DEPARTMENT OF FAMILY AND COMMUNITY MEDICINE

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COMMUNITY ORIENTED PRIMARY CARE PROJECT REPORT

Community Oriented Primary Care (COPC) is s strategy whereby elements of primary health care and of community medicine are systematically developed and brought together in a coordinated practice.[1] It is a systematic approach to healthcare based on principles derived from epidemiology, primary care, preventive medicine, and health promotion that have been shown to have positive health benefits for communities.[2] Community Oriented Primary Care (COPC) is a model of health service development integrating public health and primary care in order to deliver targeted prioritized services to a defined population. In a COPC practice, the physician accepts responsibility for improving the health of the whole community, and community members accept responsibility of becoming involved in improving services and maximizing the health status of the entire community, which raises the status of health promotion strategies and preventive work.[3]

Table 1. The Six Sequential Steps of Community-Oriented Primary Care (COPC) process and Questions to ask for each steps[4]

	Steps in the COPC Process	Questions to ask
1.	Community definition	How is the community defined based upon geography, institutional affiliation, or other common characteristics, e.g., use of an Internet site?
2.	Community characterization	What are the demographic and health characteristics of the community, and what are its health issues?
3.	Prioritization	What are the most critical health issues facing the community, and how should they be prioritized based upon objective data and perceived need?
4.	Detailed assessment of the selected health problem	What are the most effective and efficient interventions for addressing the selected health problem based upon an evidence-based assessment?
5.	Intervention	What strategies will be used to implement the intervention?
6.	Evaluation	How can the success of the intervention be evaluated?

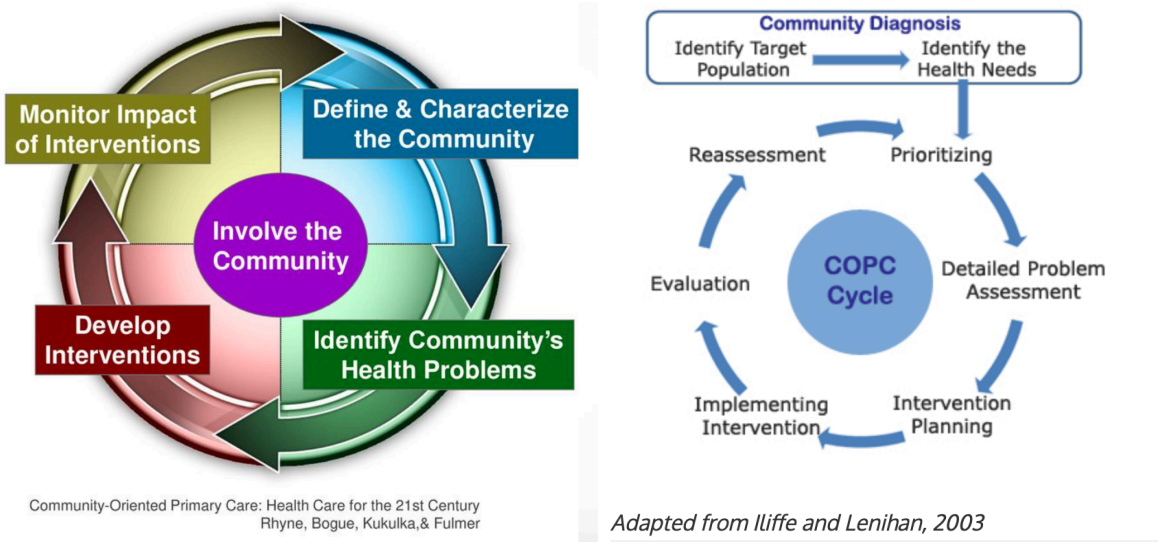


Figure 1. The Community-Oriented Primary Care (COPC) Cycle

COPC is a process by which a defined population's health problems are systematically identified and addressed, combining the principles of primary care, epidemiology, and public health with the community as a partner at every step.[5]

A community, as defined by Leopando, is a group of people who share the same goals or are living in the same place.[6] Similar to a system wherein each part performs a different function, it is comprised of members operating within specific boundaries to meet community needs.

Community Oriented Primary Care projects are done based on the needs of the community. Thus, embarking into any community project entails that these objectives must be met in order to come up with a significant and useful intervention:

1. To define the community as to its location, demographics and leaders for the purpose of establishing care at the community level.
2. To characterize the community in terms of its health needs and existing health programs using a tool, Community Diagnosis Survey Form.
3. To perform a detailed assessment of leading health conditions using a problem tree analysis in order to prioritize programs.
4. To provide an intervention based on perceived health care needs of the members of the community, particularly addressing the population of patients with Diabetes.
5. To evaluate the intervention implemented in the community based on indicators or outcome measures specific for the community project.

INTRODUCTION:

On June 2019, the end of our memorandum of agreement with the community of Melchor and Martina Ona Memorial Health Center in Santa Clara, Santo Tomas, Batangas started the search of the Department of Family and Community Medicine for a new community to adopt. Through the kindness and cooperation of the City Health Office (CHO) headed by Dr. Rosalina Barrion, the department was given an opportunity to choose and adopt barangays within Batangas City area which were identified to have need for attention or improvement in terms of community health. Thus, on June 26, 2019, a meeting was held in the Office of the City Health Officer with the following attendees: Dr. Rosalina Barrion (representing the CHO), Dr. Merlita Publico (Chairperson of DFCM), Dr. Teresita Risalyn Villanueva (PETRO Chief), Dr. Jeanette Besabella and Dr. Elisabeth Engeljakob-Cabrera (community consultants), and Dr. Michael Angelo Biscocho and Dr. Cielo Ante (residents of DFCM). This was followed by an ocular visit which was conducted to see the identified

barangays such as Cuta, Santa Clara and Bolbok. Among these barangays, Cuta and Bolbok were more accessible, thus it was then decided that Cuta and Bolbok will be adopted by the department as their new communities. On July 5, 2019, the Family Medicine community rotators started their new journey in these two barangays.

Figure 2. Signing of Memorandum of Agreement with Dr. Rosanna Barion and Bolbok Barangay Captain Hon. Wilfredo Ocampo

I. COMMUNITY DEFINITION

A. History of Bolbok

According to legend, the people living in Gunao sought water in the neighboring sitios. One day, a tired woman was on her way home from the well, and her jar full of water fell over from her head to the ground. With tears rolling down her cheeks, she picked up the pieces of broken jar one by one. While she held up the biggest piece still filled with water, the image of Our Blessed Virgin Mary appeared before her and told her to pour the water in one of the corners of her garden. In doing so, she will no longer take pain in getting water. The ever faithful and grateful woman did it immediately. She poured the water in her garden and was surprised that stream of water flowed out from where she poured the water from the piece of jar. Many people came to see the miracle. The stream grew bigger and the people gazed with awe and amazement at the miraculous sight. The gush and sudden flow of water can be translated in Tagalog as “Pagbulbok ng tubig”, thus this phrase as continually used eventually became a name for the place “BOLBOK”.

