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Adherence to Post-Exposure Prophylaxis in an Animal Bite Clinic in the Selected Infirmary Government Hospital in Candelaria, Quezon Province: A Retrospective Analysis

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ABSTRACT

Rabies is a fatal yet preventable disease, with post-exposure prophylaxis (PEP) playing a crucial role in preventing infection after an animal bite. However, adherence to the full PEP regimen remains a challenge, particularly in resource-limited settings. This study aims to assess adherence to PEP among animal bite patients at a selected infirmary government hospital in Candelaria, Quezon Province, from 2022 to 2024.

A retrospective design was used, analyzing 350 systematically sampled patient records. Variables examined included demographic profile, bite category, source of bite, and completion of the PEP regimen. Descriptive statistics summarized adherence levels, with results compared to findings in existing literature.

Findings showed that 70.6% of patients completed the recommended three-dose PEP regimen, while 29.4% did not. Children below 10 years old comprised the most affected age group (30.3%), and females represented the majority of cases (54.6%). Most bites were from dogs (51.7%) and cats (48.0%), with Category III bites being most common (70.6%). Key barriers to adherence included financial constraints, vaccine availability, and the burden of multiple hospital visits.

The study underscores the need for targeted interventions to improve PEP adherence. Recommendations include intensified community education, enhanced vaccine supply, financial support for travel, and deployment of mobile vaccination units. Strengthening these measures is vital to achieving full PEP compliance and reducing rabies-related mortality in vulnerable communities.

Keywords: *rabies, post-exposure prophylaxis, adherence, animal bite, vaccine compliance, public health*

1. INTRODUCTION

Background of the Study

Rabies continues to be a major public health concern globally, particularly in low- and middle-income countries where dog-mediated rabies remains widespread. According to the World Health Organization (2023), rabies causes an estimated 59,000 human deaths annually, with most cases occurring in Asia and Africa. The disease is entirely preventable through timely and complete administration of Post-Exposure Prophylaxis (PEP), which includes immediate wound care, a series of rabies vaccinations, and, in certain cases, rabies immunoglobulin. Despite its efficacy, adherence to the full PEP regimen remains inconsistent, primarily due to a range of socioeconomic, logistical, and informational barriers (Chuchu et al., 2023; Tran et al., 2020).

In the Philippines, rabies remains a notifiable disease. The Department of Health (DOH, 2023) reported over 300 human deaths from rabies annually, even with the availability of free anti-rabies vaccines at government-accredited Animal Bite Treatment Centers (ABTCs). The Philippine government has established over 700 ABTCs across the country to provide access to PEP services (DOH, 2024). However, several challenges remain, including vaccine shortages, distance from treatment centers, and low public awareness. Socioeconomic limitations such as transportation costs, wage loss, and misconceptions about the disease further hinder treatment completion—especially in underserved rural areas (Amparo et al., 2022).

Research in similar settings has shown that interventions like SMS reminders and community-based follow-ups can improve adherence (Chuchu et al., 2023), while inconsistent healthcare practices and patient trust issues have been found to negatively affect outcomes (Kisaka et al., 2021). These findings suggest that addressing structural, behavioral, and health system-related factors is key to improving compliance.

This study was prompted by the researcher's own experience working in a government infirmary hospital in Candelaria, Quezon, where a high volume of animal bite cases was observed. Over time, the researcher became curious about the patterns of patient behavior—particularly why many patients failed to complete their PEP regimen despite the accessibility of vaccines. This concern intensified upon reviewing records from 2022 to 2024, where several

patients either delayed follow-up visits or failed to return at all. This real-world observation raised important questions about the underlying barriers to PEP adherence in local healthcare settings.

Given the rising number of animal bite incidents and the persistent threat of rabies in the province, there is an urgent need to analyze adherence behavior among patients and evaluate how healthcare delivery systems can be strengthened to support treatment compliance. The findings of this study aim to support rabies prevention programs, provide recommendations to improve patient outcomes, and contribute to the national goal of achieving zero human rabies by 2030 (DOH, 2023; WHO, 2023).

Literature Review

Foreign Literature

Rabies remains a critical global public health threat, with Post-Exposure Prophylaxis (PEP) serving as the most effective intervention for preventing the onset of rabies following exposure to potentially infected animals. Several recent studies from 2020 to 2025 have analyzed factors influencing adherence to PEP, such as accessibility to health services, patient awareness, affordability, and efficiency of healthcare systems.

Chuchu et al. (2023) examined the effect of mobile phone text message reminders on PEP compliance in Kenya. Their study showed that timely reminders significantly increased the completion rate of the rabies vaccination regimen. Hampson et al. (2021) highlighted the importance of risk-based assessments in PEP administration, advocating for improved triaging systems to optimize the use of limited vaccine resources.

Le et al. (2022) reported vaccine stock-outs, travel barriers, and misconceptions about rabies as major causes of non-compliance in Vietnam. These challenges were more pronounced in rural communities, reinforcing the need for decentralized rabies prevention programs and community engagement.

Kazi et al. (2021) proposed that digital health tools, including mobile health platforms and SMS scheduling systems, could enhance adherence and reduce dropout rates. Likewise, Hampson et al. (2021) emphasized that strengthening vaccine delivery systems, particularly in endemic regions, remains key to achieving effective rabies control.

These studies collectively underscore the importance of multifaceted interventions—improving health literacy, ensuring uninterrupted vaccine supply, and enhancing healthcare delivery systems—to improve PEP adherence globally.

