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Health Profile, Perpetuating Factors and Health Service Needs of Clients with Non-communicable Diseases

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Abstract

This study aimed to describe the health profile, risk factors and health service needs of clients in the management of their non-communicable diseases. This descriptive-correlational study was conducted in BTL community where respondents included 100 patients who have NCDs with more than half of them reported to have gout and rheumatoid arthritis. Data were collected using survey questionnaires and were analyzed using descriptive statistics and the Pearson correlation coefficient (r). Majority of the respondents were female, with ages ranging from 48-59 years old whose occupation was mainly housekeeping and mostly reached some high school with below 5,000 as a monthly income. Drinking alcohol and high blood pressure have the highest number in terms of modifiable behavior and metabolic risk factors respectively. The highest among the health service needs as described by clients was home visit which includes procedure at home, community and health care providers support, environmental assessment, and environmental modification. However, all the health service needs namely NCD care, primary medical care, community activity, emergency care, home visit and communication were found to be essential as perceived by the clients. Hence, results suggested that community health practitioners primarily the nurses should develop programs and extend services to address the health needs of clients with non-communicable diseases in the community.

Rationale/Introduction

The "Health Profile, Risk Factors and Health Service Needs of Clients With Non-Communicable Diseases" is a study aimed to obtain baseline data on non-communicable diseases present from among agricultural farmers' groups and their families such as the Bukidnon Free Farmers Agricultural Laborer Organization (BUFFALO), Tried Agricultural Movers Association of Rural Active Workers (TAMARAW), and Land Tiller Inhabitants of Musuan (LIMUS) or more popularly known as BTL; a community of farmers' groups with their families living at Barangay Dologon in Maramag, Bukidnon, Philippines.

To date, non-communicable diseases (NCDs) constitute a major global health challenge, hampering nations' economic growth and sustainable development. The four major groups of NCDs - cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes - account for over 80% of all NCD related deaths. People of all age groups, regions and countries are affected by NCDs. These conditions are often

associated with older age groups, but evidence shows that more than 15 million of all deaths attributed to NCDs occur between the ages of 30 and 69 years. (https://www.bmj.com/NCD-solutions).

One of the most important ways of reducing deaths from non-communicable diseases (NCDs) is to control unhealthy lifestyle choices that lead to their development. These include reducing the use of tobacco and the harmful use of alcohol, maintaining an active lifestyle, and developing a healthy diet. Promotional activities towards these goals are low-cost ways for countries to reduce the number of NCD deaths (WHO). Hence, this study utilized a research methodology to further elucidate the importance of baseline information as to the identification of clients with non-communicable diseases and the risk factors that co-exist with these NCDs while knowing what health service needs are essential for the management of non-communicable diseases in their respective communities.

Review of Literature

Non-communicable diseases (NCDs), including heart disease, stroke, cancer, diabetes, and chronic lung disease, are collectively responsible for almost 70% of all deaths worldwide. Almost three quarters of all NCD deaths, and 82% of the 16 million people who died prematurely, or before reaching 70 years of age, occur in low- and middle-income countries. The rise of NCDs has been driven by primarily four major risk factors: tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets. The epidemic of NCDs poses devastating health consequences for individuals, families, and communities, and threatens to overwhelm health systems (WHO).

Furthermore, the WHO reported that modifiable behaviors, such as tobacco use, physical inactivity, unhealthy diet and the harmful use of alcohol, all increase the risk of NCDs. Tobacco alone accounts for over 7.2 million deaths every year (including from the effects of exposure to second-hand smoke) and is projected to increase markedly over the coming years. More than half of the 3.3 million annual deaths attributable to alcohol use are from NCDs, including cancer and 1.6 million deaths annually can be attributed to insufficient physical activity.

An important way to control NCDs is to focus on reducing the risk factors associated with these diseases. Low-cost solutions exist for governments and other stakeholders to reduce the common modifiable risk factors. Monitoring progress and trends of NCDs and their risk is important for guiding policy and priorities.

In a study published in bangkokmedjournal.com in September 2020, the highest nursing services needed in the prevention and management of NCDs as described by patients with NCDs was in emergency care including contact with healthcare providers, knowledge on emergency complications and basic emergency response skill followed by primary medical care (PMC) including diagnosis receiving medication and physical examination. Next to it was community activity including knowledge and skill for complication prevention, quit smoking campaign, quit alcohol consumption campaign, and promoting a healthy diet communication including using simple language communication through public broadcasting and health education through appropriate media home visit including community and healthcare providers support environmental and environmental assessment and NCD care including medication refill follow up and referral system.