Bolbok since then was divided into different puroks. Each purok was named based on the outstanding characteristics of the people living in it. The different puroks were the Pulong Mayaman, Pulong Makukak, Timbugan, and Gunao. These were established way back 1700 and the early inhabitants were scattered in the sitios or purok. Pulong Makukak, because the people there were very talkative, Timbugan because people are engaged in dyeing thread used in weaving cloth, Gunao for having big stream and Mayaman because the people in sitios were rich and well-to-do family. The original families in Pulong Mayaman were the Acosta, the richest and the Balina family. The Bolbok Calsada or Kanluran was made up of four families namely Baliwag, Rivera, Dimaandal and Calleja. The Bolbok Silangan were the families of Rosales, Blay, Magtibay and Dela Rocca.

Previous records show that the barangay was also headed by different authorities and tenientes del barrio commonly known as barrio captain. Although historical records show no significant events happening in this barrio, neither also historical buildings or sites, they house prominent sites such as the Bureau of Animal Industries and Bureau of Plant Industries as well as the Batangas City Cemetery. There are also well known subdivisions located at Bolbok which includes the Lourdes subdivision and Sto. Niño subdivision.

Even if no significant events took place in this barangay, certain ordinary ones like being a sheltering place for Japanese soldiers and Americans who built their camps in the schools. The main religious sectors in the barangay are Roman Catholic and Iglesia ni Cristo. The place is commended for its cooperation and unity despite diversity and their willingness to lend a hand in the improvement of their barangay. Their fiesta is celebrated annually, mostly during May or June, in honor of their patron saints. Indeed, the barrio is at its finest in terms of sustained progress and success.

B. Demographic Profile and Land Area

Barangay Bolbok is an urban barangay in Batangas City. It has a total land area of 249.4780 hectares. It is bounded by Banaba South in the north, Kumintang Ilaya/ Alangilan in the East, Sta. Clara and Calicanto in the South and Sta. Rita Karsada on the West. Bolbok is divided into Purok 1 to 7, with Purok 7 as the biggest and Purok 1 as the smallest.

The total population of Bolbok is 14,224, consisting of 2,233 households. This has increased from 2017's total population of 13,319. This number continues to rise up as the place is continuing its progress as evidenced by increasing number of establishments within the area.

There are many hospitals located within Brgy, Bolbok, such as St. Camillus de Lellis Hospital and Batangas Healthcare Hospital. Bolbok Elementary School is about 600 meters away from the Barangay Health Center. Many establishments are also located within the barangay such as fastfood chains, restaurants, motor shops, bus terminals, and others. There are few subdivisions in the area such as Villa Penafrancia, Sto Nino Village. Overall, Barangay Bolbok is a busy place comprised of various types of establishments, residential villages, schools and hospitals.

Below is a demographic representation of Barangay Bolbok, in terms of its land area and important landmarks:

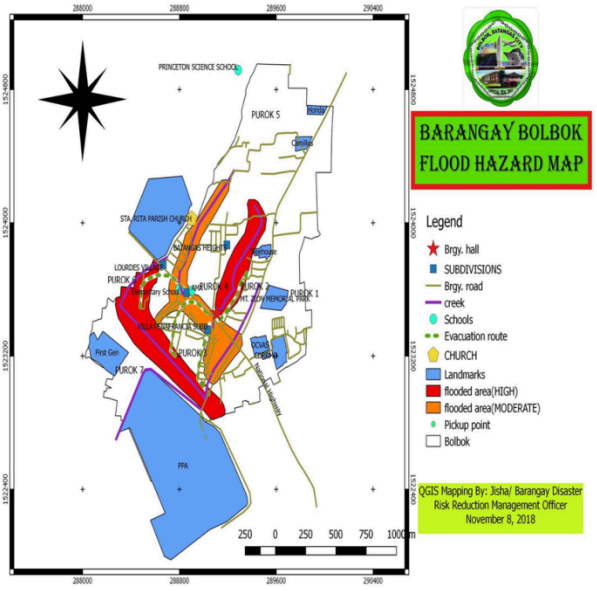


Figure 3. Demographic Profile and Land area of Barangay Bolbok

Identification of Major Stakeholders

C. Barangay Officials

Barangay Bolbok is headed by Hon. Wilfredo G. Ocampo and 6 barangay councilors who are assigned to different puroks and committees.

As the head of the barangay, Hon. Wilfredo Ocampo oversees all the activities and addresses the concerns of the residents of the barangay. Assignment for each kagawad are as follows:

Kgd. Raymund B. Leyesa	-	Kagawad	(Purok 1)
Kgd. Bobby A. Macatangay	-	Kagawad	(Purok 2)
Kgd. Vic M. Clanor	-	Kagawad	(Purok 3)
Kgd. Maricris A. Espino	-	Kagawad	(Purok 4)
Kgd. Sandra D. Mendoza	-	Kagawad	(Purok 5)
Kgd. Jorge B. Almarez	-	Kagawad	(Purok 6)

Figure 4. Barangay Council of Bolbok

D. Barangay Health Center

The Barangay Health Center is headed by Ms. Angelina T. Evangelista, Midwife II. There are 4 Barangay Health Workers (BHWs), 4 Barangay Service Point Officer (BSPO) and 4 Barangay Nutrition Scholars (BNS), each assigned to 2 Puroks.

