet and monitor their growth regularly, consume fish, lean meat, poultry or dried beans; eat more vegetables, fruits and root crops; eat foods cooked in edible/cooking oil daily; consume milk products and other calcium-rich foods such as small fish and dark green leafy vegetables everyday; use iodized salt, but avoid excessive intake of salty foods; eat clean and safe food; for a healthy lifestyle and good nutrition, exercise regularly, avoid smoking and drinking alcoholic beverages.

The program also noted major nutritional deficiencies such as vitamin A. Lack of it may result to dryness of the eye, night blindness among others and other causes such as prolonged low intake of vitamin A in the diet, inadequate intake of fats and oils needed for vitamin absorption and infections such as measles, diarrhea and pneumonia. Another is iron deficiency, wherein hemoglobin concentration is below the normal level which results in short attention span, reduced ability to learn and irritability. The causes are low intake of animal sources of iron in the diet, inadequate intake of vitamin C needed for iron absorption. Other nutritional deficiencies mentioned are iodine deficiency and lack of protein and energy. The program also promotes the importance of eating vegetables, as well as effects and consequences of not eating vegetables such as low intake of essential micronutrients as vitamins and minerals.

Every Filipino dream of delicious, nutritious and affordable foods served on their table each meal. The Nutrition Center of the Philippines (NCP), a non-government organization, aims to make this dream a reality through the Barangay Program of Action for Nutrition (BPAN). In this program, the mayors, barangay captains and barangay-based cooperators work hand-in-hand with NCP to implement feasible nutrition interventions to prevent and control malnutrition in their respective barangays. The action program involves nutrition information education, home food security, Vitamin A, iron and iodine supplementation, food fortification, and growth monitoring under the cooperation and leadership of local officials.

NCP believes that people can fight malnutrition through education, thus the implementation of the Project Bayang Mayaman sa Iron, Iodine at Bitamina A (BIDA). BIDA is the centerpiece of the nutrition information education program that integrates nutrition concepts in the classroom by making nutrition education part of the school curriculum and by holding nutrition special events such as quiz, poster-making, and cooking contests. BIDA promotes nutrition education among pregnant and lactating women, mothers of preschoolers, school children and malnourished children through the *Pabasa sa Nutrisyon* Program. In this program, portions of the Nutri-Guide are read aloud and personal experiences are shared. To elicit participation and strengthen nutrition

messages, Pabasa includes fun learning activities like games, exercises, and demonstrations. After 10 sessions, the participants receive certificates of achievement during the graduation ceremonies.

The main thrust of the Home Food Security component of BPAN is food production. Growing of crops and raising of small animals to meet the family's daily needs are encouraged so that, "not a single Filipino goes to bed hungry." The LGUs and barangay-based cooperators can help organize committees for the project's implementation and advocacy, allocate budget for seeds and seedlings, establish gardens and nurseries, and monitor the project. This can be done in the school and day care centers, in the community, and at the beneficiaries' homes.

Research Method

Research Design

Quantitative type of research was used in Part 1 of the study particularly the descriptive type. Qualitative type of research was employed in Part II of the study which used semi-structured interviews. This study was conducted among BNS to assess their opinions and experiences of *PABASA sa Nutrisyon* program.

Research Setting

This study was conducted in selected barangays of Ozamiz City namely Baybay Triunfo, Catadman , Tinago, Capucao, Cavinte, Embargo, Gala,Guimad,Guingona, Litapan, Sangay Daku and Trigos, Aguada, Banadero, Calabayan, Dimaluna, Kinuman, and Molicay. These barangays are clustered according to geographical location as to coastal, up-land and low-land, through a fish bowl technique and by ratio and proportion together with the confidence interval result.

Research Respondents

There were 390 households selected in this study determined by confidence interval test employed with a margin of error of 5.00 percent resulting in 390 (BNL)/ (BNVL). The data generated the specific number of respondents utilizing ratio and proportion together with the number of clustered barangays.

Further, the researchers utilized simple random sampling in choosing the respondents who are currently residing in their respective barangays. Below is the list of households in their corresponding barangays.