Local Literature

In the Philippine context, rabies remains a persistent public health problem, particularly in regions with high stray animal populations and limited access to medical services. The Department of Health (DOH, 2022) classifies rabies as a priority notifiable disease and continues to implement the National Rabies Prevention and Control Program (NRPCP), offering free PEP through selected public healthcare facilities.

Amparo et al. (2020) conducted a systematic review on rabies in the Philippines and found that treatment delays, non-adherence, and logistical challenges were common, especially in rural areas. Reyes et al. (2021) further revealed that only 65% of patients in government-run Animal Bite Treatment Centers completed their prescribed PEP schedule. Key factors contributing to low adherence included transportation barriers, fear of vaccine side effects, financial hardship, and a lack of patient education.

The Department of Health (2023) and internal reports from the San Lazaro Hospital Animal Bite Treatment Center confirm that PEP completion remains a challenge. Commonly cited issues include inconsistent vaccine availability, long waiting times, and inadequate risk communication. Garcia et al. (2022) added that healthcare providers in government infirmary hospitals often experience challenges such as vaccine stockouts, absence of digital tracking systems, and understaffing, all of which hinder effective PEP delivery.

Delos Reyes et al. (2021) conducted a study in Quezon Province and found that geographical isolation and limited public transportation contributed to missed follow-ups and incomplete vaccination. Their findings support the need for community-based health education and logistical interventions to improve vaccine reach in remote barangays.

While private Animal Bite Centers (ABCs) have expanded across urban areas, they are often inaccessible to economically disadvantaged patients due to high costs. The DOH (2024) has emphasized the need for stronger public-private coordination to ensure that essential vaccines like PVRV and RIG remain accessible to vulnerable groups.

Based on the researcher's personal experience as a licensed pharmacist at a government infirmary hospital in Candelaria, Quezon, significant gaps remain in PEP implementation at the local level. From 2022 to 2024, recurring challenges included vaccine stockouts during peak periods, delayed procurement, and lack of cold chain capacity. These gaps frequently force patients to delay their PEP schedule or seek care from private centers, increasing dropout risk.

The role of the pharmacist is pivotal in ensuring proper vaccine storage, maintaining accurate inventory, and providing patient counseling. However, logistical limitations and inconsistent vaccine supply remain major barriers. Additionally, the absence of digital monitoring systems and weak inter-facility coordination hinder timely follow-up and patient tracking.

This study seeks to evaluate PEP adherence among patients in a government-run infirmary hospital in Candelaria, Quezon. By focusing on vaccine access, follow-up mechanisms, and the pharmacist's role in medication logistics, the study aims to provide evidence-based recommendations to strengthen local rabies prevention efforts and support the national goal of zero human rabies by 2030.

Theoretical Framework

The study is supported by several theoretical models that explain adherence to post-exposure prophylaxis (PEP) in the context of rabies prevention. These theories provide a comprehensive understanding of the factors influencing patient compliance and healthcare system efficiency in delivering PEP services in a government infirmary hospital setting.

The Health Belief Model (HBM) by Rosenstock (1974) serves as a primary framework for this study. The HBM suggests that an individual's health-related behaviors are influenced by perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. In the context of rabies exposure, the decision to complete the PEP regimen depends on the patient's perception of the seriousness of rabies, the effectiveness of the vaccine, and the challenges they face in accessing healthcare facilities. According to Glanz et al. (2015), patients are more likely to adhere to treatment when they believe that the benefits outweigh the barriers. This model provides insight into why some individuals fail to complete the PEP series despite the availability of free vaccination programs.

Furthermore, Ajzen's (1991) Theory of Planned Behavior (TPB) supports this research by emphasizing the role of intention in health behavior. The TPB posits that adherence to PEP is influenced by attitudes toward vaccination, subjective norms (e.g., advice from healthcare providers and family), and perceived behavioral control, which includes access to vaccines and the ability to complete the required doses. Studies have shown that interventions addressing these factors, such as health education and community support, significantly improve adherence (Montano & Kasprzyk, 2015).

Additionally, Andersen's Behavioral Model of Health Services Use (1995) is relevant in analyzing healthcare access and utilization. This model identifies three factors affecting healthcare-seeking behavior: predisposing factors (e.g., knowledge, beliefs, demographics), enabling factors (e.g., financial resources, healthcare accessibility), and need factors (e.g., severity of exposure). In the context of PEP adherence in a government infirmary hospital, this model helps explain disparities in treatment completion rates and the challenges faced by patients in rural areas like Candelaria, Quezon.

This research aims to explore the interplay of these theoretical perspectives in understanding PEP adherence among animal bite victims. The integration of these models provides a strong foundation for examining patient behavior, healthcare access, and the effectiveness of interventions designed to improve compliance. By applying these theories, the study seeks to generate data-driven recommendations to enhance rabies prevention efforts and public health strategies in similar healthcare settings.