Figure 5. Barangay Health Center Organizational Chart

The Barangay Health Center is open from Monday to Friday, from 8:00 AM to 5:00 PM. The weekly schedule is as follows:

Table 2. Barangay Health Center Schedule

Day	BHC Activities	BHW Assigned
Monday	Doctor's Consult Buntis Clinic Family Planning Immunization	CEMPRON/BATICOS/MANGILA
Tuesday	Doctor's Consult Buntis Clinic Family Planning Immunization	MENDOZA/AGUILA/ROQUE
Wednesday	Doctor's Consult Family Planning Immunization	AS SCHEDULED
Thursday	Doctor's Consult Buntis Clinic Family Planning Immunization	DR. CORALES SANDOVAL/BERON/MELO
Friday	Doctor's Consult	SOLOMON/ MAGTIBAY/ROQUE

II. COMMUNITY CHARACTERIZATION

A survey was done using the tool called Community Diagnosis Survey Form, with respondents representing households coming from all the seven puroks (37 to 52 households per purok). Tallying of the responses was done, which revealed the following results:

A. Households/Families

Table 3. Frequency and Distribution of Families by Purok in Bolbok, Batangas City

PUROK	FAMILIES	
	No.	%
1	43	14
2	50	16
3	45	14
4	41	13
5	37	12
6	48	15
7	52	16
Total	**316**	**100**

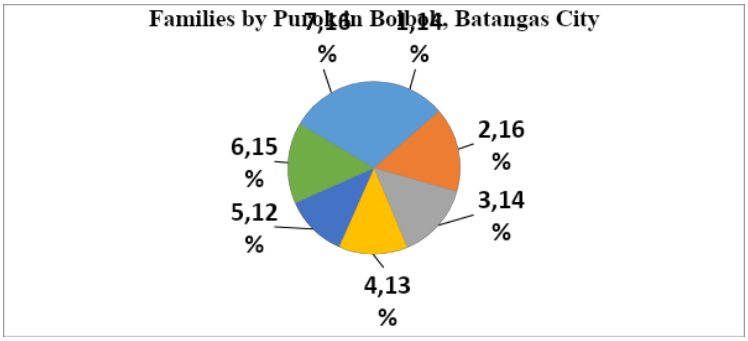


Figure 6. Distribution of Families by Purok in Bolbok, Batangas City

Table 3 and Figure 6 shows the frequency and distribution of families by each purok with the majority being attributed to Purok 7.

Table 4. Frequency and Distribution of Families by Number of Families in their household

# OF FAMILIES IN A HOUSEHOLD	FAMILIES	
	No.	%
1	227	72
2	85	27
3	3	1
4	1	0
Total	**316**	**100**

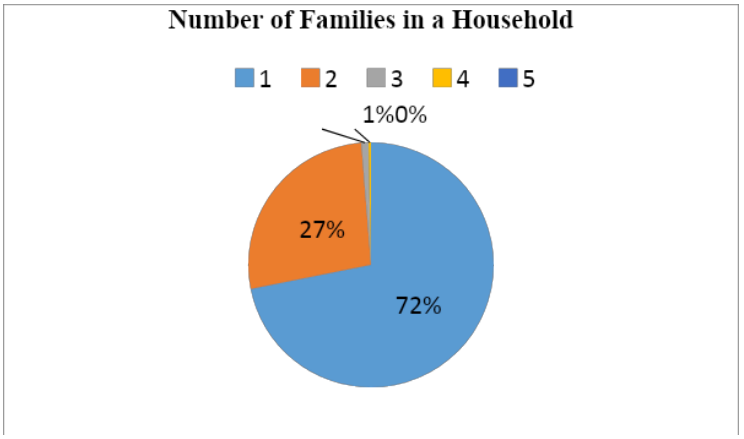


Figure 7. Distribution of Families By Number of Families in their Household

Of the total 316 participants in the survey, 227 respondents or 72% of the total study population have only 1 family residing in their households. Furthermore, Table 4 and Figure 7 supports that majority of the population consists of a nuclear type of family.

Table 5. Frequency and Distribution of Families By Family Size

FAMILY SIZE (IN NUMBER OF MEMBERS)	FAMILIES	
	No.	%
1-3	52	16
4-6	239	76
7-9	20	6
> or = 10	5	2
Total	**316**	**100**

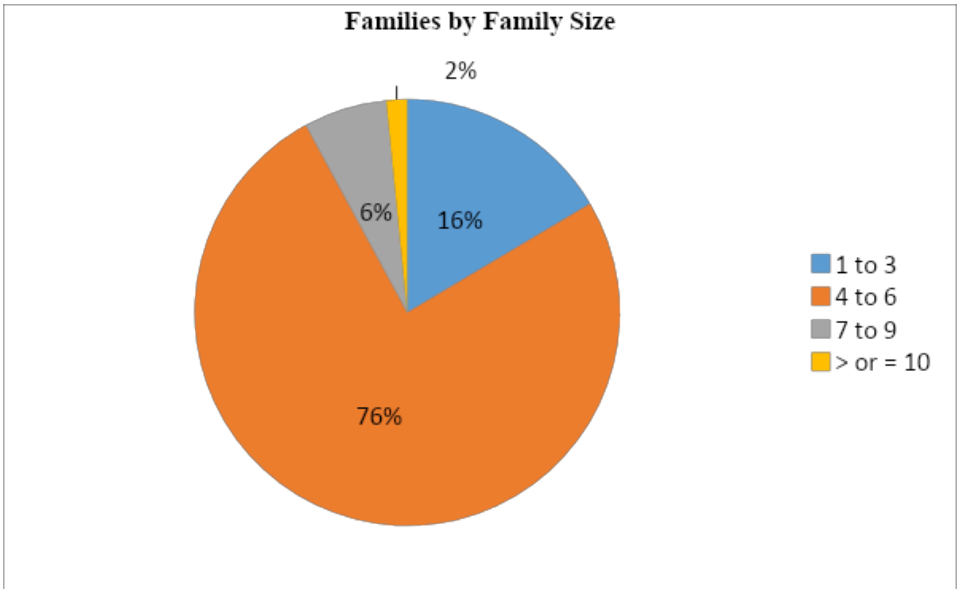


Figure 8. Families By Family Size

Table 5 and Figure 8 shows that most of the study population responded that their household consists of 4-6 members accounting for 76% of the total population.

B. Dwelling Unit of each Family

Table 6. Distribution of Families According to House and Lot Ownership

OWNERSHIP	FAMILIES			
	HOUSE		LOT	
	No.	%	No.	%
Owned	198	63	211	67
Lease	0	0	0	0
Renting	51	16	50	16
Owned by relatives	67	21	55	17
Total	**316**	**100**	**316**	**100**

Table 6 shows that majority of houses and lands are owned by the dwellers which accounts to 63% and 67% of the study population or 198 and 211 out of 316 households respectively. The land owned by their relatives are lent to the families without any money in talks for rent.

Table 7. Distribution of Families According to Housing Type

	FAMILIES	
HOUSING TYPE	**No.**	**%**
Concrete	237	75
Wood	57	18
Concrete + Wood	22	7
Total	**316**	**100**

Table 7 depicts on the other hand that most of the houses are made out of cement owing to 237 out of 316 (75%), followed by wood and combination of concrete and wood, with the percentage of 18% and 7% respectively.