Geographical Location	*Number of Barangays*	*Number of Households*
Coastal	3	75
Lowland	9	162
Upland	6	153
Total	**18**	**390**

Research Instruments

A researcher-made observation checklist and structured interview guide were utilized as the instruments in this study. A weighing scale was likewise used to get the children's weight and a tape measure (body meter) to get the actual height, obtaining the children's Body Mass Index (BMI).

The checklist information contained the following; children's nutritional status as to age, weight, gender and body mass index and presence of backyard as to vegetable garden, presence of herbal garden, presence of fruit bearing trees and presence of livestock. Environmental sanitation was also checked as to surroundings, sources of drinking water, storage of drinking water, toilet facilities, garbage disposal, drainage and the presence of breeding sites of vectors.

There were two structured interview guides that yielded the impact of "PABASA sa Nutrisyon" program. Food preferences; food handling; eating patterns; child care practices; and degree of involvement in health activities within the barangay focused on the beneficiaries, and another focus group discussion was conducted for the implementers.

Data Gathering Procedure

Prior to the conduct of the study, the researchers coordinated with the City Nutrition Office that facilitated permission from the Barangay Captains of the identified barangays. Purok leaders served as guides to the households of the PABASA sa Nutrisyon graduates. Confidentiality was observed from all those who assisted in the data collection procedures, and about the protection and willingness of the respondents. Informed consent was likewise obtained from them. After the data gathering, the questionnaires were collected, analyzed and interpreted.

Statistical Treatment

Frequency, percentage and average weighted mean were used to treat the data gathered.

RESULTS AND DISCUSSION

A. Assessed the Effectiveness of the PABASA program to the Households as to:

Nutritional Status of the Children

Table 1 presents the children's nutritional status based on Child Growth Standard by the National Nutrition Council. Generally, of the 486 children from the coastal, lowland and upland barangays there was less number of children who are severely underweight and also those considered obese. Majority of the children have a normal weight based on their developmental age.

In the coastal area, majority of the children had a good nutritional status. Only 8 or 14.55 percent of the children were underweight. Neither children in the barangays were found to be severely underweight nor obese. On the other hand, children in the lowland, two or 1.27 percent were severely underweight, 16 or 10.13 percent were underweight, and six or 3.79 were obese. In the upland barangays, two are severely underweight, 15 or 5.50 percent were underweight, and two or 0.73 percent were obese.

The finding shows that there is less number of children who have poor nutritional status. This may be attributed to the effectiveness of the PABASA program of the nutrition council of the local government in Ozamiz City.

Table 1

Nutritional Status of the Children
(n=486)

Nutritional Status	**Coastal**		**Lowland**		**Upland**		**Total**	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Severely Underweight	-	-	2	1.27	2	0.73	4	0.82
Underweight	8	14.55	16	10.13	15	5.50	39	8.02
Normal	47	85.45	134	84.81	254	93.04	435	89.51
Obese	-	-	6	3.79	2	0.73	8	1.65
Total	**55**	**100.00**	**158**	**100.00**	**273**	**56.17**	**486**	**100.00**

Households with Backyard Vegetable Garden, Herbal Garden and Fruit - Bearing Trees and Livestock

Generally, majority of the households had the initiative to cultivate their own vegetable garden, herbal garden, fruit - bearing trees and raise livestock. There were 77.1 percent of the households with cultivated vegetable gardens 74.62 percent with herbal gardens 75.90 with fruit- bearing trees, and 70.77 raised livestock.

The finding indicates that participants in the PABASA program are aware of the importance of planting and eating vegetables and fruits and having live stocks as source of their foods and income. The program also enhanced their knowledge on alternative medicines using herbal medication when someone is sick in the family.