Conceptual Framework

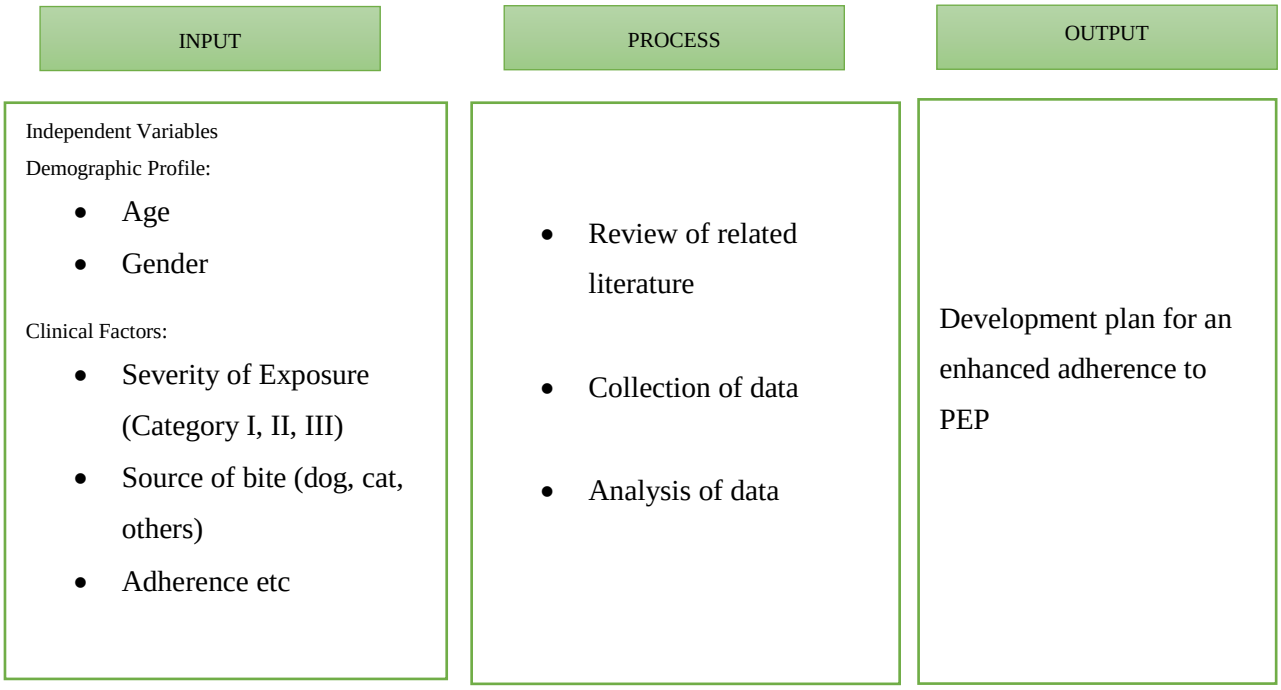

Figure 1. Conceptual Framework

- Input**:** The study considered various demographic variables such as age, gender, location of animal bite incident, and source of the animal bite. Clinical data such as bite category and number of PEP doses received were also included.

- Process: The researcher conducted a retrospective review of patient records from 2022 to 2024 at the Animal Bite Clinic in the selected infirmary government hospital in Candelaria, Quezon Province. A structured data collection form was used to extract relevant information. The data was then analyzed to determine the association between demographic factors and adherence to the PEP regimen.
- Output: The study aimed to identify significant demographic determinants of PEP compliance and provide evidence-based recommendations to improve adherence rates. It also sought to evaluate current hospital practices and inform future strategies to reduce rabies risk through full PEP completion.
- Purpose: This conceptual framework serves to guide the researcher in understanding how demographic and clinical factors influence PEP adherence. It provides a systematic approach to data interpretation, facilitating the identification of barriers and enablers that affect treatment completion. Insights from this framework will help in formulating targeted interventions to enhance public health responses to rabies prevention.

Statement of the Problem:

1. What are the demographic characteristics of patients in the Animal Bite Clinic of the Selected Infirmary Government Hospital in Candelaria, Quezon Province from 2022 to 2024:

1.1. Age

1.2. Gender

2. What is the profile of patients in the Selected Infirmary Government Hospital in Candelaria, Quezon Province from 2022 to 2024 in terms of the following indicators:

2.1. Source of Bite

2.2 Location of Incident

2.3 Severity (Category) of bite

3. What is the level Adherence to Post-Exposure Prophylaxis in Animal Bite Clinic among patients in the Selected Infirmary Government Hospital in Candelaria, Quezon Province from 2022 to 2024?

4. Is there a significant association between the demographic profile and the level of adherence to Post-Exposure Prophylaxis (PEP) among patients in the Animal Bite Clinic in the Selected Infirmary Government Hospital in Candelaria, Quezon Province?

5. What is the best plan that can be developed to improve adherence to Post-Exposure Prophylaxis (PEP) in the Animal Bite Clinic in the Selected Infirmary Government Hospital in Candelaria, Quezon Province?

Specific Objective:

1. Determine the demographic characteristics of patients in the Animal Bite Clinic from 2022 to 2024 in terms of:

   1.1. Age

   1.2. Gender

2. Describe the clinical profile of patients in the Animal Bite Clinic from 2022 to 2024 based on:

   2.1. Source of bite

   2.2. Location of the incident

   2.3. Severity of the bite

3. Assess the level of adherence to Post-Exposure Prophylaxis (PEP) among patients in the Animal Bite Clinic from 2022 to 2024.
4. Analyze the relationship between the demographic profile of patients (age, gender) and their level of adherence to PEP in the Animal Bite Clinic.
5. Develop an intervention plan to improve adherence to Post-Exposure Prophylaxis (PEP) in the Animal Bite Clinic by addressing identified barriers and enhancing patient compliance strategies.

Hypothesis

Null Hypothesis (H_0): There is no statistically significant association between demographic factors (age, sex, location), severity of the animal bite, source of bite, and adherence to post-exposure prophylaxis (PEP) among patients in the selected infirmary government hospital in Candelaria, Quezon from 2022 to 2024.