Length of Stay

Table 8. Frequency and Distribution of Families According to Length of Stay

	FAMILIES

LENGTH OF STAY	No.	%
<6 months	5	2
6 months – 1 year	26	8
>1 year	284	90
TOTAL	**316**	**100**

Table 8 shows that majority of the study population in lieu of their length of stay have been in Bolbok for more than a year in their own households amounting to 90% of the population.

Plan of Stay

Table 9. Frequency and Distribution of Families According to Plan of Stay

PLAN OF STAY	FAMILIES	
	No.	%
1-2 years	2	1
3-5 years	22	7
>5 years	292	92
TOTAL	**316**	**100**

Table 9 shows that most of the families plans to stay in their residences for more than 5 years and have adapted to the way of living in Bolbok.

C. Source of Information

Table 10. Frequency and Distribution of Families by Source of Information

SOURCE OF INFORMATION	FAMILIES	
	No.	%
Television	300	95
Radio	107	34
Newspaper	44	14
Comics	6	2
Magazine	25	8
Hearsay	35	11
Cellphone	290	92
Internet/ Facebook	278	88

Table 10 allows the overview of the variety of sources of information utilized by the community in each household. It shows that news and other reports are already accessible through the television, internet and cellphones which accounts to 95%, 92% and 88% respectively.

D. Power Source

Table 11. Frequency and Distribution of Families by Power Source

POWER SOURCE	FAMILIES	
	No.	%
Meralco	305	97

Submeter	10	3
Others (Solar)	1	0
TOTAL	**316**	**100**

Table 11 shows that the majority of the community's power source is Meralco which is represented by 97% of the study population.

E. Family Expenses

Table 12. Frequency and Distribution of Families by Expenses

EXPENSES	FAMILIES	
	No.	**%**
Food	316	100
Education	309	98
Water and Electricity	285	90
Medications/ Consultations	264	84
Rent	62	20
Fare	23	7

Table 12 shows that the allocation of money with regards to the expenses of the family depicts a high contribution to food accounting 100% of the study population. This is followed by education and water/electricity.

F. Community Problems

Table 13. Frequency and Distribution of Community Problems of the Interviewed Population

COMMUNITY PROBLEMS	FAMILIES	
	No.	%
Health	240	76
Joblessness	215	68
Lack of land titles	105	33
Illegal drugs	16	5
Crime	12	4
Water/ Electricity	4	1

Table 13 shows the list of community problems. As noted, the top 3 are health, joblessness, and lack of land titles with 76%, 68% and 33% of the total study population, respectively.

G. Acquired Diseases

Table 14. Frequency and Distribution of the Causes of Hospitalization of the Interviewed Population

CAUSES OF HOSPITALIZATION	FAMILIES	
	No.	%
SVI, cough, colds	53	17
Hypertension	23	7
Asthma	11	3

Dengue	8	3
Heart attack	8	3
Cancer	4	1
Pneumonia	2	1
Diabetes	2	1
Skin infection	1	0

Table 14 shows the frequency and distribution of the causes of death in each family in the span of a year. The topmost contributors are SVI/ cough/ colds and hypertension.

H. Hospital Expenses

Table 15. Frequency and Distribution of the Source for Hospital Expenses of the Interviewed Population

SOURCE FOR HOSPITAL EXPENSES	FAMILIES	
	No.	%
Philhealth	290	92
Own pocket	174	55
Government	136	43
Relatives	41	13
Indigent	16	5
HMO	9	3
Borrowed money	9	3

Table 15 depicts that the majority of the community members pay for hospital expenses by way of their healthcare coverage from Philhealth (92%) as well as using money from their own pockets (55%). Most members of the community who do not have Philhealth for healthcare expenses responds with answers which connotes it as additional expenses.

J. Mortality

Table 16. Frequency and Distribution of Mortality within the Year of the Interviewed Population

PRESENCE OF MORTALITY WITHIN THE YEAR	FAMILIES	
	No.	%
Yes	31	10
No	285	90
Total	316	100

Table 17. Frequency and Distribution of the Top 5 Causes of Mortality within the Year of the Interviewed Population

TOP 5 CAUSES OF DEATH		FAMILIES	
		No.	%
1	Myocardial Infarction	8	3
2	Stroke	5	2
3	Cancer	4	1
4	Kidney Failure	3	1
5	Diabetes	2	1

Based on Table 16 and 17, respondents answered that their family had mortality within the year, 8 was due to Heart attack, 5 was stroke, 4 was Cancer, 3 was Kidney failure, 2 was Diabetes, others was due to Brain Tumor, Tetanus, Gun shot, Congenital Heart disease, Meningitis, Sepsis, Pulmonary TB, Rheumatic Heart Disease and Pneumonia.

K. Health Behavior

Table 18. Frequency and Distribution of Households by Health Behavior to Consultation

HEALTH SEEKING BEHAVIOR	HOUSEHOLDS	
	No.	%
Health Center	163	52
Private Clinics	23	7
Quack doctors	7	2
Herbal medicines	5	1
Public/ Government hospital	73	23
Private hospital	21	7
Self-medication	22	7
Others	2	1
Total	**316**	**100%**

This table shows the health seeking behavior of the study population. Majority of them go to Health Center (52%) for consult. While 23% of the study population go to a public or government hospital, 7% of the studied population prefers private hospital.

L. Health Services

Table 19. Frequency and Distribution of Households by Health Services

HEATH SERVICES	HOUSEHOLDS	
	No.	**%**
Check-up	103	32
Pre-natal	40	13
Free medications	65	20
BP monitoring	57	18
Vaccinations	30	10
Weight monitoring	21	7

Table 17 shows the health services offered by the health center. Majority of the respondents availed free check-up, free medications and BP monitoring which accounts for 32%, 20% and 18% respectively.

M. Infant Feeding Practices

Table 20. Frequency and Distribution of Households by Infant Feeding Practices

INFANT FEEDING PRACTICES	HOUSEHOLDS	
	No.	%
Breastfeed	77	75
Powdered milk	27	26
Total	104	100

This table shows majority of households with children 2 years and below have been fed with powdered or formula milk, breast milk, or mixed.