Table 2

Households with Backyard Vegetable Gardens, Herbal Garden,
Fruit Bearing Trees and Livestock
(n=390)

Indicators	Coastal				Lowland				Upland				Total			
	with		without		with		without		With		without		with		without	
	frequency	percentage	frequency	percentage	frequency	percentage	Frequency	percentage	frequency	Percentage	frequency	percentage	frequency	percentage	frequency	percentage
Vegetable Garden	56	74.66	19	25.34	123	75.92	39	24.08	122	79.73	31	20.26	301	77.18	89	22.82
Herbal Garden	60	80.00	15	20.00	120	74.00	42	26	111	72.54	42	27.46	291	74.62	99	25.38
Fruit Bearing Trees	35	46.66	40	53.34	115	70.98	47	29.02	146	95.42	7	4.57	296	75.90	94	24.10
Livestock	51	68.00	24	32.00	110	67.90	52	32.09	115	75.16	38	24.84	276	70.77	114	29.23

Clean and Healthy Environment

Table 2.1 depicts the cluster barangays' compliance to PABASA's clean and healthy environment. It was evident that majority (76.15%) of the households in the three cluster barangays maintained a good environmental sanitation. A child living in a household with a clean and healthy environment will likely be healthy. Among the three cluster barangays, households located in the upland barangays had less number with poor environmental sanitation. The coastal and lowland households shared the same percentage of households with poor environmental sanitation.

The findings showed that a greater number of the households live in clean and healthy environments. This shows that the mothers who participated in the PABASA program have applied what they have learned. This means that the implementers of the PABASA program have effectively changed the environmental practices of the mothers.

Table 2.1

Household Compliance to the PABASA's Clean and Healthy Environment as to Environmental Sanitation (n=390)

Level of Environmental Sanitation	**Coastal**		**Lowland**		**Upland**		**Total**	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Healthy Environment	51	68.00	110	67.90	136	88.89	297	76.15
Poor Environment	24	32.00	52	32.10	17	11.11	93	23.85
Total	**75**	**100.00**	**162**	**100.00**	**153**	**100.00**	**390**	**100.00**

Source of Drinking Water

Table 2.2 presents the respondents' compliance to clean and healthy environment as to their source of drinking water. A safe and clean drinking water is important to every member of the household to prevent the occurrence of illness or diseases which may affect their health status.

It is shown that most of the households (35%) from the coastal, lowland and upland areas used purified drinking water. This was closely followed by 35.13 percent using water provided by the Misamis Occidental Water District. However, 0.51 percent of the household population still depended on rain water. Moreover, 28.46 percent of the household population obtained their drinking water from lakes, rivers and surface well, which are not safe to drink as it may contain *E. coli* that is harmful to the human body (Parry, 2002).

Table 2.2

Household Source of Drinking Water
(n=390)

Source of Drinking Water	**Coastal**		**Lowland**		**Upland**		**Total**	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Spring	-	-	28	17.28	30	19.61	58	14.87
Lake/River	-	-	7	4.32	5	3.27	12	3.08
Rain	-	-	1	0.62	1	0.65	2	0.51
Purified	40	53.33	66	40.74	34	22.22	140	35.90
Surface Well	5	6.67	21	12.96	15	9.80	41	10.51
Faucet	30	40.00	39	24.07	68	44.44	137	35.13
Total	**75**	**100.00**	**162**	**100.00**	**153**	**100.00**	**390**	**100.00**

Storage of Drinking Water

Table 2.3 presents the households' compliance to PABASA's clean and healthy environment as to storage of drinking water. Most (45.38%) of the households stored their drinking water in the refrigerator. There were also 39.74% who kept it covered while 14.87 percent stored their drinking water uncovered. The study also revealed that 24.18 percent of the households residing in the upland store their drinking water through uncovered containers.

Table 2.3

Households' Storage of Drinking Water
(n=390)

Storage of Drinking Water	Coastal		Lowland		Upland		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Covered	31	41.33	68	41.98	56	36.60	155	39.74
Uncovered	7	9.33	14	8.64	37	24.18	58	14.87
Refrigerated	37	49.33	80	49.38	60	39.22	177	45.38
Total	**75**	**100.00**	**162**	**100.00**	**153**	**100.00**	**390**	**100.00**

Toilet Facilities

Table 2.4 presents the households' compliance to PABASA's clean and healthy environment as to the toilet facilities. Most of the households in the clustered barangays possessed sanitary toilets like the flush and the pit privy. This revealed that majority of the households disposed their human waste properly placing them at lesser risk of acquiring diseases.