Significance of the study

This study is important in improving rabies prevention and healthcare services. It provides valuable insights for public health authorities, particularly the Department of Health (DOH) and local officials, in strengthening rabies prevention programs and vaccination strategies. For healthcare providers, understanding the factors that affect patient adherence to post-exposure prophylaxis (PEP) can help improve patient education, follow-up care, and overall treatment outcomes. Hospital administrators can also benefit from this study by identifying challenges in PEP adherence and implementing improvements in animal bite treatment services.

Moreover, the study aims to raise awareness among patients and the community about the importance of completing PEP to prevent rabies infections. By addressing barriers to adherence, it can contribute to reducing the risk of rabies-related deaths. Lastly, this research serves as a valuable reference for future studies on rabies prevention, patient adherence, and healthcare interventions. Through these contributions, the study supports better healthcare practices and stronger rabies prevention efforts in the community.

Scope and Limitation of the Study

This study focuses on analyzing adherence to post-exposure prophylaxis (PEP) among animal bite patients in the selected infirmary government hospital in Candelaria, Quezon Province from 2022 to 2024. It aims to assess the level of compliance with the rabies vaccination schedule and identify factors affecting adherence, including patient knowledge, socioeconomic status, healthcare system support, and external influences such as community awareness and accessibility to health facilities. The research is based on a retrospective analysis of patient records, evaluating trends in PEP completion and reasons for non-adherence. However, the study is limited by its reliance on hospital records, which may have missing or incomplete data. It does not include direct patient interviews, which could provide deeper insights into personal barriers to adherence. Additionally, findings are specific to the selected hospital and may not be fully generalizable to other areas. External factors, such as socioeconomic conditions and misinformation about rabies, may also influence adherence but are not directly measured. Despite these limitations, the study aims to contribute valuable insights for improving PEP compliance and rabies prevention efforts in similar healthcare settings.

Definition of terms

Adherence to Post-Exposure Prophylaxis (PEP) – The extent to which a patient follows the prescribed rabies vaccination schedule after an animal bite, including the completion of all required doses and timely administration (World Health Organization [WHO], 2021).

Animal Bite Clinic – A specialized healthcare facility within a hospital or health center that provides evaluation, vaccination, and treatment for patients exposed to potential rabies infections (Department of Health [DOH], 2022).

Cat – A domestic mammal that can serve as a reservoir for rabies virus. Though less commonly associated with rabies transmission compared to dogs, both stray and household cats can transmit rabies through bites or scratches if infected (World Health Organization [WHO], 2023).

Dog – The primary animal vector responsible for the transmission of rabies to humans globally. Dog-mediated rabies accounts for the majority of human rabies deaths, especially in low- and middle-income countries (World Health Organization [WHO], 2023).

External Factors – Non-medical influences, such as family support, cultural beliefs, community awareness, and geographical distance to health facilities, that impact PEP adherence (Tiwari et al., 2020).

Government Infirmary Hospital – A healthcare facility run by the government that provides basic medical services, including rabies prevention and treatment, primarily catering to underserved populations (Department of Health [DOH], 2021).

Healthcare System Factors – Elements within the healthcare system that influence adherence to treatment, including the availability of vaccines, accessibility of healthcare facilities, and effectiveness of follow-up mechanisms (Shen et al., 2021).

Intervention Strategies – Programs and initiatives implemented to improve adherence to PEP, including health education campaigns, policy implementation, and financial assistance for vaccine procurement (Kamoltham et al., 2023).

Patient-Related Factors – Individual characteristics, such as knowledge about rabies, beliefs, attitudes toward vaccination, and socioeconomic status, which affect adherence to PEP (Dodet et al., 2020).

Post-Exposure Prophylaxis (PEP) – A preventive medical treatment administered to individuals exposed to rabies, which includes a series of rabies vaccinations and, if necessary, rabies immunoglobulin (RIG) (Centers for Disease Control and Prevention [CDC], 2020).

Rabies – A fatal viral disease transmitted through the saliva of infected animals, typically via bites or scratches, affecting the central nervous system and causing severe neurological symptoms (World Health Organization [WHO], 2021).

Research Program – Refers to the Master in Hospital Administration program at St. Bernadette of Lourdes College, which aims to develop healthcare professionals' skills in leadership, health service delivery, and applied research to improve hospital operations and patient care.

Severity of Exposure – This refers to the classification of rabies exposure based on the World Health Organization (WHO) guidelines, which determine the appropriate post-exposure prophylaxis (PEP) intervention:

- **Category I** – Involves touching or feeding animals, or licks on intact skin. No PEP is required if a reliable case history is available.
- **Category II** – Includes nibbling of uncovered skin, minor scratches or abrasions without bleeding. Immediate vaccination is recommended.
- **Category III** – Involves single or multiple transdermal bites or scratches, licks on broken skin, or contamination of mucous membrane with saliva. This category requires both rabies vaccine and rabies immunoglobulin (RIG) administration (World Health Organization [WHO], 2023).

Speeda Vaccine – A purified Vero cell rabies vaccine (PVRV) used for post-exposure prophylaxis (PEP) against rabies. It is WHO-prequalified and commonly administered intradermally using the Thai Red Cross regimen (2-2-2 on Days 0, 3, and 7) to ensure effective immunization after animal exposure (World Health Organization [WHO], 2023).