N. Breastfeeding

Table 21. Frequency and Distribution of Pediatric Population Based on Weaning From Breastfeeding

WEANING FROM BREASTFEEDING	PEDIATRIC POPULATION	
	No.	%
1-3 months	5	4
4-6 month	25	24
7-9 months	9	9
10-12 months	36	35

2 years old	23	23
3 years old	4	4
4 years old	2	2
Total	104	100

Table 21 shows that majority of the pediatric population age 10-12 months stopped breastfeeding which accounted for 35% of the total study population followed by 4-6 months with 24%.

O. Supplementary Feeding

Table 22. Frequency and Distribution of Age Based on Supplementary Feeding

SUPPLEMENTARY FEEDING	AGE	
	No.	%
1-3 months	2	2
4-6 month	72	69
7-9 months	7	6
10-12 months	10	10
1 ½ years old	2	2
2 years old	8	8

3 years old	3	3
Total	104	100

Table 22 shows the age when supplementary feeding was started. Majority of the respondents started to introduce soft to semi-solid food in infants age 4-6 months (69%) followed by those infants under 10-12 months of age (10%).

P. Community Health Problems

Table 23. Frequency and Distribution of Community Health Problems

COMMUNITY HEALTH PROBLEMS	HOUSEHOLDS	
	No.	%
Common illnesses	75	24
Source of clean water	8	3
Cleanliness	51	16
Expensive medications	57	18
Lack of education	77	24
Malnutrition	13	4
Insufficient health service	23	7
Others	12	4
TOTAL	**316**	**100**

This table shows that majority of the respondents answered that the common health problems at their community were lack of education 24%, common illnesses with 24% and expensive medications with 18%.

Q. Environment

Table 24. Frequency and Distribution of Households by Presence and Type of Excreta Disposal

EXCRETA DISPOSAL	HOUSEHOLDS	
	No.	%
De-buhos	270	86
May flush	37	12
Sinusunog	9	2
TOTAL	**316**	**100**

Table 24 shows that 98% of the study population has their own latrine in which 86% of them are *De-buhos* type and 12% are with flush.

R. Type of Water Source

Table 25. Frequency and Distribution of Type of Source of Drinking Water

SOURCE OF DRINKING WATER	HOUSEHOLDS	
	No.	%

Tap (faucet, piped water, filtered)	165	52
Mineral water	122	39
Private Water Purifier	2	0
Bottled water	27	9
TOTAL	**316**	**100**

Table 25 shows that majority of the households use tap water (52%) as their source of drinking water and for children they use mineral water (39%), while for cooking, they get it from the Water Refilling Stations.

S. Pets

Table 26. Frequency of Owned Pets

ANIMAL TYPE	LEASHED	CAGED	UNLEASHED	TOTAL
Dog	70	37	10	117
Cat	0	0	31	31
Chicken	27	0	0	27

Table 26 shows that majority of the study population own dogs as their pets and mostly are leashed, followed by cats then chickens.

T. Waste Disposal

Table 27. Frequency of Type of Garbage Disposal by the Community Members

GARBAGE DISPOSAL	HOUSEHOLDS	
	No.	**%**
Garbage collection	309	98
Individual pit	3	1
Burning	4	1
TOTAL	**316**	**100**

Table 27 shows that majority (98%) of the household's garbage are collected by the official garbage collector.

III. COMMUNITY PRIORITIZATION

Results of the survey using the Community Diagnosis Survey Form were discussed with stakeholders, the Barangay Bolbok Officials and the staff of Bolbok Health Center on July 17, 2019, at the Barangay Health Center.

Figure 9. First Stakeholders Meeting

Also, the issues and problems in their respective Puroks were discussed. The output of which is the problem tree as shown below:

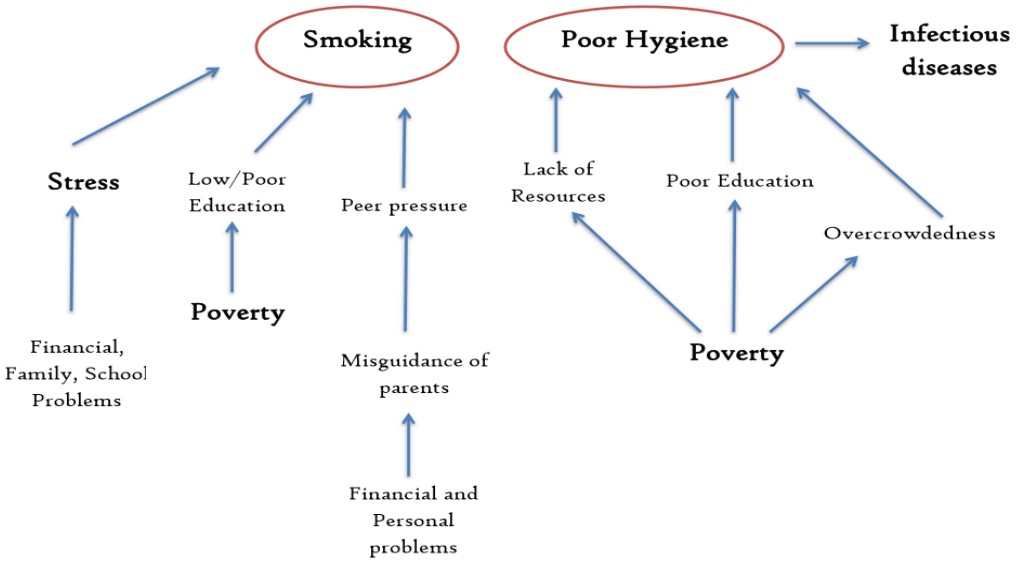


Figure 10. Problem Tree Analysis

Initially, the main problems identified were smoking and poor hygiene. Other BHW's perceived unemployment as a significant problem in the community.

Another Stakeholder's meeting was conducted on November 27, 2019 to further discussed the issues and problems of the community.

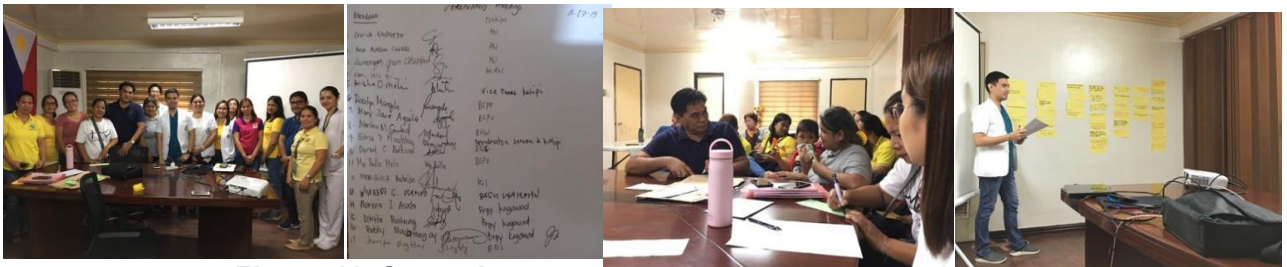


Figure 11. Second Stakeholders' Meeting

Completed results of the health survey has identified health as the top problem in the community and common illnesses as the top health problem.

