

Health-Seeking Behavior of Dog Bite Patients in Agricultural Municipalities in Ilocos Sur, Philippines

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<p>KEYWORDS</p> <p>Consultation, health facility, health workers, dog bites patients, Animal Bite Centers</p>	<p>ABSTRACT</p> <p>Introduction: Health-seeking behavior in dog bite patients refers to individuals' choices in seeking medical care based on factors like injury severity and healthcare access. There are common barriers to seeking health care, such as inaccessibility of health facilities and insufficient money to buy a vaccine. Hence, a study on the health-seeking behavior of dog bite patients is believed to provide additional information to health workers so that they can conduct programs and activities to improve or enhance the health-seeking behavior of the people.</p> <p>Objectives: The study dealt with the health-seeking behavior of dog bite patients in the three selected municipalities in the first and second districts of Ilocos Sur for the Calendar Year 2021. It determined the relationship between the health-seeking behavior and the socio-demographic and dog bite-related factors of the respondents.</p> <p>Methods: The study used the descriptive-correlational method of research. All 129 dog bite patients from the municipalities of Santa, Santo Domingo, and Magsingal for the period January to July 2021 served as the study's respondents.</p> <p>Results: The respondents' health-seeking behavior was described as Good. Among the three key indicators, perceived susceptibility obtained the highest mean rating, indicating strong awareness of their vulnerability to health risks. While no significant correlations were observed between most socio-demographic factors and health-seeking behavior, family membership classification and age showed significant relationships with overall health-seeking behavior.</p> <p>Conclusions: The level of health-seeking behavior results from the respondents' adherence to the health workers' advice in the animal bite center where they sought consultation. Health workers must always conduct health education in routine follow-ups, focusing on the benefit of proper wound care for dog bites and receiving prescribed immunizations to improve health-seeking behavior. The Animal Bite Centers are encouraged monitor and encourage the community to ensure compliance with the vaccination of dogs and dog bite patients.</p>
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1. Introduction

Dog bites are prevalent in the Philippines and are the most common way of spreading rabies infection. Studies reveal that dogs cause 76–94% of animal bite injuries. Fatality rates from dog bites are higher in low- and middle-income countries than in high-income countries, as rabies is a problem in many countries, and there may be a lack of post-exposure treatment and appropriate access to health care. An estimated 59,000 people die annually from rabies, and bites from rabid dogs account for most of these deaths [1].

There are no global estimates of dog bite incidence; however, studies propose that dog bites account for tens of millions of injuries annually. For example, in the United States of America, around 4.5 million people are bitten by dogs every year. Of these, approximately 885,000 seek medical care; 30,000 have reconstructive procedures; 3–18% develop infections, and between 10 and 20 fatalities occur. [1].

In the Philippines, which currently ranks fourth worldwide in the incidence of rabies, cases are still increasing despite the government's promises to rid the country of the problem by 2020. There are 362 Filipinos who died of rabies, compared with 321 in 1997 and 337 in 1996. About 10000 dogs are believed to be infected with the disease each year [2].

In the province of Ilocos Sur, in 2020, the top five municipalities regarding dog bites are Vigan City (1,196), Candon City (705), Sta. Cruz (549), Narvacan (453), and Cervantes (394). These data are obtained from the records filed at the Provincial Health Office.

Dog bites are the primary source of rabies infection and death in humans, contributing to up to 99% of all recorded cases, making them the primary source of rabies infection and death in humans. For every rabies infection, the possibility of getting cured is zero, as it is 99.9 percent fatal [3].

Despite the implementation of the rabies prevention and control program, dog bite patients would still seek the help of traditional healers named "*man-nandok*". It is cheaper and more accessible than going to a health facility. The patient would no longer seek further treatment from health institutions for this. Others believe that they do not need to consult immediately since they perceive that their dog bite is not severe since it is located below the heart level and is not bleeding. Some also believe it is safe because they own the biting dog and are vaccinated. Some may observe the biting animal first for signs and symptoms of rabies before submitting themselves for consultation.

Compliance with universal/standard precautions, thus, becomes an important issue, and determining the reasons for failure to comply with universal precautions becomes a vital priority [4]. Although one can provide first aid for a dog bite at home, it's vital to see a doctor, especially if bitten by an unfamiliar dog, the bite is deep, you can't stop the bleeding, or there are any signs of infection (redness, swelling, warmth, pus). Dog bites can cause infections that need to be treated with antibiotics [5].

There are also observed barriers to seeking health care, such as inaccessibility of health facilities and insufficient money to buy a vaccine since vaccines are unavailable in animal bite centers. Some do not have any medical insurance to use when availing of the services offered at the health facility.