The flush type of toilet facilities was mostly owned by households in the three clustered barangays. However, there were 9.24 percent of the household who still practiced the "Balot" system which is considered unsanitary, as it attracts vectors and flies this become a source of illness (Brunette, 2012).

Table 2.4

Households' Toilet Facilities
(n=390)

Types	Coastal		Lowland		Upland		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	
Pit Privy	26	34.67	61	37.65	67	43.79	154	39.48
Flush	41	54.67	82	50.61	70	45.75	193	49.49
"Balot" Wrap System	7	9.33	17	10.49	12	7.84	36	9.24
Others	1	1.33	2	1.25	4	2.62	7	1.79
Total	**75**	**100.00**	**162**	**100.00**	**153**	**100.00**	**390**	**100.00**

Garbage Disposal

Table 2.5 presents the households' compliance to PABASA's clean and healthy environment as to garbage disposal. It was observed that the clustered barangays have varied ways of waste disposal

The households in the coastal areas disposed of their garbage through collection of the city garbage collector while some practiced open dumping. Barangays in the lowland cluster disposed their garbage through the city garbage collection while others through open dumping, burning and compose pit. On the other hand, households in the upland barangays were varied in their practices. Most (29.41%) of them do open dumping, followed by compost pit, and others practiced burning and burying. It was revealed in the study that most of the households disposed their garbage through open dumping. This concept taught in the PABASA program may not have been internalized by the participants.

Table 2.5

Households' Garbage Disposal
(n=390)

Garbage Disposal	**Coastal**		**Lowland**		**Upland**		**Total**	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Compost pit	5	6.67	27	16.67	38	24.83	70	17.94
Open dumping	20	26.67	37	22.84	45	29.41	102	26.15
Burning	10	13.33	29	17.90	35	22.88	74	18.98
Burying	9	12.00	4	2.47	35	22.88	48	12.31
Garbage Collector	31	41.33	65	40.12	-	-	96	24.62
Total	**75**	**100.00**	**162**	**100.00**	**153**	**100.00**	**390**	**100.00**

Drainage System

Table 2.6 presents the households' compliance to PABASA's clean and healthy environment as to drainage system. Most of the households used the typical open drainage system which is considered an unsanitary practice due to risks of acquiring illness/diseases for the members of the household (Damian, 2011). Among the three clustered barangays, open drainage system was mostly practiced by those in the upland barangays, followed by those in the lowland barangays.

Table 2.6

Households' Drainage System
(n=390)

Drainage System	**Coastal**		**Lowland**		**Upland**		**Total**	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Blind	36	48.00	76	46.91	51	33.33	163	41.79
Open	39	52.00	86	53.09	102	66.67	227	58.21
Total	**75**	**100.00**	**162**	**100.00**	**153**	**100.00**	**390**	**100.00**

Presence of Breeding Sites of Vectors in the Households

Table 2.7 presents the households' compliance to PABASA's clean and healthy environment as to the absence of breeding sites of vectors in the household. The results revealed that 41.01 percent of the households had eradicated breeding sites of vectors. The households located in the coastal barangays got the highest percentage who answered "yes" to the eradication of breeding site of vectors. On the other hand, the households in the lowland and upland barangays got the highest number of households who answered "no" to the eradication of the vectors' breeding site.

Table 2.7

Presence of Breeding Sites in the Households
(n=390)

Breeding Sites	**Coastal**		**Lowland**		**Upland**		**Total**	
	Frequency	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Yes	31	41.33	54	33.33	52	34.00	137	41.01
None	44	58.67	108	66.67	101	66.00	253	58.99
Total	**75**	**100.00**	**162**	**100.00**	**153**	**100.00**	**390**	**100.00**

Food Preference

Table 3 shows the households' food preferences. The result showed that majority of the respondents prefers to eat vegetables. The coastal clustered barangays showed that 100 percent of its households always eat vegetables every meal. This means that the mothers applied what they learned in the PABASA program. On the other hand, a number of mothers in the upland and lowland cluster barangays did not eat or cook vegetables as part of their meals. Fruits were always a part of the meal for those in the coastal clustered barangays. Among the three clustered barangays, the coastal area got a higher percentage that always eats fruits.