Objectives

The main purpose of the project was to collect baseline information about non-communicable diseases through method of assessment in identifying the health service needs of among the farmers' groups and

their families with non-communicable diseases. Specifically, the study sought to determine the following:

1. The socio-demographic characteristics which also includes the health profile of the respondents consisting of the non-communicable disease(s) present, sex, age, occupation, educational attainment, and monthly income.
2. The modifiable behavioral metabolic perpetuating factors that coexist with non-communicable diseases of the respondents such as tobacco use, physical inactivity, use of alcohol, raised blood pressure, body mass index (obesity) and high blood glucose levels.
3. The health service needs of clients in the management of non-communicable diseases as perceived by the respondents.
4. The significant relationship that exists

Procedure/Methodology

Study Site(s)

Dologon is a barangay in the municipality of Maramag, in the province of Bukidnon, Philippines where sub-communities belonging to the farmers' groups live such as Bukidnon Free Farmers Agricultural Laborer Organization (BUFFALO), Tried Agricultural Movers Association of Rural Active Workers (TAMARAW), and Land Tiller Inhabitants of Musuan (LIMUS) collectively known as BTL.

Sampling

The respondents of the study were the residents belonging to the farmers' groups called BTL in Brgy. Dologon, Maramag, Bukidnon. Residents who came and reported to have at least one communicable disease have been asked to participate in the study. This descriptive cross-sectional study used a controlled quota sampling to determine the sample size.

Inclusion criteria: a) must be 18-59 years old with a non-communicable disease present, b) a resident belonging to the groups of BTL, and c) willing to participate.

Exclusion criteria: a) less than 18 years old, b) senior citizen and c) not willing to participate.

Data Gathering

Letters of permission following the entry protocol were secured. The researchers also coordinated with the Brgy. Captain and Purok Leaders in BTL through verbal and written communications.

The researchers with the support from the University's Research Office had established rapport from the residents in BTL at the time of data collection.

During the scheduled date and time of data gathering; residents together with the community leaders were asked to convene in one place as this activity had explained the purpose of the researchers' presence and likewise became an opportunity to float the questionnaire after having met the criteria and signed the informed consent to become eligible respondents of the study.

Data Analysis

Descriptive statistics such as frequency counts, percentage, and mean scores were used to describe the data on respondents' socio-demographic characteristics, risk factors that co-exist with their non-communicable diseases and their perceived health service needs for its management. Moreover, to find out the relationship between and among the variables, a Pearson correlation coefficient was used.

Results & Discussions

The demographic profile which also includes the health profile of the respondents in terms of non-communicable disease present, sex, age, occupation, educational attainment and monthly income are

presented in Table 1. It can be observed that half of the respondents (50%) have other diseases apart from the non-communicable diseases in the options. The other NCDs include gouty arthritis and rheumatism while some NCDs which are leading causes of mortality and morbidity have the following percentages: cardiovascular diseases (24%), chronic respiratory diseases (12%), diabetes (10%), cancer (3%) and stroke (1%).

In terms of sex, majority of the respondents were female (68%) while the remaining 32% were male. More than half of the respondents have ages ranging from 48-59 years old (52%) while the rest were aged 38-47 years old (19%), 28-37 years old (17%) and 18-27 years old (12%) accordingly. Moreover, occupation of the respondents includes housekeeping with the highest percentage (56%) while farming and other occupations have generated about 28% and 16% respectively.

On the other hand, educational attainment of the respondents was also collected. It shows that majority of the respondents have reached some high school (31%) while some of them were high school graduates (23%) and elementary graduates (18%). The rest of them have some elementary (9%), some college (8%), and college graduates (5%). However, there was this 6% of the respondents who have attended their preschool/kindergarten only and or have not attended any formal education in school at all.

In terms of monthly income, majority of the respondents have below 5,000 (64%) while others have 5,000 to less than 10,000 (18%), 10,000 to less than 15,000 (12%), 15,000 to less than 20,000 (3%) and 20,000 to less than 25,000 (3%) respectively.

