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ORIGINAL ARTICLE

POST-EXPOSURE RABIES VACCINE COMPLIANCE AND REASONS FOR NON-COMPLIANCE AMONG PEDIATRIC PATIENTS BEFORE AND DURING COVID-19 PANDEMIC IN A PRIVATE TERTIARY HOSPITAL IN DAVAO CITY

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ABSTRACT

Background: Rabies causes 59,000 deaths globally each year, with 391 and 368 cases reported in the Philippines in 2022 and 2023, respectively. In Davao City, 4 human rabies deaths were recorded in 2023. Though fatal, rabies is preventable through vaccination. The COVID-19 pandemic disrupted rabies eradication and immunization efforts. This study investigated its effect on the compliance with post-exposure rabies prophylaxis (PEP) and the reasons for non-compliance.

Objective: To compare the compliance with PEP and reasons for non-compliance among pediatric patients with animal bites before and during the COVID-19 pandemic.

Methods: This single-center retrospective cross-sectional study in a private tertiary hospital in Davao City reviewed 1,277 animal bite cases between March 16, 2017 and March 16, 2023. Data was gathered through chart reviews with follow-up through phone interviews. Compliance rates and reasons for non-compliance to PEP were determined.

Results: There were 1,224 cases of animal bites included in the study, 599 cases before the pandemic, and 625 during the pandemic. Thirty six percent of cases were aged 3-6 years old, with equal sex distribution. The highest cases were from the downtown area of the city (69% pre-pandemic and 53% during the pandemic); dogs were the primary biting animals. Bites in the upper extremities were common before the pandemic, while bites in the head and neck region increased during the pandemic. Most exposures were bites from vaccinated pets (65% pre-pandemic and 84% during the pandemic) and classified as Category III (52% pre-pandemic and 55% during the pandemic). Despite the pandemic, compliance with PEP among the animal bite cases remained to be high, 93.8% pre-pandemic and 93.1% during the pandemic. Non-compliance with PEP was influenced by psychological factors (fear of hospitals and vaccination and acquiring infection during hospital visit and socio-economic factors (cost, distance and loss of wages).

Conclusion: The most significant factors for non-compliance with PEP during the pandemic were fear of hospitals and acquiring illnesses while in the hospital, while compliance was linked to parent's higher socio-economic status and awareness.

KEYWORDS: *rabies, post-exposure prophylaxis, COVID pandemic*

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The authors declare that the data presented are original material and have not been previously published, accepted or considered for publication elsewhere; that the manuscript has been approved by all authors, and that the authors have met the requirements for authorship.

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INTRODUCTION

Rabies causes 59,000 deaths per year globally,[1] including 250-300 deaths among children under 15.[2] The Philippines enacted Republic Act 9482 (Anti-Rabies Act of 2007), to control the dog population and eradicate rabies through the National Rabies Prevention and Control Program (NRPCP).[3] However, human rabies cases remain high, with 301 and 308 cases in 2018 and 2019, rising to 391 and 368 in 2022 and 2023, respectively, while Davao City, Philippines, documented 4 human rabies deaths in 2023.[4] The One Health advocacy aims to achieve zero human rabies deaths by 2030 through mass dog vaccination.[5] Until then, suspected rabies cases should receive post-exposure prophylaxis (PEP). Several studies from India showed that non-compliance to PEP has been linked to low socio-economic status. Additionally, India accounts for 36% of the global death rate of rabies.[6]

In several studies, PEP non-compliance was linked to several factors- time constraints and biting animal status[7] low parental education, lack of rabies immunoglobulin, high costs of vaccine[8] and poor healthcare worker knowledge.[9] In the U.S., missed appointments, lack of awareness of vaccination regimen, and refusal were the main reasons.[10] Local studies revealed vaccine costs as the main factor for non-compliance to PEP,[11] while another study reported lack of knowledge about vaccines.[12] During the pandemic, PEP compliance dropped to 45%[1] with forgetfulness cited as the main reason.[6]

Compliance with PEP had already been difficult to achieve before the pandemic due to the high cost of vaccines. With the onset of COVID-19, rabies prevention efforts were further disrupted, as healthcare resources were strained and funding redirected to infection control. Gongal et al. (2022)[13] advocated for PEP as an emergency medical service alongside mass dog vaccination, while Quiambao (2023)[5] reported funding cuts, halted immunizations, and staff reassignments in Animal Bite Treatment Centers (ABTCs), and emphasized the need for stronger rabies response strategies to improve vaccine compliance. Given the lack of local data, this study aimed to compare the post-exposure rabies vaccine compliance and reasons for non-compliance of pediatric patients with animal bites before and during the COVID-19 pandemic in a tertiary hospital in Davao City. Specifically, this study aimed to describe (1) the demographic profile of animal bite patients (age, sex, residence); (2) bite and biting animal characteristics (animal type, bite site and category, ownership, consultation timing, vaccination status, animal outcome, and pathology results); and (3) compare the compliance before and during the pandemic and state the reasons for non-compliance with post-exposure prophylaxis based on caregiver factors (psychological, socio-economic, and educational).