Pork and beef were the most preferred food for those households in the lowland and coastal clustered barangays while chicken and seafoods were for those living in the upland cluster barangays. As to the milk consumption of the households in the three cluster barangays, the data revealed that they do not drink milk always.

Table 3

Households' Food Preferences
(n=390)

Food Preferences	Coastal		Lowland		Upland		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Fish								
Always	33	44.00	84	51.85	63	41.18	180	46.15
Sometimes	27	36.00	36	22.22	54	35.29	117	30.00
Never	15	20.00	42	25.92	36	23.53	93	23.85
Pork								
Always	33	44.00	72	44.44	45	29.41	150	38.46
Sometimes	18	24.00	36	22.22	54	35.29	108	27.69
Never	24	32.00	54	33.33	54	35.29	132	33.85
Beef								
Always	24	32.00	72	44.44	45	29.41	141	36.15
Sometimes	21	28.00	48	29.52	27	17.65	96	24.62
Never	30	40.00	42	25.92	81	52.94	153	39.23
Chicken								
Always	42	56.00	78	48.15	99	64.71	219	56.15
Sometimes	18	24.00	42	25.92	18	11.76	78	20.00
Never	15	20.00	42	25.92	36	23.53	93	23.85
Vegetable								
Always	75	100.00	144	88.88	108	70.59	327	83.85
Sometimes	0	-	6	3.70	18	11.76	24	6.15
Never	0	-	12	7.41	27	17.65	39	10.00
Fruits								
Always	54	72.00	84	51.85	75	49.02	213	54.62
Sometimes	21	28.00	60	37.04	66	43.14	147	37.69
Never	0	-	18	11.11	12	7.84	30	7.69
Seafoods								
Always	21	28.00	60	37.04	90	58.82	171	43.85
Sometimes	27	36.00	66	40.74	9	5.88	102	26.15
Never	27	36.00	36	22.22	54	35.29	117	30.00
Milk								
Always	24	32.00	54	33.33	63	41.18	141	36.15
Sometimes	24	32.00	48	29.52	54	35.29	126	32.31
Never	27	36.00	60	37.04	36	23.54	123	31.54

Food Handling Practices

Table 4 presents the food handling practices of mothers in the clustered barangays. It revealed that the mothers possessed very good food handling practices. This is a good indication that the mothers applied what they learned in the PABASA program.

Among the five statements presented in the table, the statement on: Washes hands before preparing foods got the highest average weighted value of 2.91 and interpreted as "very good" hygienic practices. The hands of food handlers are principal agents in the transfer of bacteria to food (Barclay, 2006). Thorough hand washing is essential in food preparation to ensure food hygiene. Likewise, the respondents also practiced very good food handling practices as they always wash their hands after food preparation.

Table 4

Participants' Food Handling Practices
n=390

Statement	Coastal		lowland		upland		Total	
	AWV	**I**	**AWV**	**I**	**AWV**	**I**	**AWV**	**I**
1. Washes hands before preparing foods.	2.86	VG	2.93	VG	2.95	VG	2.91	VG
2. Washes raw fruits before giving it to the child.	2.34	VG	2.67	VG	2.76	VG	2.59	VG
3. Washes the vegetables before cooking.	2.59	VG	2.47	VG	2.91	VG	2.65	VG
4. Washes hands after preparing foods.	2.99	VG	2.38	VG	2.75	VG	2.71	VG
5. Ties or cover hair when preparing food.	2.61	VG	2.60	VG	2.73	VG	2.65	VG
Weighted Mean	**2.67**	**VG**	**2.61**	**VG**	**2.82**	**VG**	**2.71**	**VG**

Eating Patterns

Table 5 presents the eating pattern practices by the households in the clustered barangays. The result showed that almost (93.93%) of the entire households in the clustered barangays eat three times per day, although there were 5 or 1.28 percent of the households claimed that they eat only once a day. Meanwhile 21 or 5.38 percent of the households claimed they eat twice a day.