Table 1 Socio-demographic and health profile characteristics

CATEGORY	**FREQUENCY (N=100)**	**PERCENTAGE**
Non-communicable diseases present		
Diabetes	10	10
Cardiovascular Disease (CVD)	24	24
Stroke	1	1
Cancer	3	3
Chronic Respiratory Diseases (COPD, asthma)	12	12
Others (gout, rheumatoid arthritis)	50	50
Sex		
Male	32	32
Female	68	68
Age		
18-27 yrs old	12	12
28-37 yrs old	17	17
38-47 yrs old	19	19
48-59 yrs old	52	52
Occupation		
Farming	28	28
Housekeeping	56	56
Others	16	16

Educational Attainment		
Some elementary	9	9
Elementary school graduate	18	18
Some high school	31	31
High school graduate	23	23
Some College	8	8
College Graduate	5	5
Others	6	6
Monthly Income		
Below 5000	64	64
5000 to less than 10,000	18	18
10,000 to less than 15,000	12	12
15,000 to less than 20,000	3	3
20,000 to less than 25,000	3	3
25,000 above	0	0

Table 2 shows the perpetuating factors that co-exist with non-communicable diseases. Primarily, these factors were asked from the respondents as to whether they have some of these modifiable behavioral and metabolic perpetuating factors that co-exist at the same time with their non-communicable diseases. Noncommunicable diseases (NCDs) are the main source of disease burden worldwide and are thus a major public health problem. Major factors are obesity, raised BP, raised blood glucose, raised cholesterol levels, smoking, physical inactivity, sedentary behavior (Kundapor, R et.al, 2022).

In terms of modifiable behavioral perpetuating factors, 24 of the 100 respondents were drinkin lcohol, 10 were smoking and only 1 was seen to have physical inactivity. For the metabolic perpetuating factors, the respondents body mass index, blood pressure and blood sugar were assessed to determine incidence of overweight, obesity, high blood pressure and high blood sugar believed to be associated factors with the emergence of non-communicable diseases in the populace. The data shows that 67 (67%) of them have high blood pressure (hypertension), 40 (47%) have high blood sugar, 28 (28%) were overweight and 13 (13%) were obese.

The rising prevalence of behavioral and metabolic perpetuating factors for these lifestyle diseases is postulated to be the cause for the alarming increase of NCDs. According to the World Health Organization (WHO, 2022), people of all age groups, regions and countries are affected by NCDs. These conditions are often associated with older age groups, but evidence shows that 17 million NCD deaths occur before the age of 70 years. Of these premature deaths, 86% are estimated to occur in low- and middle-income countries. Children, adults, and the elderly are all vulnerable to the perpetuating factors that may worsen NCDs, whether from unhealthy diets, physical inactivity, exposure to tobacco smoke or the harmful use of alcohol.

WHO further elaborated the following modifiable behavioral risk factors that continue to perpetuate especially those with non-communicable diseases including tobacco which accounts for over 8 million deaths every year (including from the effects of exposure to second-hand smoke); 1.8 million annual deaths have been attributed to excess salt/sodium intake; more than half of the 3 million annual deaths worldwide attributable to alcohol use are from NCDs, including cancer and 830 000 deaths annually can be attributed to insufficient physical activity.

Strong evidence also shows that physical inactivity increases the risk of many adverse health conditions, including major non-communicable diseases such as coronary heart disease, type 2 diabetes, and breast and colon cancers, and shortens life expectancy. Because much of the world's population is inactive, this link presents a major public health issue (Lee, I.-M, 2012)

On the other hand, the metabolic risk factors contribute to four key metabolic changes that increase the risk of NCDs that include raised blood pressure; overweight/obesity; hyperglycemia (high blood glucose levels); and hyperlipidemia (high levels of fat in the blood). In terms of attributable deaths, the leading metabolic risk factor globally is elevated blood pressure (to which 19% of global deaths are attributed), followed by raised blood glucose and overweight and obesity, the WHO (2022) reported.

