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KNOWLEDGE, ATTITUDE AND PRACTICES OF MOTHERS OF BARANGAY CALLAO, PEÑABLANCA, CAGAYAN ABOUT RABIES

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ABSTRACT

Rabies is one of the world's most neglected tropical illnesses and affects primarily the poor. As a matter of fact, although rabies is preventable, it is lethal once it is not prevented. According to recent data, 59,000 people have died as a result of rabies (56 percent in Asia) wherein there is 250-300 mortality in the Philippines alone.

In this study, the researchers employed a descriptive correlational research methodology to assess the level of knowledge, attitude, and practices of mothers aged 18-45 years old in Barangay Callao, Peñablanca, Cagayan about rabies through the use of research questionnaires.

This study found that mothers are knowledgeable, have a positive attitude, and have good practices when it comes to rabies. However, there are practices that are rarely done by the respondents such as updating the vaccination of the dogs and getting them registered and licensed by the proper authority. Nevertheless, their knowledge about rabies and their practices such as going to proper authorities like doctors/physicians and to hospitals and barangay health centers prevented them from having “tanduk” which is considered to be a traditional medicine for in rural areas is considered to be not recommended for treating rabies.

This study is anchored to the different programs related with rabies management, preventon and control. Goal number 3 of the Sustainable Development Goals, "Assure Healthy Lives and Promote Well-Being for All at All Ages," aims to ensure everyone's health and well-being by 2030, including a strong commitment to eliminating AIDS, tuberculosis, malaria, and other infectious and noncommunicable illnesses epidemics.

It also aspires to attain universal health coverage and ensure that all people have access to safe and effective medications and vaccines. Since rabies is considered to be a communicable disease, then it is also one of the diseases that the SDG aims to eradicate.

The "Anti-Rabies Act of 2007," also known as Republic Act No. 9482, is a law that provides for the control and elimination of human and animal rabies, as well as prescribing penalties for violations and allocating funds to do so. This is the law that required the establishment of the National Rabies Prevention and Control Program, which acts as one of the main pillars of the Philippines' objective to

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eradicate rabies by 2020 and to declare the country rabies-free by 2022. According to the Philippines' Official Gazette, this initiative also intends to eliminate rabies as a public health issue by eliminating indigent cases for both humans and animals.

There are certain policies and legislation that assist RA 9482's goal of eradicating rabies-related incidents.

The Batas Pambansa Bilang 97 is the law requiring livestock, poultry, and other animals to be immunized against infectious diseases. This is in collaboration with the Department of Agriculture since it requires the Secretary of the DA to make animal and poultry immunization mandatory in order to eliminate the threat or even the presence of highly contagious animal or avian diseases in a certain area.

Additionally, one of the themes of the National Unified Healh Research Agenda for 2017-2022 is the research to enhance and extend healthy lives through the prevention of the spread of the communicable diseases which includes rabies and other communicable diseases.

Key words: *Rabies, AIDS, National Unified Health Research Agenda*

INTRODUCTION

Rabies is one of the world's most common neglected tropical diseases responsible for killing over 59,000 people worldwide, wherein 56% of the occurring cases are found in Asia. However, amidst these reported cases, the lawmakers consider it insignificant, resulting in a lack of policies that support its eradication.

Although rabies is considered preventable, there is no existing treatment that can eradicate the virus. Once the rabies-infected human displays symptoms of rabies infection. Although mortality is believed unavoidable, it can be avoided if post-exposure prophylaxis is used (PEP) immediately after exposure.

As a matter of fact, the lack of attention to it results in long-lasting effects on the economy. Dog bites cause 99% of the rabies-related incidents, Therefore, one of the ways of preventing the spread of this disease is by controlling the transmission of the virus in dogs through mass dog vaccination (MDV). However, underreporting of rabies cases make the eradication of the disease difficult.