A study on the health-seeking behavior of dog bite patients is believed to provide additional information to health workers so that they can conduct programs and activities to improve or enhance the health-seeking behavior of the people. The study contributes to treating dog bites properly, which may help a rabies-free community. The study may also create an avenue for awareness of dog bites management. For the academe, the College of Health Sciences should integrate the discussion of health-seeking behavior favorable to the immediate care of dog bites into their curricula.

2. Objectives

The study dealt with the health-seeking behavior of dog bite patients in the three selected agricultural municipalities in the first and second districts of Ilocos Sur for the Calendar Year 2021.

Specifically, the study sought to: 1) Describe the profile of the respondents in terms of socio-demographics such as classifications as to family membership, age, sex, monthly family income, and place of residence; and the dog-bite-related factors which include site of a dog bite, type of wounds, pet ownership, received the vaccination, and dog status after the bite incidence; 2) Determine the level of health-seeking behavior of the respondents regarding

perceived susceptibility, perceived benefits, and perceived barriers; and 3) Determine the significant relationship between the level of health-seeking behavior, the respondents' profile, and dog bite-related factors.

3. Methods

Study design. The research employed a descriptive-correlational design. It described the level of health-seeking behavior, the profile of the respondents, and the dog bite-related factors. It also described the relationship between the level of health-seeking behavior with the profile of the respondents and the dog bite-related factors.

Data Collection. Before the data gathering, the researchers conducted a preliminary survey to determine the patient-respondents from January to July 2021 at the animal bite centers. Before the data gathering, the researchers asked permission from the head/staff of the animal bite center to look into their records. Permission was also sought from the barangay captains from where the respondents reside. The respondents were reached out in their dwellings for the researchers to float the questionnaire. The study utilized a questionnaire-checklist as the primary data-gathering tool. The researchers formulated it, and a pool of experts with a validity index of 1.0 validated its content. The other respondents were contacted by phone due to COVID-19 restrictions with the help of the Animal Bite Center staff.

Study Sampling. The study respondents are 129 dog bite patients seeking consultation at the Ilocos Sur District Hospital- Narvacan Animal Bite Center and the Sto. Domingo Animal Bite Center from the municipalities of Santa, Sto. Domingo and Magsingal, Ilocos Sur for January – July 2021 regardless of age. For minor respondents, the parents answered the questionnaire.

Ethical Approval. Ethical considerations are observed in the conduct of the study to protect the respondents' rights and privileges. The Ethics Review Committee approved the conduct of the study at the University of Northern Philippines with an ERC Approval number.

Statistical Analysis. The researcher used the following statistical tools: Frequency and percentage to determine the profile of the respondents. Mean to measure the level of health-seeking behavior. The Simple Linear Correlation analysis to determine the relationship between the level of health-seeking behavior and the profile of the respondents.

4. Results and Discussion

4.1 Profile of the Respondents

A great percentage of the respondents (31.01 %) are the " sons" of the family, are 11-20 years old (38.76%), with a monthly family income of 10,001 – 20,000 (36.43%), the majority (51.94%) are males, and most (89.15%) are from the barangays.

Half of the respondents (50.39 %) had been bitten on the upper limb, the majority (83 or 64.34%) were punctured due to the dog bite, were bitten by their dog (55.04%), most (88. 37%) of the biting dogs have not received immunization and were alive after biting the patients (93.02%). The data imply that the respondents are fond of pets but not religious in submitting their pets to rabies immunization. However, their dogs seemed not to have been infected with the rabies virus since they were alive after biting their owners.

4.2 Health-Seeking Behavior of the Respondents

Table 1 presents the level of health-seeking behavior among the respondents, categorized as *Good*. Among the three key indicators, perceived susceptibility garnered the highest mean rating, suggesting that respondents are highly aware of their vulnerability to health risks. Conversely, perceived benefits received the lowest mean rating, indicating a comparatively lower recognition of the advantages of proactive health measures.

Table 1. Summary of the Level of Health-Seeking Behavior of the Respondents

Health-Seeking Behavior	Mean	Interpretation
a. Perceived Susceptibility	4.83	Very Good
b. Perceived Benefits	3.64	Good
c. Perceived Barriers	4.18	Good
Overall	4.14	Good

Legend:

Mean Range	Interpretation
4.21 – 5.00	Very Good
3.41 – 4.20	Good
2.61 – 3.40	Moderate
1.81 – 2.60	Poor
1.00 – 1.80	Very Poor

Perceived Susceptibility. The respondents' level of health-seeking behavior in terms of perceived susceptibility is Very Good, with a mean rating of 4.83. The data means that the respondents view themselves as susceptible, making them seek consultation and treatment at the animal bite centers. This result is supported by the respondents' responses that they always go for consultation and treatment if there is bleeding after being bitten by a dog if bitten in any part, if bitten by a dog who manifests any signs and symptoms of rabies, and if bitten by an old dog, which is believed to have rabies.