Table 2 Perpetuating factors that co-exist with non-communicable diseases

CATEGORY	FREQUENCY (N=100)	PERCENTAGE
Behavioral Perpetuating Factors		
Smoking	10	10
Drinking alcohol	24	24
Physical Inactivity	1	1
Metabolic Perpetuating Factors		
Overweight	28	32
Obesity	13	13
High Blood Pressure	67	67
High Blood Sugar	40	40

The nursing needs in the prevention and management of non-communicable diseases as perceived by the respondents are reflected in Table 3. It can be seen that all services such NCD care (4.36), primary medical care, community activity (4.26), emergency care (4.24), home visit (4.40) and communication (4.28) were perceived to be essential in the prevention and management of non-communicable diseases. The highest need of nursing as described by respondents with NCDs was in home visit (4.40)including procedure at home (4.42), community and health care providers support (4.41), environmental assessment (4.39) and environmental modification (4.39). followed by NCD care including screening (4.42), promoting a healthy diet and physical activity (4.40), self-monitoring (4.37), counseling on quit smoking and alcohol consumption (4.35), follow-up (4.35), referral system (4.35), medication refill (4.34) and self-help group (4.33); and next to it was primary medical Care (4.26) including procedure (4.30), receiving medication (4.27), diagnosis (4.26), advice (4.26), physical examination (4.25) and follow-up (4.25).

Moreover, emergency care (4.24) was ranked fourth including basic emergency response skill (4.26), contact with health care providers (4.25), knowledge on emergency complication (4.24), and follow-up (4.22); followed by community activity (4.23) and communication (4.23) with the same mean. The community activity includes promoting a healthy diet (4.27), Quit smoking campaign (4.25), knowledge and skill for complication prevention (4.24), promoting physical activity (4.22) and quit alcohol consumption campaign (4.20) being the only "high priority" among the items. On the other hand, Communication includes using simple language (4.26), communication through public broadcasting (4.23), communication through social media (4.23) and health education through appropriate media (4.22)

Table 3 Health service needs in the prevention and management of non-communicable diseases as perceived by the respondents.

NCD Care	**MEAN**	**DESCRIPTIVE RATING**
Screening	4.42	Essential
Promoting a healthy diet and physical activity	4.40	Essential
Counseling on quit smoking and alcohol consumption.	4.35	Essential
Self-Monitoring	4.37	Essential
Medication Refill.	4.34	Essential
Follow-up	4.35	Essential
Referral System	4.35	Essential
Self-help group	4.33	Essential
NCD Care Mean	**4.36**	**Essential**
Primary Medical Care		
Physical Examination	4.25	Essential
Diagnosis	4.26	Essential
Receiving Medication	4.27	Essential
Advice	4.26	Essential
Follow-up	4.25	Essential
Procedure	4.30	Essential
Primary Medical Care Mean	**4.26**	**Essential**
Community Activity		
Quit Smoking Campaign	4.25	Essential
Quit Alcohol Consumption Campaign	4.20	High Priority
Promoting a healthy diet	4.27	Essential
Promoting physical activity	4.22	Essential
Knowledge and skill for complication prevention	4.24	Essential
Community Activity Mean	**4.23**	**Essential**
Emergency Care		
Knowledge on emergency complication	4.24	Essential
Contact with health care providers	4.25	Essential
Basic Emergency Response Skill	4.26	Essential
Follow up	4.22	Essential
Emergency Care Mean	**4.24**	**Essential**
Home Visit		
Environmental Assessment	4.39	Essential
Environmental Modification	4.39	Essential
Procedure at home	4.42	Essential

Community and health care providers support	4.41	Essential
Home Visit Mean	**4.40**	**Essential**
Communication		
Communication through public broadcasting	4.23	Essential
Using simple language	4.26	Essential
Health education through appropriate media	4.22	Essential
Communication through social media	4.23	Essential
Communication Mean	**4.23**	**Essential**
OVERALL MEAN *(Nursing Services Needed)*	**4.28**	**Essential**

Legend: 4.21-5.00 Essential (E) 3.41-4.20 ; High Priority (HP) 2.61-3.40 Medium Priority (MP); 1.81-2.60 Low Priority(LP); 1.00 -1.80 Not a Priority (NP);

As to the significant relationships among the variables of the study as shown in Table 4; the non-communicable disease; cardiovascular disease was correlated with the NCD Care nursing service (p-value .041). High school graduates were correlated with emergency care (p-value .009). Those who have an income below 5000 were significantly related with the need for community activity (p-value .020) and those with hypertensive crisis were correlated with NCD care (p-value .041). The need for home visit was found to be correlated with those having normal blood pressure (p-value .030) and hypertensive crisis pressure (p-value .026). The need for communication for those with normal blood pressure was found to be correlated (p-value .036) .