In Southeast Asia, 600 million people are thought to be at risk of contracting rabies. The Philippines is not an exemption from this kind of situation. The country has cases of endemic rabies cases with 250-300 deaths every year, wherein most of the victims were children aged 15 and below and those people who are considered to have a low quality of living.

The number of animal bite cases recorded in the United States grew by 462 percent from 2009 to 2016, according to the National Rabies Prevention and Control Program Manual 2019. According to reports,

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the number of verified positive human rabies cases grew by 13.5 percent in nine years, from 243 cases in 2009 to 276 cases in 2018.

In 2006, Cagayan Valley recorded up to 8,197 victims of animal bites with 27 deaths, 13 deaths were accounted to Cagayan. In 2008, Cagayan Valley topped with 37 rabies-related deaths. In 2013, 22 rabies-related deaths were reported in Cagayan Valley.

However, in 2020, even though Cagayan Province was placed under general community quarantine (GCQ) because of the Corona Virus Diseases (COVID-19) pandemic, the provincial health office is attending to 20-30 patients a day. According to the Provincial Health Office, the number of patients seeking vaccines in the province is rising. They also added that most of those patients were bitten while going to the market and for other reasons, such as children playing with dogs or cats in the neighborhoods.

As a matter of fact, Barangay Callao of Penablanca is no exception in this matter because they had a drastic increase of cases during this pandemic. From six cases of dog bites in 2019 to 23 cases in 2020 and another six cases of incidents from January to February 2021 only.

Therefore, the knowledge, attitude and practices survey conduct aim to provide additional information about rabies prevention and control. The goal of this study is to determine the level of knowledge, attitude, and practices among mothers of Barangay Callao, Peablanca, Cagayan on rabies.

This study is anchored to the different programs related with rabies management, preventon and control. Goal number 3 of the Sustainable Development Goals, "Assure Healthy Lives and Promote Well-Being for All at All Ages," aims to ensure everyone's health and well-being by 2030, including a strong commitment to eliminating AIDS, tuberculosis, malaria, and other infectious and noncommunicable illnesses epidemics.

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Additionally, one of the themes of the National Unified Healh Research Agenda for 2017-2022 is the research to enhance and extend healthy lives through the prevention of the spread of the communicable diseases which includes rabies and other communicable diseases.

METHODOLOGY

This chapter provides a detailed description of the research approach and design employed in this study. The following sections discuss the research design, research participants, data gathering materials, data gathering procedure, and the method of analysis that will be done in the conduct of this research.

Research Design

This study used a descriptive correlational research design in order to determine the significant difference and the relationship of the profile of the mothers in Barangay Callao, Peñablanca, Cagayan to the knowledge, attitude and practices about rabies. Thus, surveys via questionnaires were utilized during the study.

Respondents of the study

The respondents of the study were the mothers of Barangay Callao, Peñablanca, Cagayan, who are in the young adult age group specifically between 18 – 45 years old, as long as they have pet dogs at home and had experienced themselves or anyone within the family of getting bitten by a dog**.**

Data Gathering Tool

The data gathering tool used in this study was a self-structured survey questionnaire. The said questionnaires were reviewed by the thesis advisers, academic consultants, statisticians and the research coordinator of the Medical Colleges of Northern Philippines. The questionnaires were structured in English but can be translated to Tagalog or Itawes upon the request of the respondents to ensure that they can comprehend the questions for more accurate answers. The respondents were briefed before answering the survey questionnaires about the purpose of the study.
The questionnaires consist of 4 parts including questions about the respondent's profile, knowledge, attitude, and practices of the mothers. The first part is consisting of questions regarding the profile of the mothers in terms of demographic profile, socioeconomic profile, and their health-seeking behaviors.
The second part is a Likert scale with statements about their practices on rabies. These statements were rated according to their practices; 4 – always, 3 – sometimes, 2 – rarely and 1 – never.