Table 5
Households' Eating Patterns
(n=390)

Eating Pattern	Coastal		Lowland		Upland		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Thrice/day	69	92.00	153	94.44	142	92.81	364	93.33
Twice/day	5	6.67	7	4.32	9	5.88	21	5.38
Once/day	1	1.33	2	1.23	2	1.31	5	1.28
Total	**75**	**100.00**	**162**	**100.00**	**153**	**100.00**	**390**	**100.00**

Childcare Practices

Table 6 shows the result of the participants' childcare practices. It can be noted that most of the mothers have good childcare practices. Of the 390 mothers in the clustered barangays, 79.23 percent breastfed their children up to six months. However, there were 20.77 percent who have not practiced breastfeeding up to six months. As to the adherence to immunization, the clustered barangays had not attained 100 percent fully immunized children, since 34.62 percent of the children in the three cluster barangays were not fully immunized.

There is low compliance of the households provision of vitamins A and C and iron to the children. Most children in the upland clustered barangay have the lowest compliance. However, more mothers use iodized salt to meet the daily requirements of their children. The upland cluster barangays almost have 100 percent compliance in giving iodized salt to their children.

Table 6

Households' Child Care Practices
(n=390)

Childcare Practices	Coastal				Lowland				Upland				Total			
	Yes		No		Yes		No		Yes		No		Yes		No	
	frequency	percentage	frequency	percentage	frequency	percentage	frequency	percentage	frequency	percentage	frequency	percentage	frequency	percentage	frequency	percentage
1. Breastfeed the children up to six months.	57	76.00	18	24.00	122	75.31	40	24.69	130	84.97	23	15.03	309	79.23	81	20.77
2.All children are fully immunized.	49	65.33	26	34.67	100	61.73	62	38.27	106	69.28	47	130.72	255	65.38	135	34.62
3.The children drink supplementary vitamins such as:																
Vitamin A	40	53.33	35	46.67	74	45.68	88	54.32	28	18.30	125	81.70	142	36.41	248	63.59
Iron	45	60.00	30	40.00	77	47.53	85	52.47	34	22.22	119	77.78	156	40.00	234	60.00
Vitamin C.	23	30.67	52	69.33	86	53.09	76	46.91	37	24.18	116	75.82	146	37.44	244	62.56
4.Uses iodized salt to meet daily iodine requirements	41	54.67	34	45.33	67	41.36	95	58.64	139	90.85	14	9.15	247	63.33	143	36.67

Mothers' Degree of Involvement in the Barangay Health Activities

Table 7 reveals the mothers' degree of involvement in the barangay health activities. As gleaned in the table, the respondents' degree of involvement was very high.

The item "Participate in information dissemination on PABASA" obtained the highest average weighted value of 2.98, interpreted as "very high". This implies that the respondents shared information about the things they learned in PABASA. It is closely followed by the item "Assists BHW/BNS in feeding, weighing of malnourished children" which obtained an average weighted value of 2.69, interpreted as "very high". It is evident that the respondents are supportive of the Barangay Health Center's activities. Lastly, the item "attends mothers' class in the barangay health center" obtained the lowest average value of 2.67, but is still considered to be a very high degree of involvement among the mothers in their barangay health activities. This means that the pregnant mothers are active in attending the prenatal classes held in the health center.

Furthermore, the respondents did not find hindrance to participate in activities on food handling in the barangay health center. In consideration of their geographical location, they have high degree of involvement.
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Table 7

Mothers' Degree of Involvement in Barangay Health Activities
(n=390)

Statement	Coastal		Lowland		Upland		AMV	QI
	AWV	**QI**	**AWV**	**QI**	**AWV**	**QI**		
1. Attends mothers' class in the barangay health center.	2.76	VG	2.76	VG	2.74	VG	2.67	VH
2. Participates in information dissemination of the PABASA and other health related activities in the barangay health center.	3.00	VG	3.00	VG	2.93	VG	2.98	VH
3. Assist BHW or BNS in feeding, weighing, etc. malnourished children.	2.57	VG	2.57	VG	2.83	VG	2.69	VH
Weighted Value	**2.59**	**VG**	**2.59**	**VG**	**2.83**	**VG**	**2.78**	**VH**

B. Impact of the PABASA sa Nutrisyon to the Program Implementors

Generally, the participants were satisfied with their 3-day seminar-workshop, particularly on the learning materials and activities for the implementation of the PABASA sa Nutrisyon program.