Table 28. Frequency and Distribution of Community Problems of the Community

COMMUNITY PROBLEMS	HOUSEHOLDS	
	No.	%
Health	**275**	**60**
Joblessness	266	58
Lack of land titles	155	34
Illegal drugs	39	9
Crime	24	5
Cleanliness	13	3
Water/Electricity	12	3
Demolition	1	0

Table 29. Frequency and Distribution of Community Health Problems of the Community

COMMUNITY HEALTH PROBLEMS	HOUSEHOLDS	
	No.	%

Common illnesses	123	27
Expensive medications	89	19
Lack of education	89	19
Cleanliness	83	18
Source of clean water	43	9
Insufficient health service	31	7
Malnutrition	25	5
Others	0	0

Solutions and plans to solve these health problems were the top priority.

IV. DETAILED ASSESSMENT OF THE SELECTED HEALTH PROBLEM

The decision to prioritize the common illnesses in the community and make solutions to solve it called for a detailed assessment of the common health problems. A review of the top 10 causes of consultation as well as the top causes of morbidity and mortality in Barangay Bolbok was made.

Table 30. Top 10 Causes of Bolbok Health Center Consultation

	July 2019	August 2019	September 2019	October 2019	November 2019	December 2019	January 2020
1	URTI	URTI	URTI	SVI	URTI	URTI	URTI
2	SVI	HTN	ATP	ATP	MSP	Bronchial Asthma	Allergic cough
3	ATP	AGE	SVI	URTI	AGE	AGE	HTN
4	Essentially well	SVI	Acute Bronchitis	Pneumonia	Bronchial Asthma	MSP	ATP
5	ANP	MSP	Pneumonia	Acute bronchitis	HTN	HTN	Pneumonia
6	MSP	Infected wound	Allergic cough	HTN	Skin Disease	SVI	**DM**
7	Furuncle	Essentially well	Impetigo	**DM**	**DM**	Skin Disease	Essentially well
8	HTN	**DM**	HTN	AGE	MSP	**DM**	Skin Disease
9	Headache	ATP	**DM**	MSP	Essentially well	Essentially well	Headache
10	**DM**	Headache	MSP	Headache	Headache	Headache	MSP

Table 31. Top Ten Leading Causes of Morbidity

	2017	2018	2019
1	AURI/CARI/URTI	AURI/CARI/URTI	URTI/CARI/ARI
2	ANIMAL BITE	DENGUE	MSD
3	CVD	CVD	ASTHMA
4	**DM**	PNEUMONIA	SKIN DISEASE
5	DENGUE	UTI	**DM**
6	UTI	PTB	PNEUMONIA
7	PTB	WOUND	DIARRHEA
8	ILI	ASTHMA	CVD
9	WOUND	HFMD	ANIMAL BITES
10	PNEUMONIA	SCABIES	TB

Table 32. Top Ten Leading Causes of Mortality

	2017	2018	2019
1	MI	CANCER	CVD/HCVD
2	PNEUMONIA	CVD	PNEUMONIA/ COPD
3	CANCER	PNEUMONIA	CANCER
4	**DM**	ELECTROLYTE IMBALANCE	CAD
5	HCVD, HTN	CKD	**DM**
6	COPD	SAH	MI
7	KIDNEY INJURY	WOUND	LIVER CIRRHOSIS
8	ELECTROLYTE IMBALANCE	**DM**	CHRONIC LIVER DISEASE
9	PTB	INTESTINAL OBSTRUCTION	BLEEDING PEPTIC ULCER DISEASE
10		PTB	TB

Both communicable and non-communicable diseases were the common community illnesses identified. Diabetes was among the non-communicable diseases Bolbok community have. Barangay reports showed that Diabetes Mellitus was among the top ten causes of barangay health center consultation from July 2019 to January 2020. It was the 4th leading cause of barangay morbidity in 2017, 5th in 2019. It has always been on the top ten causes of mortality in the barangay, 4th in 2017, 7th in 2018 and 5th in 2019. As of this moment (January 2020), there were no existing projects or programs for diabetes in the community. On account of the current situation of diabetic care given in Barangay Bolbok Health Center, I started an Advocacy with a goal of improving health outcomes of diabetic patients in the barangay. And in line with this advocacy, this Community-Oriented Primary Care (COPC) Project was made.

V. INTERVENTION

A review of the related literature was made to get a deeper insight into the present situation with regards to diabetes and the potential solutions to improve health outcomes. Dr. Gerry Tan in the 2015 Review on Diabetes Care in the Philippines, studied the prevalence of diabetes in the Philippines and described extensively the characteristics of diabetes care in the Philippines. It was noted that mean hemoglobin A1c in the 2008 DiabCare study was

8.03% which is slightly better than the survey done in 2003 where the mean A1c was 8.9%. It also showed a considerable improvement in the number of patients who reported self-monitoring from 16.1% in 2003 to 46.5% in 2008. This supported the role of diligent diabetes education among Filipino patients with diabetes to optimize glucose control. Thus the study authors concluded that the status of diabetes care in the Philippines and the diabetes awareness in the Philippines appears below the accepted standards and calls for urgent measures to improve the delivery of quality care among patients with Type 2 Diabetes.[7]

Kayar et. al in his study "Relationship Between the Poor Glycemic Control and Risk Factors, Lifestyle and Complications", found that poor glycemic control was significantly associated with duration of diabetes, age of onset, family history, job status, educational status, antidiabetic drugs, body mass index, abdominal circumference, hypertension, lipid and fasting plasma glucose levels. There was a significant relationship between the glycemic control and dietary compliance, physical activity, self-blood glucose monitoring and drug compliance. Thus, enhancement of awareness of patients about the disease and providing the lifestyle modifications must be targeted initially for better results.[8]

Gray et. al. in his research entitled "Continuity of care with doctors—a matter of life and death? A systematic review of continuity of care and mortality" revealed increased continuity of care provided by doctors is associated with lower mortality rates.[9]

Tajudin et al in his study the "Establishment Of A Diabetic Clinic And Its Effects On Glycaemic Control Among Diabetic Patients In Muar District, Malaysia", which aims to establish a diabetes clinic in a private medical clinic in Muar, Malaysia, to create better awareness of diabetes, improving the overall glycaemic control, delays complications and subsequently improves the quality of life. This study showed that having an awareness campaign and a dedicated diabetes clinic can improve patient's glycaemic control.[10]

After considering above reviews, strategies were planned specifically to improve health outcomes of diabetic patients in Barangay Bolbok, Batangas City. The interventions aim to achieve the following objectives:

General Objective:

To improve the care being given to patients with Diabetes Mellitus in the community by 2021.