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The third part is a Likert scale with statements about their attitude on rabies. These statements were rated according to their attitude; 4 – strongly agree, 3 – agree, 2 – disagree and 1 – strongly disagree. The third part is a Likert scale with statements about their knowledge on rabies. These statements were rated according to their level of knowledge; 4 – very knowledgeable, 3 – moderately knowledgeable, 2 – slightly knowledgeable and 1 – no knowledge at all.

Statistical Analysis

The demographic and economic profiles of the respondents were analyzed using the frequency count and percentage distribution.

Mean was used to assess the level of knowledge, attitude, and practices of the respondents while analysis of variance was used to assess whether there is a significant difference in the knowledge, attitude, and practices of the mothers on rabies when grouped according to their variables. Lastly, Pearson correlation was used to determine whether there is an association between the level of knowledge of mothers on rabies in their attitude and practices.

RESULTS AND DISCUSSIONS

This chapter presents the data gathered in tabular forms with their respective interpretation in each table.

Table 1. **The Frequency and Percentage of the Demographic Profiles of the Mothers**

Demographic Profile	Frequency	Percentage
Age		
18-21	5	14%
22-25	2	6%
26-29	8	23%
30-33	7	20%
34-37	4	11%
38-41	5	14%
42-45	4	11%
Total	35	100
Marital Status		
Single	4	11%
Married	31	89%
Total	35	100
Family Size		
2-4 members	25	71%
5-10 members	10	29%
Total	35	100
Number of dogs		
1-2	17	49%
3-5	17	49%
More than 5	1	2%

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Total	**35**	**100**
Number of children		
1-2	**25**	**71%**
3-5	**10**	**29%**
Total	**35**	**100**
Number of times bitten by a dog		
1-3	**24**	**69%**
4-6	**4**	**11%**
Never	**7**	**20%**
Total	**35**	**100**
Family members bitten by a dog		
1-2	**20**	**57%**
None	**15**	**43%**
Total	**35**	**100**
Educational Attainment		
Elementary graduate	**2**	**6%**
High school graduate	**12**	**34%**
College undergraduate	**3**	**9%**
College graduate	**11**	**31%**
Master's degree	**6**	**17%**
Doctoral	**1**	**3%**
Total	**35**	**100**

The majority of the mothers at Callao, Peñablanca are aged 26-33 years old. Most of them are married with 2-4 members in the family and have either 1-5 number of dogs at home and 1-2 children. More so, most of the respondents have been bitten by a dog either 1-3 times in which most of their family members had also been bitten either once or twice. In addition, most of the mothers were high school graduates.

Table 3. **Frequency and Percentage Distribution of the Respondents' Health Seeking Behaviors**

	Frequency	Percentage
Source		
With source	**26**	**74%**
Without source	**9**	**26%**
Total	**35**	**100**
Sources of Health information		
Internet, social media	**6**	**17%**
Internet, radio, tv, social media	**27**	**77%**
Internet, radio, tv, flyers, social media	**1**	**3%**

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Television	**1**	**3%**
Total	**35**	**100%**
Person/s whom they seek intervention		
Traditional healers	**1**	**3%**
Barangay Health Workers	**8**	**23%**
Doctors/Physician	**24**	**69%**
None	**2**	**6%**
Total	**35**	**100**
Organization/Institution		
Government Hospital	**6**	**17%**
Barangay Health Center	**21**	**60%**
Rural Health Unit	**4**	**11%**
None	**3**	**9%**
Animal Bite Center	**1**	**3%**
Total	**35**	**100**

The table shows that the respondents have sources of information related to rabies and most of them get it from the internet, radio, tv, and social media. They also seek interventions whenever they are bitten by dogs by doctors or physicians and usually go to institutions like Barangay Health Center and government hospitals.