When asked how they prepared for the PABASA sa Nutrisyon program prior to the implementation, their common response was that "the nutrition council prepared them well to attend a 3-day seminar-workshop on PABASA before allowing them to implement the program in their assigned "purok" or community. They were provided with kits, brochures and books to study to enhance their knowledge and confidence in sharing what they learned. Moreover, the participants claimed that they have improved their knowledge on nutrition, in breastfeeding, the importance of immunization and child care. The BNS verbalized the confidence gained in the implementation of the programs increased.

As to the usefulness of the activities or the materials of PABASA sa Nutrisyon, the participants claimed that the flip charts, brochures, books, games and return demonstrations (such as actual cooking and actual breastfeeding) during the seminar-workshop were very helpful in imparting knowledge to the participants. Some mothers, who were encouraged, brought along others from their neighborhood to attend the said seminar. The use of the native dialect (Cebuano) facilitated the mothers' understanding of the topics better. The activities such as games included in PABASA were helpful strategies for the mother's learning, making them more interactive.

When asked on their perception about the effect of the PABASA to the barangay or community, the participants say that the program is successful because they observed some positive changes in the mothers' behavior and improvement of their malnourished children's nutritional status.

When asked if there are any recommendations or suggestions to improve the PABASA sa Nutrisyon program, majority of the participants claimed that there is nothing to improve but suggested continuous monitoring of the program as well as continued seminar-workshops for mothers who have not attended. To do this, it was suggested that a house-to-house campaign will be conducted so that all mothers could attend. Moreover, snacks and give aways for the mothers should be provided.

CONCLUSION AND RECOMMENDATIONS

Conclusions

There is a significant improvement of the nutritional status of the malnourished children. Members of the household are actively participating on the "pahina" or cleaning in the barangay for a clean and healthy community. Most of the households possess backyard gardens, communal garden and practice proper waste disposal. Children eat affordable and nutritious foods prepared by their mothers.

Recommendations

Although, it is evident that the PABASA program has great impact on the health behaviours of the beneficiaries of the PABASA sa Nutrisyon program, it is recommended that:

1. The City Nutrition Committee on account of the effectiveness of the PABASA program lobby for increased PABASA Program funds so more mothers can undergo the program.

2. The City Nutrition Committee, in coordination with the Barangay Health Workers (BHW) visit and reinforce the mothers where poorly nourished children are found with more health education through intensive PABASA sa *Nutrisyon* program.

3. The City Nutrition Committee in coordination with the City Solid Waste and Environment Management Office instruct the barangay health officials to comply the provisions of R.A. 9003 to stop the unsanitary practices of disposing human excreta, encourage them conduct "bayanihan" to build sanitary toilets among those households without sanitary toilet.

4. The City Nutrition Action Office with the City Health Office instruct the BHWs to visit households and conduct more health teaching particularly on proper solid waste management emphasizing its effect on the health of household members.

5. The City Nutrition Action Office with the City Engineers Office and the BHWs conduct inspection to the different household in their area of responsibility and encourage members to install / construct an acceptable and healthy drainage system.

6. The City Nutrition Action Office with the City Health Office through the Barangay health nurses/midwife conduct house-to-house check if all children receive their full immunization so that 100-percent compliance can be achieved. They may also teach working mothers to do milk banking so their babies can still be fed with breastmilk.

7. The City Nutrition Action Office through the BNS disseminate more information on the advantages of drinking milk everyday among the children, conduct house-to-house visits to identify children not fully immunized, and monitor the regular intake of vitamin A, C, and iron. Sanctions may also be done for disobedience and non-compliance.

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