This practice conforms with the health belief model, which says that people who believe they are at risk tend to change or improve their behaviors toward health maintenance. Moreover, according to the HBM, perceived susceptibility to illness is an essential predictor of preventive health behaviors [6].

Many respondents believed that scratches caused by animals and contact with rabid dog saliva over broken skin do not constitute a risk of rabies transmission. Overall, 82% of the victims sought Post post-exposure prophylaxis (PEP) from the hospitals 24 hours after exposure [7]. Most respondents reported to the hospital for animal bite wound treatment, which means they have excellent treatment behaviors [8]. Lastly, the proximity of the hospitals in the urban areas has improved PEP adherence [9].

Perceived_Benefits. The respondents' level of health-seeking behavior regarding perceived benefits is Good. The respondents believe in the benefits of adhering to healthy practices in the management of dog bites. The data is connected to the HBM theory, which states that people change behavior if they get something in return, which is advantageous for them [6]. Further, the model defines the key factors that influence health behaviors as an individual's perceived threat to sickness or disease (perceived susceptibility), the belief of consequence (perceived severity), potential positive benefits of action (perceived benefits),

perceived barriers to action, exposure to factors that prompt action (cues to action), and confidence in the ability to succeed (self-efficacy) [10].

Furthermore, their good behavior and perceived benefits are attributed to always consulting the nearest Animal Bite Center/ health facility because they have a readily available anti-rabies vaccine and other treatments for dog bites. They also consult health workers because of their specialized knowledge/ expertise/ training. Because of the influence of these health workers, they never used herbs like oregano to treat dog bites. This is supported by further data gathered in this study that nearly half of the patients had applied substances that were not recommended, e.g., herbs (47/193), antiseptics (46/193), "black stone" (25/193), and unknown creams (10/193) [11].

Of the study participants, 129 (35.8%) did not resort to any household remedy following an animal bite. In contrast, the rest of the study participants had resorted to applying antiseptics or natural homemade pastes as a method of first aid/pretreatment practice before coming to the hospital [12]. Out of the community participants, only 29 percent washed the dog bite site/scratched immediately with soap and water. However, only 49 percent of them felt that it is crucial to consult a physician and receive a post-exposure vaccine as the first line of treatment following animal exposure [13]. After an animal bite, most people preferred to wash the wound with soap and water before going anywhere, and almost all people went to the healthcare system for their treatment [14].

The respondents' practice of consulting the nearest Animal Bite Center/ health facility because they have a readily available anti-rabies vaccine and other treatment for dog bites, conforms with the idea of the perceived benefits of the Health Belief Model that people might not get vaccinated if they do not think there is an individual benefit for them. These perceived benefits are often linked to other factors, including the perceived effectiveness of a behavior [6].

Meanwhile, their practice that they consult the Animal Bite Center/ health facility for immediate management of dog bites because of their accessibility conforms with the belief that bite victims who did not know or report the closest location where PEP could be received were less likely to seek medical care ($p = 0.05$) [15].

Perceived Barriers. The respondents' level of health-seeking behavior along perceived barriers is Good, with a mean rating of 4.18. The result of the study means that the respondents perceive the barriers to be easy to deal with, which makes them willing to engage in healthy behaviors. These agree with the HBM, which states that people do not change their behavior because of their views as it is difficult due to some factors [6].

Based on the individual items that measure their behavior along perceived barriers, the respondents never waited for the signs and symptoms to worsen before seeking consultation and also never waited for the signs and symptoms of rabies to occur. They also completed the required number of anti-rabies vaccine doses if the biting dog exhibited signs of rabies within 10 days.

These findings of the present study agree with the statement that the risk of rabies infection is low if the biting animal is normal. Dog bite patients discontinued consultation or PEP when the biting animal remained healthy after ten days of observation [7].

On the other hand, it contradicts the findings in a previous study wherein the health-seeking behavior of the exposed was unsatisfactory. Some visited nonallopathic/local practitioners/traditional healers/consulted veterinarians/Auxiliary Nursing Midwifery/others before coming to a healthcare facility [16].

4.3 Relationship Between Health Seeking Behavior and Respondents' Profile. Table 2 presents the significant relationship between the level of health-seeking behavior and the profile of the respondents and dog-bite-related factors.