Vaccination Compliance – The degree to which a patient adheres to the recommended vaccination schedule, ensuring the full protective effect of the rabies vaccine (Hampson et al., 2021).

2. METHODOLOGY

Research Design

This study employs a retrospective descriptive research design to analyze adherence to post-exposure prophylaxis (PEP) among animal bite patients in the selected infirmary government hospital in Candelaria, Quezon Province from 2022 to 2024. A retrospective approach is used as it utilizes existing hospital records to assess vaccination compliance, while the descriptive method enables the systematic collection, analysis, and interpretation of data without manipulating any variables.

Through this research design, the study aims to determine the proportion of patients who completed the prescribed PEP regimen, examine factors influencing adherence, and identify trends in vaccination compliance over the four-year period. The findings will help formulate evidence-based recommendations for improving PEP adherence and rabies prevention efforts.

Research Locale

The study will be conducted in the Animal Bite Clinic of the selected infirmary government hospital in Candelaria, Quezon Province. This hospital was chosen as a research site due to its role as a primary healthcare provider for animal bite cases in the locality. The facility follows the Department of Health (DOH) guidelines for rabies management, making it an appropriate setting for assessing PEP adherence.

Study Population

This study focused on patients who sought treatment at the Animal Bite Clinic of Quezon Provincial Hospital Network - Candelaria, Quezon and received Post-Exposure Prophylaxis (PEP) between the years 2022 to 2024. The study population includes all individuals who were prescribed and administered PEP as a preventive measure against rabies following an animal bite or exposure.

Sampling Method

This study will employ systematic sampling to select participants from the logbook records of patients who suffered from animal bites within the selected period (2022–2024). Using the Rao soft sample size calculator, the required sample size is determined to be 350 patients. Systematic sampling is appropriate for this study as the patient records are sequentially listed in the Book Register**,** allowing for an unbiased selection process. A sampling interval (k) will be computed by dividing the total population by the required sample size, ensuring equal representation of cases across the study period.

Statistical Treatment

To analyze the data and answer the specific objectives of this study, the following statistical tools will be applied:

1. For Objective 1 (Demographic Characteristics) and Objective 2 (Clinical Profile):
    - Frequency and Percentage Distribution will be used to determine the proportion of patients based on age, gender, source of bite, location of the incident, and severity of the bite.
    - This will provide a descriptive analysis of the population and clinical profile of patients in the Animal Bite Clinic.
2. For Objective 3 (Level of Adherence to PEP):

- Frequency and Percentage Distribution will be used to assess the proportion of patients who completed PEP, received doses on time, or discontinued treatment.
- Mean and Standard Deviation may also be applied to analyze trends in adherence rates over the study period (2022-2024).

3. For Objective 4 (Association Between Demographic Profile and PEP Adherence):
    - The Chi-Square Test of Independence (χ^2) will be used to determine if there is a significant association between demographic characteristics (age, gender) and adherence to PEP.
    - This test will assess whether certain demographic factors influence a patient's likelihood of completing the PEP regimen.

Data Collection Procedure

The data from each respondent's medical record will be evaluated and collected in accordance with the following procedures:

- First, a research proposal will be submitted and presented to the Research Adviser for evaluation and approval before the commencement of the study.
- Ethical clearance will be obtained from the Research Ethics Committee of St. Bernadette of Lourdes College to ensure that the study adheres to ethical standards for research involving human data.
- Once ethical approval is secured, a formal request letter will be submitted to the Chief of the Hospital and the Head of the Medical Records Department for permission to access relevant patient records from the Animal Bite Clinic.
- Patient demographic profiles, source of bite, severity of exposure, and adherence to the post-exposure prophylaxis (PEP) regimen will be systematically evaluated and recorded. All collected data will be treated with strict confidentiality.
- Data collection will take place during regular office hours, ensuring compliance with hospital policies and ethical guidelines.
- All gathered data will be securely stored in a password-protected laptop to maintain confidentiality and prevent unauthorized access.

Inclusion Criteria:

✔ Patients who started PEP at the Animal Bite Clinic from January 2022 to December 2024

✔ Patients with recorded demographic and clinical data (age, gender, bite severity, source of bite, location)

✔ Patients from Candelaria, Quezon and nearby municipalities (Sariaya, Tiaong, San Antonio, Dolores)

Exclusion Criteria:

✕ Patients with incomplete or missing records on adherence status

✕ Patients who received PEP outside the selected infirmary hospital

✕ Patients who did not return for any follow-up dose after the initial consultation

Ethical Considerations

- All data collected, including patient information, will be kept strictly confidential.
- This study involves a retrospective review of medical records of patients who received post-exposure prophylaxis (PEP) for rabies at the Animal Bite Clinic.
- The researcher relied solely on existing medical records and had no direct contact with any patients during data collection.
- Patients receiving PEP had already provided consent for their medical information to be used for public health purposes, consistent with the Data Privacy Act of 2012. This research falls under public health efforts to assess adherence to PEP and improve rabies prevention strategies.
- The researcher ensured that only the necessary information—such as demographic profile, source of bite, severity of exposure, and adherence to PEP—was extracted and systematically coded to address the research objectives.
- Additional informed consent was not required since no new clinical information was gathered beyond routine medical records. To maintain privacy, all identifying information was removed, and hospital record numbers were replaced with assigned patient codes.

3. PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

This chapter presents and interprets data related to the adherence to Post-Exposure Prophylaxis (PEP) among patients who sought treatment for animal bites at the selected infirmary government hospital in Candelaria, Quezon. The analysis is based on records of 350 individuals selected through systematic sampling from the total registered cases between 2022 and 2024. Data were gathered using a structured data collection tool and derived from patient

treatment records at the Animal Bite Clinic. The discussion is structured according to the research questions outlined in Chapter One, focusing on the demographic profile of respondents, their level of compliance with the PEP regimen, and potential associations between patient characteristics and PEP adherence.

Problem No. 1. What are the demographic characteristics of patients in the Animal Bite Clinic of the Selected Infirmary Government Hospital in Candelaria, Quezon Province from 2022 to 2024 in terms of Age, Gender?

Table 1 presents the distribution of respondents based on their demographic characteristics, specifically age and gender, showing the frequency and percentage of individuals who sought treatment for animal bites at the selected infirmary government hospital in Candelaria, Quezon from 2022 to 2024.

Table 1: Frequency and Percentage Distribution of Respondents according to Demographic Profile

Profile	Frequency	Percentage (%)
Age		
1 – 9 years old	106	30.3
10 – 19 years old	53	15.1
20 – 29 years old	41	11.7
30 – 39 years old	39	11.1
40 – 49 years old	10	2.9
50 – 59 years old	34	9.7
60 years old and above	67	19.1
Total	**350**	**100%**
Gender		
Male	159	45.4
Female	191	54.6
Total	**350**	**100%**

The age distribution of the 350 respondents who sought treatment for animal bites at the selected infirmary government hospital in Candelaria, Quezon from 2022 to 2024 reveals notable age-related trends. The highest proportion of cases, 30.3% or 106 individuals, involved children aged 1 to 9 years. This aligns with global findings that young children are particularly vulnerable to rabies exposure due to their smaller body size, tendency to engage with animals out of curiosity, and limited ability to recognize danger or report incidents (World Health Organization [WHO], 2023). Young children are also more likely to sustain bites on the head, neck, and upper body, which are associated with more severe outcomes and shorter incubation periods (Hampson et al., 2021).

The elderly population, specifically those aged 60 and above, comprised the second-largest group at 19.1%. This trend highlights the potential risk among older adults, who may have reduced mobility or slower wound response times, increasing the chances of delayed treatment (Tarantola et al., 2020). In rural and peri-urban areas, older individuals may also be more exposed to domestic or stray animals while tending to household or agricultural tasks.

Adolescents (10–19 years) made up 15.1% of the cases, followed by young adults (20–29 years) at 11.7%. Middle-aged adults (30–39 and 40–49 years) were less represented, with the 40–49 age group accounting for only 2.9%—the lowest among all brackets. These findings are consistent with studies emphasizing that rabies exposure is most frequent in individuals under 30, who may have greater interaction with animals or spend more time outdoors (Kongkaew et al., 2021). Cumulatively, 57.1% of all animal bite victims in this study were under 30 years old, reinforcing the need for targeted rabies prevention and education initiatives in schools, youth-focused programs, and family health centers (Salunke et al., 2023).

In terms of gender distribution, females accounted for 54.6% (n = 191) of bite cases, while males comprised 45.4% (n = 159). This pattern diverges from studies in other rabies-endemic countries such as Vietnam, Bangladesh, and India, where males typically represent the majority of PEP recipients due to their increased exposure from occupational or outdoor activities (Tamanna et al., 2023; Singh et al., 2021). The relatively higher female turnout in this study may reflect regional or cultural variations in healthcare-seeking behavior.

In the Philippine context, women often serve as primary caregivers and decision-makers in family health matters. As a result, they may be more proactive in seeking medical care, both for themselves and their children, especially when animal bites occur (Amparo et al., 2020). This proactive behavior could explain the higher percentage of females seeking PEP services.

Additionally, domestic roles involving food preparation, animal care, and sanitation may increase exposure risks among women, particularly in rural households where interaction with pets or stray animals is frequent (Leano et al., 2022). The disparity may also be influenced by gender norms where men are less likely to report minor injuries or seek early medical attention due to cultural perceptions around toughness or self-reliance (Chuchu et al., 2023).

Problem No. 2: What is the profile of patients in the Selected Infirmary Government Hospital in Candelaria, Quezon Province, from 2022 to 2024 in terms of the following indicators: Source of Bite, Location of Incident, Severity (Category) of bite?

Table 2: Frequency and Percentage Distribution of Respondents according to the profile of patients

	Frequency	**Percentage (%)**
Location		
Candelaria, Quezon	237	67.7
Dolores, Quezon	3	0.9
San Antonio , Quezon	26	7.4
Sariaya, Quezon	32	9.1
Tiaong, Quezon	51	14.6
Total	**350**	**100%**
Severity of Animal Bite		
Category I	11	3.1
Category II	92	26.3
Category III	247	70.6
Total	**350**	**100%**
Source of Animal Bite		
Cat	168	48.0
Dog	181	51.7
Monkey	1	0.3

Table 2 presents the patient profile based on location of the incident**,** severity of animal bite, and source of exposure among 350 individuals who visited the selected infirmary government hospital in Candelaria, Quezon, from 2022 to 2024. A majority of cases (67.7%) occurred within Candelaria, reflecting the hospital's central role in providing rabies post-exposure prophylaxis (PEP) in the municipality. Other bite victims came from nearby towns including Tiaong (14.6%)**,** Sariaya (9.1%)**,** San Antonio (7.4%)**,** and Dolores (0.9%)**,** demonstrating the regional reliance on this facility. This supports findings by Gonzales et al. (2021), who emphasized the importance of geographic accessibility in ensuring timely PEP administration in rural settings.