Specific Objectives:

1. To establish a diabetic clinic with a fixed schedule to regularly cater to patients with diabetes.
2. To conduct regular health education to enhance the knowledge of the community on diabetes by providing a lecture on diabetes and its most recent updates.
3. To increase the number of patients who register in the DM Clinic.
4. To provide free monitoring of blood sugar regularly to patients in the DM clinic.

These objectives can only be achieved by establishing a DM Clinic which will give comprehensive and holistic management to DM patients regularly. Planning of activities in line of our objectives followed.

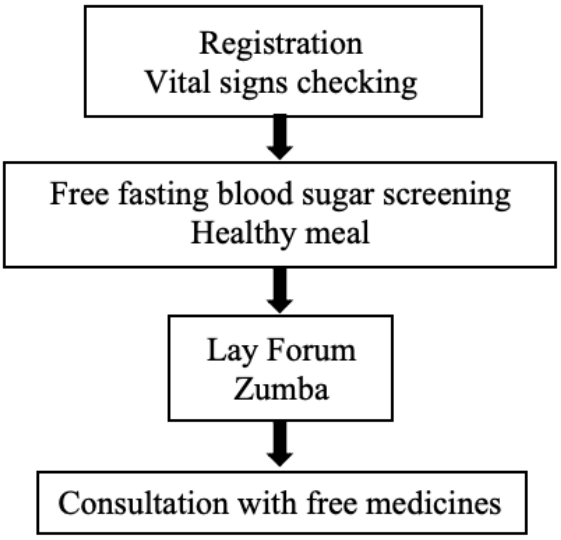
Objectives	Strategies	Resources	Timeline	Indicators
To establish a diabetic clinic with a fixed schedule to regularly cater to patients with diabetes.	Information dissemination Launching of the DM clinic Putting of signage Enrollment of members	Flyers, posters, cellphone Clinic schedule signage Registration forms	Starting February 2020 onwards	Number of patients enrolled in the DM Clinic
To conduct regular health education to enhance the knowledge of the community on diabetes by providing a lecture on diabetes and its most recent updates.	Lay forum Text Messaging	TV Screen, Projector, Sound system, Microphone Cellphone Weighing scale Height meter	Starting February 2020 onwards	Control of blood sugar level of DM patients Weight reduction for overweight and obese DM patients
To increase the number of patients who register in the DM Clinic.	DM clinic promotion Information dissemination Text Messaging Activities: Zumba Healthy meal Free consultation Free medicine	Flyers, posters, cellphone Clinic schedule signage Sound system, Microphone Plastic cup, spoon, soup and water, patient's chart, medicines	Starting February 2020 onwards	Number of patients enrolled in the DM Clinic
To provide monitoring of blood sugar regularly to patients in the DM clinic, free of charge.	Free fasting blood glucose test	Glucometer and test strips, cotton, alcohol	Starting February 2020 onwards	Control of blood sugar level of DM patients

On February 3, 2020, a meeting with the Barangay Bolbok Health Workers and the Barangay Captain Hon. Wilfredo Ocampo was conducted. Planned interventions were presented. Asking everyone to get involved.

Posters were posted around Bolbok Barangay Hall and flyers were distributed to residents of Barangay Bolbok one week prior to DM Clinic launching. At the same time the Barangay Health Workers did information dissemination through text messaging.

On February 11, 2020, the DM Clinic was officially launched with the following flow of activities:

DM Clinic Launching Flow of Activities



1. Each participant filled-up the registration form with their names, age, sex, purok, and contact numbers. Checking of patient's vital signs, height and weight followed.
2. Participants were then screened for fasting blood sugar.
3. Healthy soup and water were served.
4. A lecture on Diabetes Mellitus, its diagnosis and management and the complications of poor glycemic control were presented to the participants in the waiting area of barangay hall. Pre-test and Post-test were given to all participants to assess baseline and acquired knowledge on diabetes. Question and answer portion followed.
5. Zumba dancing performed. This is a 30 minute exercise participated by the patients, barangay healthcare workers, clerks, interns and resident.
6. Patient consultation was rendered. The DM assessment tool was utilized in the management of patient. Chart completion and filing was performed.
7. Officially the DM Clinic was launched. Schedule of DM consultation with free medicine and free fasting blood glucose was set every 2nd Tuesday of the month. Signage was put on the reminders bulletin board in front of the health center.

8. Evaluation of the whole activity done. Patients were given a piece of paper and pen after consultation. Each were asked to write their comments and suggestions on the advocacy done. All patients enjoyed the activity and hopes that the next DM clinic activities will be as interactive and enjoyable too.

For the regular conduct of this COPC project, as scheduled DM clinic will be every 2nd Tuesday of the month.

VI. EVALUATION

A. IMPACT OF INTERVENTION

On evaluation and monitoring, the following indicators showed an effective implementation of strategies:

1. Increased number of patients enrolled in Bolbok DM Clinic.
2. Improvement in fasting blood sugar monitoring.
3. Weight reduction for overweight and obese DM patients.

Table 1. Number of DM Patients Enrolled in the DM Clinic

	02/11/20	03/10/20	04/11//20	05/11/20	08/13/20	01/14/21	02/11/21	03/11/21
Newly Enrolled DM Patients	41	2	8	7	3	6	10	10
TOTAL	41	43	51	58	61	67	77	87

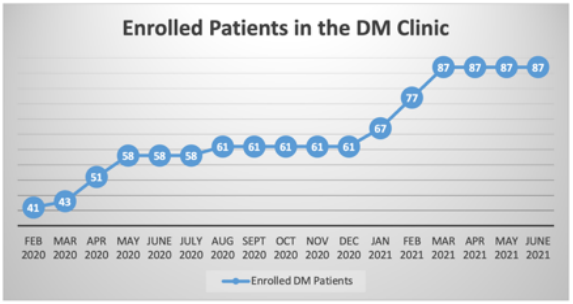


Figure 1. Enrolled Patients in DM Clinic

Table 1 and Figure 1 shows the increasing number of diabetic patients enrolled in the DM clinic from the initial launching of the DM clinic on February 11, 2020 up to March 11, 2021. A

112% increased of DM clinic enrollees was noted form the initial 41 to 87 enrolled diabetic patients. Note that there were months without consultation due to covid infection, health center was closed and barangay health workers were quarantined. The presence of enrollees for every DM clinic schedule only proves the effective promotion of the DM clinic in the community.