Table 2. Correlation Coefficients of the Level of Health-Seeking Behavior and the Profile of the Respondents and Dog-Bite-Related Factors

	Susceptibility (r)	Benefits (r)	Barriers (r)	Overall (r)
A. Socio-demographic Factors				
Classifications as to family membership	-0.155	0.023	-0.310*	-0.286*
Age	-0.136	-0.051	-0.246**	-0.262**
Sex	0.110	0.059	0.045	0.104
Monthly family income	0.089	0.083	-0.176*	-0.058
Place of Residence	0.078	0.003	0.184*	0.172
B. Dog Bite-related Factors				
Site of Dog Bite	0.071	-0.057	0.139	0.111
Types of Wounds	-0.037	-0.316*	0.115	-0.036
Pet ownership	0.013	-0.124	-0.050	-0.012
Received Vaccination	-0.104	-0.207*	0.030	-0.111
Dog status after the bite incidence	-0.023	0.120	0.101	0.136

*. Correlation is significant at the 0.01 level (2-tailed)

** Correlation is significant at 0.05 level (2 tailed)

Socio-demographic Factors. Classification as to family members is significantly correlated with the respondents' overall level of health-seeking behavior ($r = -0.286$). This means that patients classified as fathers tend to have poorer health-seeking behavior than other patients classified as mothers, daughters, or sons. This data suggests that if the dog bite patients are sons and daughters, they tend to have a very good level of health-seeking behavior since they are more worried about their situation because of lesser life experience with dog bites. Furthermore, fathers are the family's breadwinners and tend to spend most of their time earning a living. Men have less good self-care practice or health-seeking behavior toward COVID-19 than women [17].

Age is also significantly correlated with the respondents' overall level of health-seeking behavior ($r = 0.262$). This finding suggests that older respondents tend to have poorer levels of health-seeking behavior than younger ones. The result of this present study agrees with a previous finding wherein factors negatively associated with compliance included being 15 years or older [11].

The result of the present study contradicts findings that older adults are likely to have better practices than younger people [17]. People who practiced social isolation as a social

commitment were younger. This finding opens an exciting scenario of the pandemic in Brazil, where the younger with access to scientific information also displayed more outstanding social commitment and pro-social behaviors in the face of the pandemic [18].

Monthly family income, has a significant relationship with the perceived barriers to seeking health care ($r = -0.176$). Dog bite patients with lower monthly family income tend to have very good levels of health seeking. The data may be attributed to the fact that poorer respondents tend to be more worried about their health condition because fewer resources prompt them to seek consultation immediately to avoid complications that may arise when certain illnesses are not treated promptly. This finding contradicts a previous study's findings that those with higher income are more compliant with treatment because they can afford to attend the health center regularly [19].

The result of the present study is also contradicted by the finding of a previous study, wherein they found a significant relationship between health-seeking behaviors and barriers to healthcare access, such as time constraints to social structure and perception as to severity of illness; and financial considerations to perception as to severity of illness [20].

Place of residence is also significantly related to the perceived barriers in seeking health care ($r = -0.184$). This result agrees with the findings that the respondents living in town-proper areas were more likely to complete the prescribed PEP course than those from the barangays [2].

Other socio-demographic variables like sex failed to attain significance at 0.05 probability level. The findings of the current study are contrary to the findings in another study that victims who are male were less likely to seek PEP [11].

On the Dog-Bite -Related Factors. There is no significant relationship between the overall level of health-seeking behavior and dog-bite-related factors.

The current study's outcome contradicts the previous study's findings that the risk of rabies infection was shallow if the animal-bite wound was minor; hence, there is no need to seek health care [7]. Common reasons for not seeking health care included assumptions that risks of infection were minor if bitten by an owned or vaccinated dog [3].

Taken singly, the type of wound ($r = -.316^*$) and vaccination received ($r = -0.207^*$) are significantly correlated to the perceived benefits. This data means that when the wound is classified as hematoma and with vaccination received by the dog, the level of health seeking is lower since the respondents perceived that hematoma is not that severe and since the dog has received vaccination.

Other dog bite-related factors, such as the site of a dog bite, pet ownership, and dog status after the bite incidence, failed to attain significance. This data negates the outcome of a particular study wherein the perception that the dog was sick was positively associated with compliance [11].

5. CONCLUSIONS

The good health-seeking behavior results from the respondents' adherence to the health workers' advice in the animal bite center where they sought consultation. The younger mothers,

daughters, and son-respondents had good health-seeking behavior. Dog bite-related factors were not related to the respondents' health-seeking behavior.

Health workers must always conduct health education in routine follow-ups, focusing on the benefit of proper wound care for dog bites and receiving prescribed immunizations to improve health-seeking behavior. The Animal Bite Centers shall make the anti-rabies vaccines continuously available and give them free of charge so they can continue their post-exposure prophylaxis. There shall be continuous monitoring and encouragement by the community health care providers to ensure compliance with the vaccination of dogs and dog bite patients. The College of Health Sciences at the University that offers health-related programs should include in the curriculum the topics of first aid for dog bites and their risks, complications, and management. The college and the university should conduct extension programs to disseminate and create awareness of rabies within the community.

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