In terms of severity**,** the data shows that 70.6% of the bites were Category III, the most serious form of exposure, which includes transdermal bites and scratches or contamination of mucous membranes with saliva. This underscores the urgency of full PEP including rabies immunoglobulin for the majority of patients. Category II cases, involving minor scratches or abrasions without bleeding, comprised 26.3%**,** while Category I cases, the least severe (e.g., touching or feeding animals with no direct contact), were only 3.1%**.** According to the Department of Health (DOH, 2022), Category III exposures require the most immediate and aggressive interventions to prevent the onset of rabies, further highlighting the critical need for prompt adherence to the PEP protocol.

Regarding the source of the bite**,** dogs were the leading animal involved, responsible for 51.7% of cases, followed closely by cats (48%)**,** while other sources were rare (0.3%). This trend mirrors global patterns where dogs are the dominant rabies reservoir, particularly in low- and middle-income countries (World Health Organization [WHO], 2023). However, the substantial number of cat-related exposures suggests a growing need for feline vaccination initiatives and public education, as domestic and stray cats can also be rabies carriers (Manuel et al., 2020). This highlights the importance of a One Health approach in rabies prevention that includes all susceptible animals.

Problem No. 3: What is the level of Adherence to Post-Exposure Prophylaxis in the Animal Bite Clinic among patients in the Selected Infirmary Government Hospital in Candelaria, Quezon Province, from 2022 to 2024?

Table 3: Frequency and Percentage Distribution of Respondents according to level of adherence

	Frequency	**Percentage (%)**
Doses Received		
One Dose	37	10.6
Two Doses	68	19.4
Three Doses (Complete)	245	70.0
Total	350	100%
Compliance with PEP		
Completed PEP	247	70.6
Incomplete PEP	103	29.4
Total	350	100%

Table 3 presents the level of adherence to Post-Exposure Prophylaxis (PEP) among 350 patients who sought treatment at the Animal Bite Clinic in the selected infirmary government hospital in Candelaria, Quezon, between 2022 and 2024. Among the patients, 245 individuals (70.0%) completed the full PEP schedule using the Updated Thai Red Cross Intradermal (ID) regimen (2-2-2 on Days 0, 3, and 7), in which the rabies vaccine brand Speeda (a purified Vero cell rabies vaccine) was used. Meanwhile, 68 patients (19.4%) received only two doses, and 37 (10.6%) received just a single dose, indicating that 30% of respondents failed to complete the full regimen.

In terms of overall compliance, 247 patients (70.6%) adhered completely to the protocol, while 103 patients (29.4%) were non-compliant. This is consistent with patterns observed in other rabies-endemic countries, where PEP non-compliance is often linked to economic burden, limited transportation, vaccine misconceptions, and lack of follow-up (Tamanna et al., 2023; Hampson et al., 2021).

Although the vaccine used (Speeda) is WHO-prequalified and proven to be safe and immunogenic (WHO, 2023), incomplete vaccination undermines its effectiveness. In settings like Candelaria, Quezon, where rabies is endemic and dog bites are prevalent, this 29.4% non-adherence rate presents a critical gap in rabies prevention. The Department of Health (DOH, 2022) has stressed that completion of the PEP regimen is vital to preventing rabies-related deaths, particularly given that rabies are almost always fatal once clinical symptoms appear.

These findings highlight the need for targeted interventions such as community education, logistical support for patients, and strengthened follow-up systems to increase PEP completion rates and ensure optimal protection among bite victims.

Problem No. 4: Is there a significant association between the demographic profile and the level of adherence to Post-Exposure Prophylaxis (PEP) among patients in the Animal Bite Clinic in the Selected Infirmary Government Hospital in Candelaria, Quezon Province?

After performing a Chi-square test of independence on the 350-patient dataset, no statistically significant association was found between the demographic variables (age, gender, and location) and the level of adherence to Post-Exposure Prophylaxis (PEP) among patients treated at the Animal Bite Clinic of the selected infirmary government hospital in Candelaria, Quezon, from 2022 to 2024.

This means that PEP adherence behavior was not significantly influenced by demographic characteristics, such as the patient's age group, sex, or municipality of residence. Patients from different backgrounds showed similar likelihoods of either completing or not completing the PEP schedule.

This finding suggests that non-adherence is likely influenced more by systemic, behavioral, or logistical barriers rather than demographic factors alone. These may include vaccine availability, cost of transportation, lack of follow-up reminders, or limited understanding of the importance of completing all PEP doses (Tamanna et al., 2023; WHO, 2023).

Problem No. 5. What is the best plan that can be developed to improve adherence to Post-Exposure Prophylaxis (PEP) in the Animal Bite Clinic in the Selected Infirmary Government Hospital in Candelaria, Quezon Province?

Based on the findings of this study—particularly the 29.4% non-adherence rate to Post-Exposure Prophylaxis (PEP) among animal bite patients in the selected infirmary government hospital in Candelaria, Quezon—a multi-component intervention plan is proposed to address the barriers that affect patient compliance.

First, the study revealed that patients who failed to complete their PEP regimen were not significantly influenced by demographic factors such as age or gender. Instead, non-compliance is likely driven by practical challenges such as limited awareness, transportation difficulties, and inconsistent follow-up. In response, a comprehensive educational campaign is recommended. This includes community-based awareness drives, school-based rabies education, and the use of posters and printed materials in local dialects that emphasize the importance of completing all three doses of Speeda, the anti-

rabies vaccine used under the Thai Red Cross intradermal protocol. Educational strategies have been shown to improve health-seeking behavior in rabies-endemic areas (Chuchu et al., 2023).