Table 2. Fasting Blood Sugar Level of DM Clinic Patients

	Normal <100 (5.6)		Pre-diabetes 100-125 (5.6-6.9)		DM 126 (7.0) and above		
	No.	%	No.	%	No.	%	TOTAL
Feb 2020	21	51	11	27	9	22	41
Mar 2020	37	86	3	7	3	7	43
Apr 2020	41	80	4	8	6	12	51
May 2020	53	91	1	2	4	7	58
August 2020	54	88	4	7	3	5	61
January 2021	49	73	11	16	7	11	67

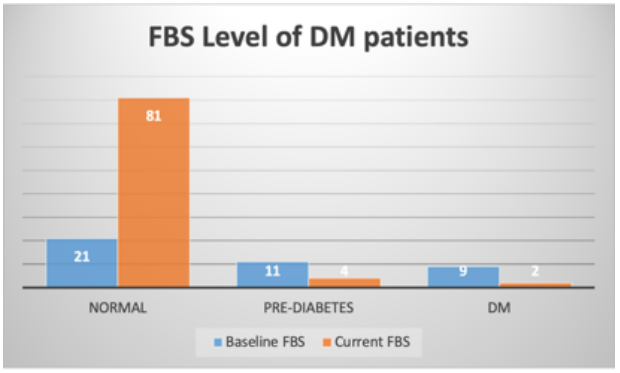


Figure 2. Initial and Final FBS Results of DM Clinic Patients

Table 2 and Figure 2 shows the number and the percentage of DM Clinic patients as to fasting blood sugar level. On initial consult, 51% of DM clinic patients have normal fasting glucose value, 27% falls on the pre-diabetes level, and 22% of patients have high results. These patients with normal results are those with Controlled Type 2 Diabetes Mellitus at the start of the DM clinic. Notice the shift towards normalization of fasting blood sugar levels of patients on final monitoring where 93% of patients have normal results, 5% are on the pre-diabetes level and only 2% were left with high sugar levels. Comparing the initial and final fasting blood sugar values. There is a 42% increase in the number of DM patients with normal results and a decrease in the number of patients with pre-diabetes and diabetes glucose values, 22% and 20% respectively. This clearly shows the effectiveness of the

intervention in the improvement of care and thus improvement of glucose control of DM patients. This improved glycemic control can be attributed to the regular monitoring and follow-up of patients brought about by the regular DM Clinic schedule.

Table 3. Distribution of DM patients as to BMI classification

BMI Class	Baseline BMI		Current BMI	
	No.	%	No.	%
Normal (18.5 – 22.9)	30	35	29	33
Overweight (23 – 24.9)	22	25	20	23
Obese I (25 -29.9)	29	33	32	37
Obese II (30 and above)	6	7	6	7
Total	87	100	87	100

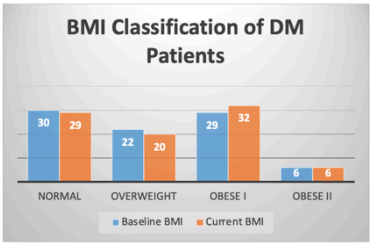


Figure 3. Baseline and current BMI classification DM Clinic Patients

Table 3 and Figure 3 shows the number and the percentage of DM Clinic patients as to BMI Classification. On initial consult, 35% of patients have a normal BMI, 25% were overweight, and 40% of patients were obese. No DM patients were underweight at baseline. All patients were advised of lifestyle modification to maintain or attain a normal BMI. Upon comparison of baseline and current BMI, 93% of patients have no changes in their BMI. The remainder 7% accounts for patients with changes in their BMI classification: 4% overweight turned obese, 2% normal became overweight, and 1% overweight turned normal. The current BMI classification of DM patients revealed 33% normal, 23% overweight and 44% obese. These is due to difficulty in lifestyle modification experienced by the patients because of the limitation in mobility due to covid pandemic. Although patients did exercise, staying at home made their lives more sedentary. Also patients had difficulty in their access for fresh foods, most of the “ayuda” given by the barangay were canned goods.

Table 4. Distribution of DM patients as to weight loss and gain

	DM Patients		%Weight loss Ranges	
	No.	%	Lower Limit	Upper Limit
Weight gain	22	25	-0.45	-16.03
Weight loss	8	9	0.14	5.96
No change	57	66	0	0
Total	87	100		

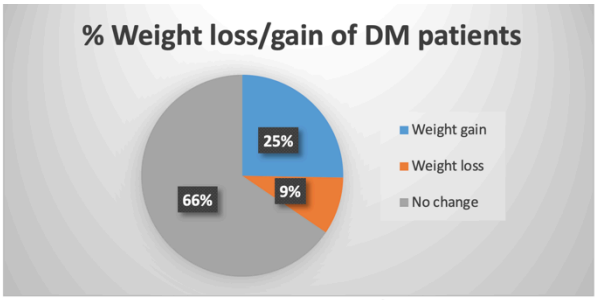


Figure 4. Weight loss and gain of DM patients

Table 4 and Figure 4 shows the percent weight loss and weight gain of DM patients. Of the 87 enrolled patients in the DM clinic, 25% gained weight (-0.45 to -16.03), 9% lost weight (0.14 to 5.96) and 66% have unchanged weight.

B. INSIGHTS AND PERSONAL LEARNING

The conduct of a Community Oriented Primary Care project involves a process with systematic steps to follow in order to be good. In each steps, involvement of the community is crucial for its success. It is very important to build a good rapport to all members of the community in order to establish a good working relationship with them. This COPC Project gained so much support, participation, and involvement of the community. The dedication of the barangay health workers to continue this project amidst the pandemic, the support given by the City Health Office in providing the diagnostic and medical needs, the financial and moral support from the barangay officials, and the cooperation of all barangay Bolbok residents made this project triumphant. In this COPC project, we all accepted the responsibility in improving the health of the entire community. Community involvement and utilization of existing primary care and community resources were the key to the achievement of our expected health benefits.

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