Significant difference in the knowledge, attitude, and practices of mothers on rabies when grouped according to their profile variables

Table 4. **Difference Between the Knowledge of Mothers on Rabies When Grouped According to Profile Variables**

Profile Variables	**Etiology**		**Treatment and Management**		**Prevention and Control**		**Overall Knowledge**	
Demographic profile	**t/F**	**Sig.**	**t/F**	**Sig.**	**t/F**	**Sig.**	**t/F**	**Sig.**
Age	**.790**	**.585**	**1.264**	**.305**	**1.586**	**.188**	**1.269**	**.303**
Marital Status	**-2.267**	**.075**	**-2.392**	**.070**	**-2.487**	**.062**	**-3.726**	**.016***
Family Size	**-.452**	**.657**	**.4008**	**.528**	**.237**	**.629**	**1.323**	**.258**
No. of children	**.077**	**.940**	**-.138**	**.892**	**.000**	**1.000**	**-.681**	**.504**
No. of times bitten by dog	**.367**	**.549**	**.037**	**.848**	**.198**	**.660**	**.037**	**.848**
No. of family member bitten by dog	**.074**	**.946**	**.335**	**.766**	**.403**	**.722**	**.403**	**.722**
Educational Attainment	**.290**	**.038***	**4.396**	**.006***	**2.550**	**.060**	**1.414**	**.253**
Socioeconomic Profile								

Religion	**2.609**	**.014***	**1.359**	**.184**	**1.561**	**.129**	**1.359**	**.184**
Employment status	**1.677**	**.107**	**2.227**	**.033**	**2.615**	**.014***	**1.489**	**.149**
Income	**1.866**	**.131**	**2.694**	**.041***	**3.420**	**.015***	**1.320**	**.283**
Membership in health organization	**1.789**	**.086**	**2.004**	**.056**	**1.804**	**.083**	**.797**	**.432**
Health Seeking Behavior								
Sources of information	**.466**	**.648**	**1.720**	**.111**	**1.243**	**.239**	**1.720**	**.111**
Person to seek attention	**3.792**	**.020***	**.659**	**.583**	**1.941**	**.143**	**1.669**	**.194**
Place to seek intervention	**.693**	**.603**	**1.105**	**.372**	**1.045**	**.400**	**1.105**	**.372**

NOTE: A p-value less than 0.05 (typically ≤ 0.05) is statistically significant.

The table indicates the result of the test of difference regarding the knowledge of the respondents on rabies when grouped according to their profile variables.

The marital status of the respondents affects their overall knowledge. Being married made the respondents become more knowledgeable about health issues and concerns because they have someone who supports them in handling matters such as dogs and rabies while unmarried respondents such as those who have live-in partners have priorities compared to married respondents like studying since they are still students with children.

Educational attainment and employment status also affect their knowledge. The higher the educational attainment and being employed means they have more chances of encountering information about rabies.

The difference is who is the person to seek attention when bitten by a dog affects the knowledge of the mothers in pathogenesis because most of them seek medical attention from doctors/physicians wherein the respondents are more likely to gain information from them during their visit.

This supports that marital status, educational attainment, employment status, income, and the practice of a person to seek attention when bitten by a dog affect specific well as overall knowledge of the respondents on rabies**.**

Table 5. **The Difference Between the Attitudes of Mothers on Rabies When Grouped According to Profile Variables**

Profile Variables	**Treatment and Management**		**Prevention and Control**		**Overall Attitude**	
Demographic profile	**t/F**	**Sig.**	**t/F**	**Sig.**	**t/F**	**Sig.**
Age	**.909**	**.503**	**1.332**	**.276**	**1.229**	**.321**
Marital Status	**-2.794**	**.009***	**-.481**	**.658**	**-.985**	**.379**
Family Size	**1.750**	**.195**	**.291**	**.593**	**.009**	**.926**
No. of children	**-.548**	**.591**	**-.548**	**.591**	**.098**	**.923**
No. of times bitten by dog	**.990**	**.327**	**.155**	**.897**	**.029**	**.865**