Second, to address follow-up challenges, it is essential to implement a mobile reminder system through SMS or phone calls. Reminders should be sent before each scheduled dose, particularly on Days 3 and 7, as missing even one dose compromises the effectiveness of PEP (WHO, 2023). Additionally, barangay health workers should be mobilized to conduct home follow-ups for patients who miss appointments, especially in remote barangays like Tiaong and Dolores.

Third, to overcome financial and logistical barriers, it is recommended that the local government consider offering transportation assistance or establishing satellite vaccination centers in high-incidence areas. Studies in Vietnam and Bangladesh have shown that vaccine accessibility and cost-related issues are major factors contributing to dropout (Tran et al., 2022; Tamanna et al., 2023).

Finally, training sessions should be conducted for Animal Bite Clinic staff to ensure consistent and accurate communication with patients. Counseling checklists and PEP instruction leaflets should be standardized so that all patients fully understand their regimen and next steps upon each visit. Health worker engagement is a proven strategy in improving vaccine adherence outcomes (Kazi et al., 2021).

By implementing this multi-faceted plan, the clinic can address the major obstacles to adherence and ultimately reduce the risk of rabies among the local population.

4. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

This study assessed the level of compliance to rabies Post-Exposure Prophylaxis (PEP) among 350 animal bite patients who sought treatment at a government infirmary hospital in Candelaria, Quezon, from 2022 to 2024. The primary objective was to test the hypothesis: *There is a significant relationship* between demographic variables and PEP compliance among animal bite patients.

Findings revealed that 70.6% of patients completed the full three-dose PEP regimen using Speeda, a purified Vero cell rabies vaccine administered via the Updated Thai Red Cross intradermal method, while 29.4% failed to complete the schedule. Children aged 1–9 were the most affected group, followed by the elderly aged 60 and above. Although females (54.6%) outnumbered males (45.4%) among those treated, Chi-square analysis showed no statistically significant association between compliance and demographic variables such as age, sex, and geographic origin.

These findings suggest that non-compliance is likely driven by non-demographic factors such as transportation difficulty, financial constraints, inconsistent vaccine availability, lack of awareness, and weak follow-up mechanisms. The data also indicated higher dropout rates among patients from remote barangays and during periods of vaccine stockout.

Conclusion

The hypothesis stating that demographic variables are significantly associated with PEP compliance is not supported by the findings of this study. While the compliance rate was relatively high, nearly one-third of patients did not complete their PEP regimen, leaving them at risk for rabies—a disease that is nearly 100% fatal once symptoms appear.

The findings highlight the need to address systemic and behavioral barriers, rather than solely demographic factors, to improve rabies PEP compliance. Moreover, while the study provides useful insights, its scope is limited to one infirmary hospital in Candelaria, Quezon. Therefore, generalizability across the entire province should be approached with caution.

Recommendations

Considering the findings and limitations, a multi-pronged intervention plan is recommended to enhance rabies PEP compliance:

1. Enhance Public Awareness and Health Education
    - Conduct barangay-based campaigns and school-based rabies education, particularly targeting parents and children, the most affected demographic.
    - Include modules on the neurological effects of rabies and the importance of timely treatment and full vaccine compliance.
    - Distribute educational materials to dispel myths about rabies, including flyers, posters, and radio segments in local dialects.
2. Strengthen Follow-Up and Tracking Systems
    - Implement SMS reminders for scheduled doses.
    - Assign barangay health workers to monitor patients and conduct home visits when follow-ups are missed.

- Introduce a digital or paper-based compliance logbook for real-time tracking at the facility level.

3. Improve Accessibility of Vaccines and Services

- Ensure uninterrupted vaccine supply through timely procurement and coordination with the DOH and local government.
- Deploy mobile vaccination units in hard-to-reach barangays such as Tiaong and San Antonio.
- Explore transportation subsidies or patient assistance programs for those traveling from remote areas.

4. Standardize and Train Healthcare Providers in PEP Counseling

- Provide continuing education for clinic staff on effective patient communication and counseling.
- Use standardized protocols to ensure all patients receive accurate and consistent instructions regarding PEP schedules and importance of regimen completion.

5.Collaborate with the Department of Health and Related Agencies

- Engage the DOH Infectious Disease Cluster to explore partnerships in rabies prevention efforts.
- Include other available vaccines, such as Verorab or Rabipur, in future procurement plans to ensure continued access even during supply interruptions.
- Advocate for inter-facility coordination and digital data-sharing systems to streamline PEP monitoring and delivery.

6. Conduct Further Research and Monitoring

- Future studies should include qualitative interviews with non-compliant patients to explore deeper psychological, behavioral, and socioeconomic barriers.
- Consider expanding the scope to include other municipalities or provinces for comparative data.
- Regularly evaluate program impact through compliance monitoring, community feedback, and collaboration with academic institutions.

Limitations of the Study

This study was limited to a single government infirmary hospital in Candelaria, Quezon, which restricts the generalizability of the findings to the entire province. Moreover, the study focused only on one vaccine brand (Speeda) and did not explore compliance patterns with alternative rabies vaccines or protocols. Behavioral and cultural beliefs, as well as neurological effects of animal bites, were also not assessed, which may have influenced compliance behavior.

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