As cited in the study of Peters e.al (2019); the strongest protective factors were healthy diet and physical activity, which were shown to impact risk across non-communicable diseases. High blood pressure and obesity were linked to NCDs also.

Moreover, the study of Tarek et. al (2014) revealed that smoking behavior and tobacco consumption increased the prevalence of NCDs among the university employees and this was correlated with the need for care of those with non-communicable diseases. The WHO stepwise approach emphasizes on the behavior pattern of individuals because smoking and alcohol consumption are modifiable behavioral risk factors for NCDs.

Furthermore, in the same study of Tarek, et.al, NCD prevalence was lower among those university employees who did physical activity (like walking and cycling) daily as compared to those who did not. The prevalence of obesity was 50% and NCD was highest among obese (13.3%) employees followed by overweight employees. Overweight and obesity are associated with insulin resistance and metabolic syndrome.

Insufficient physical activity is an important factor responsible for growing obesity, raised blood pressure, or hypertension in individuals. The presence of abdominal obesity correlated significantly with the prevalence of obesity with respect to waist-hip-ratio (WHR)

***Table 4. Correlation Analysis**

VARIABLES	(r)	P value	Interpretation
Cardiovascular dissease vs. NCD care nursing service	.206*	.041	Significant at the .05 level

High school graduates vs. Emergency care	-.262**	.009	Significant at the .01 level
Income below 5000 pesos vs. Need for community activity	.233*	.020	Significant at the .05 level
Hypertensive crisis vs NCD Care	-.206*	.041	Significant at the .05 level
Normal blood pressure vs Home visit	.218*	.030	Significant at the .05 level
hypertensive crisis vs home visit		.026	Significant at the .05 level
Normal blood pressure vs Communication		.036	

Conclusions:

1. Most of the respondents are described to have gout and rheumatoid arthritis.
2. Drinking alcohol has the highest frequency in terms of modifiable behavioral risk factors while high blood pressure has the highest frequency for the metabolic risk factors.
3. All the nursing services needed for the prevention and management of non-communicable diseases such as NCD care, primary medical care, community activity, emergency care, home visit and communication are found to be essential.
4. To find out the significant relationship among the variables of the study; the following conclusions are derived:

1.1 Respondents with cardiovascular diseases perceive the need for NCD care.
1.2 Respondents who are high school graduates perceive the need for an emergency care services in their community.
1.3 Respondents with the lowest monthly income tend to perceive the need for a community activity.
1.4 Those who have hypertensive crisis perceive the need for NCD care.
1.5 Both the normal blood pressure and high blood pressure groups perceive the need for a home visit being it essential to the prevention and management of non-communicable diseases.
1.6 The need for community activity is associated with their monthly income of below 5000 pesos.
1.7 Those with normal blood pressure perceive the need for communication (i.e information drive) into their community.

Recommendations

1. Community education and improvising strategies for improving awareness amongst various stakeholders is recommended. Surveillance systems by the proper authorities for NCDs to improve the prevention and control aspects. Action should be oriented toward curbing the NCD risk factors and promoting healthier lifestyles to reduce NCD incidence rates and delay the age of NCD onset.
2. The Barangay Health workers should should initiate program in health education on the prevention, management and control of non-communicable diseases in BTL.
3. There must be information drive or services available from the concerned agencies of the government to educate people in the community on the risks associated with drinking alcohol and having a high blood pressure.

4. The Barangay Health workers of Brgy. Dologon in Maramag, Bukidnon should have programs to address communicable diseases in BTL after the results of the study revealed that NCD care, primary medical care, community activity, emergency care, home visit and communication are what they badly need in the community and found to be essential.
5. Those who are high school graduates at least could be trained for emergency care.
6. There is a need for a livelihood training or program to help people in the community earn for a living or increase opportunities available to boost families' monthly income.
7. There must be an educational health program among young, middle and older adults in the community on what one needs to know about high blood pressure, high blood sugar, and the risks of smoking and drinking alcohol.
8. It is recommended that the Brgy. Health workers should precisely report incidence of non-communicable diseases through their disease monitoring since the respondents expressed the need for a home visit.
9. It is recommended that even those with normal blood pressure have expressed the need for a communication perhaps about knowing how to prevent hypertension and maintain normal blood pressure.

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