No. of family member bitten by dog	**3.361**	**.003***	**-.077**	**.945**	**.651**	**.572**
Educational Attainment	**2.803**	**.043***	**3.601**	**.032***	**1.458**	**.239**
Socioeconomic Profile						
Religion	**2.784**	**.009***	**-.121**	**.914**	**.479**	**.673**
Employment status	**-.493**	**.628**	**2.013**	**.054**	**.098**	**.923**
Income	**.227**	**.948**	**.971**	**.452**	**.790**	**.565**
Membership in health organization	**-.893**	**.387**	**.548**	**.591**	**-.493**	**.630**
Health Seeking Behavior						
Sources of information	**3.126**	**.005***	**2.105**	**.056**	**2.264**	**.043***
Person to seek attention	**.221**	**.881**	**2.023**	**.131**	**.908**	**.448**
Place to seek intervention	**1.484**	**.232**	**2.755**	**.046***	**2.224**	**.090**

NOTE: A p-value less than 0.05 (typically ≤ 0.05) is statistically significant.

The table indicates the result on test of difference regarding the attitudes of the respondents on rabies when grouped according to their profile variables.

Marital status affects their attitude on treatment and management since it also directly affects their knowledge on treatment and management.

The number of family member bitten by a dog affects their attitude under treatment and management since the repeated experience of a dog bite can make them become more careful the next time they encounter such an incident.

Educational attainment and religion also affect their attitude under treatment and management and prevention and control because they encounter more information about rabies in school.

Existing source of information on rabies affects their attitude because the source they encountered has changed their view on how to react towards rabies specifically on its treatment and management.

The place to seek attention when bitten by a dog has affected the attitude of the respondents on prevention and control because of the knowledge they gain during their visit to doctors and physicians.

In general, this also indicates that marital status, no. of family member bitten by a dog, educational attainment, religion, existing source of information, and place to seek attention practices of the respondents affect the attitudes of the respondents regarding rabies.

Table 6. **The Difference Between the Practices of Mothers on Rabies When Grouped According to Profile Variables**

Profile Variables	**Treatment and Management**		**Prevention and Control**		**Overall Practice**	
Demographic profile	**t/F**	**Sig.**	**t/F**	**Sig.**	**t/F**	**Sig.**
Age	**1.163**	**.354**	**1.318**	**.282**	**1.928**	**.111**
Marital Status	**-.571**	**.572**	**-2.526**	**.053**	**-.924**	**.407**
Family Size	**.072**	**.791**	**4.626**	**.039***	**.711**	**.405**
No. of children	**-.233**	**.819**	**-2.236**	**.038***	**-.711**	**.491**
No. of times bitten by dog	**1.558**	**.221**	**.101**	**.753**	**.065**	**.801**

No. of family member bitten by dog	**.000**	**1.000**	**-2.425**	**.105**	**-1.297**	**.305**
Educational Attainment	**1.616**	**.196**	**1.004**	**.421**	**1.527**	**.219**
Socioeconomic Profile						
Religion	**1.223**	**.327**	**.556**	**.558**	**.958**	**.425**
Employment status	**.798**	**.433**	**.567**	**.578**	**.771**	**.451**
Income	**.647**	**.666**	**2.403**	**.061**	**1.306**	**.289**
Membership in health organization	**-.289**	**.777**	**.059**	**.954**	**.146**	**.886**
Health Seeking Behavior						
Sources of information	**.980**	**.344**	**4.464**	**.001***	**1.386**	**.182**
Person to seek attention	**.874**	**.465**	**.991**	**.410**	**.638**	**.596**
Place to seek Intervention	**1.931**	**.131`**	**1.527**	**.309**	**2.801**	**.043***

NOTE: A p-value less than 0.05 (typically ≤ 0.05) is statistically significant.

The table indicates the result on test of difference regarding the practices of the respondents on rabies when grouped according to their profile variables.

Family size and number of children affect the practices of the respondents on prevention because as both increase, the responsibility of the mother also increases considering that there are more children to look for making her more experienced in handling dogs and rabies cases.

Sources of information affect the practices of the respondents on prevention and control because it can increase the knowledge of the respondents which can also enhance their practices.

The place to seek intervention and the latter becomes an avenue for the respondents to bitten by a dog also affect the practices of the respondents on prevention and control become exposed to the different information that is found in the facilities they go to when they are bitten by dogs such as the visual aids that are seen in the barangay health centers and other places like government hospitals and Rural Health Unit.

In general, this result also indicates that family size, number of children, source of information, and practice of place to seek intervention when bitten by a dog affects the practices of respondents.

Relationship between the level of knowledge of mothers on rabies on their attitude and practices

Variables	**Attitudes**						**Practices**					
Knowledge	**Treatment and Management**		**Prevention and Control**		**Overall Attitude**		**Treatment and Management**		**Prevention and Control**		**Overall Practice**	
	r	**Sig.**	**r**	**Sig.**	**r**	**Sig.**	**r**	**Sig.**	**r**	**Sig.**	**r**	**Sig.**
Etiology	**.124**	**.487**	**.007**	**.967**	**.266**	**.122**	**.095**	**.587**	**.176**	**.312**	**.239**	**.167**
Treatment and	**.211**	**.223**	**.340**	**.046***	**.426**	**.011***	**.177**	**.309**	**.295**	**.085**	**.220**	**.204**

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Management												
Prevention and Control	**.348**	**.041***	**.442**	**.008***	**.524**	**.001***	**.105**	**.549**	**.245**	**.156**	**.150**	**.390**
Overall knowledge	**.372**	**.028***	**.340**	**.046***	**.566**	**.000***	**.177**	**.309**	**399**	**.018***	**.289**	**.092**
Practices												
Treatment and Management	**.461**	**.005***	**.468**	**.005***	**.447**	**.007***						
Prevention and Control	**.380**	**.024***	**.436**	**.009***	**.278**	**.106**						
Overall Practice	**.534**	**.001***	**.617**	**.000***	**.505**	**.002***						

Table 11. The Relationship of Knowledge to the Attitude and Practices of Mothers on RabiesRange (r) (Ratner, B., 2009)	**Interpretation (Ratner, B., 2009)**
.30 and below	**Weak Relationship**
.31-70	**Moderate Relationship**
.71 and above	**Strong Relationship**
1.00	**Perfect Relationship**

The table above shows the relationship between the specific categories and overall knowledge, attitude, and practices of the respondents on rabies.
Using Pearson r Correlation, positive moderate relationships are supported under knowledge and attitude.
Moreover, knowledge is also positive and moderately correlated to the practice of the respondents.
This result indicates that the knowledge of the respondents on rabies affects their attitude and practices on rabies. Therefore, when the knowledge of the mothers will increase, their attitude and practices also increase. If their knowledge decreases, their attitude and practices also decrease.
In general, the knowledge, attitude, and practices of the respondents on rabies are directly associated thus implying that increase or decrease of one directly means a direct increase or decrease of the other two variables.

CONCLUSION

With careful analysis of the findings of this study, it is being concluded that the mothers at Callao, Peñablanca, and Cagayan are highly knowledgeable about rabies and they have a good attitude and practices regarding treatment and management as well as prevention and control of rabies and that knowledge, attitudes and practices on rabies, are directly associated which implies that increase or decrease of one directly means a direct increase or decrease of the other two variables.

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RECOMMENDATIONS

Based on the results of this study the following are recommended:

- The barangay officials should strengthen their policies regarding caring for dogs and have contingency plans in case of emergencies or crises such as pandemics in order to lessen the sudden spike in the number of dog-related incidents.
- The Local Government Unit must implement the rules and regulations under the R.A. 9482 or Anti Rabies Act of 2007 in order for the different policies to be followed strictly by its constituents such as the legalities of having pets such as the licensing and registration of dogs, vaccination campaigns and the responsibilities of a dog-owners.
- The researchers recommend to future researchers conduct an interview with the respondents in order to have a better assessment of their answers to the survey questionnaires. More respondents must also participate in the study in order to have a more generalized response from the data collected.

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