MATERIALS AND METHODS

Study Design and Setting

This was a single-center retrospective cross-sectional study in a private tertiary training hospital in Davao City. Data were collected through chart reviews and followed up through phone interviews using a standardized data collection form.

Sampling Method

The investigator used purposive sampling, where only those who satisfied the inclusion were included in the research.

Inclusion Criteria

Pediatric patients (ages 18 years old and below) who were brought for consultation at the outpatient section of the Emergency Department from March 16, 2017 until March 16, 2023 with the following were included:

1. Documented Category II or Category III cat or dog bites.
2. Received first dose of anti-rabies vaccine post-exposure prophylaxis in this institution.
3. Verbal consent was given by the parent or guardian when contacted by phone followed by a written consent form via email.
4. Patients who received previous anti-rabies vaccines who came in for booster doses.

Exclusion Criteria

Excluded from the study were patients and their parents/guardians who:

1. Did not consent to the study
2. Cannot be contacted through the phone after multiple attempts (up to 5x)
3. Cannot recall the incident (animal bite/scratch)
4. Contact numbers not recorded in the chart

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Sample Size

The computed sample size per age group required a minimum of 100 per age group estimated based on the hospital's average monthly census of animal bite cases over the 6-year study period (3 years before and during the pandemic). All eligible patients within this timeframe were included to obtain a comprehensive data.

Data Collection Procedure

This research proposal was presented to the Department of Pediatrics Research Committee for review and evaluation before submission for approval to the Ethics Committee of the hospital. Once approved, letters were sent to the Medical Director and the Head of the Medical Records Section to request the investigator's access to the patient charts.

Review of charts of pediatric patients who sought consult at the Emergency Department (ED) with a chief complaint of animal bite/scratch from March 16, 2017 to March 15, 2020 (before the COVID-19 pandemic) and March 16, 2020 to March 16, 2023 (during the COVID-19 pandemic) were done.

Patients' data were entered in a Data Collection Forms including the demographic profile of the patients, contact numbers of the patients, parents, and/or guardians were noted, which were used in contacting them via phone. A corresponding phone script and checklist written both written in English, Filipino and Cebuano was followed. which included the following: (1) verbal consent, (2) more information on the characteristics of the bites and the biting animal; (3) number of vaccines received; (4) reasons for non-completion of vaccination based on the characteristics of the parent or caregiver and (5) general state of well-being of the patient after the animal bite and the rabies vaccination. During the follow-up phone interview, patient charts were cross-checked with the statements provided by the parents or guardians.

Ethical Considerations

This study was conducted in accordance with the National Ethical Guidelines for Health and Health-Related Research [14] and the Declaration of Helsinki. Ethical clearance was obtained from the Research Ethics Committee of this institution.

Patients who met the inclusion criteria were contacted by phone, and verbal informed consent was obtained prior to participation. Ethical principles, including respect for participants' rights to self-determination, privacy, confidentiality, fair treatment, and protection from harm, were strictly observed throughout the study. Participation was entirely voluntary, and respondents were informed that they could withdraw from the study at any point without penalty or discrimination.

All data collected were handled with strict confidentiality and used solely for research purposes. Personal identifiers were removed and replaced with numerical codes to ensure anonymity. Data were stored in password-protected electronic files accessible only to the principal investigator and will be retained for five years before being permanently deleted.

The author declares no conflict of interest related to the conduct or results of this study. No external funding agency influenced the study's design, data collection, analysis, or interpretation.

Statistical Analysis

The factors for non-compliance were computed using a 95% confidence interval (CI) with a p-value of 0.05. Odd's ratio was used to measure the strength of the association between the non-compliance factors before and during the pandemic.

DEFINITION OF TERMS

Category I Exposure

Defined as animal licking intact skin or exposure of individuals such as veterinarians and health workers attending to rabies patients, without skin break or contact with mucous membranes.[3]

Category II Exposure

Defined as superficial lacerations or abrasions with no spontaneous bleeding, or animals nibbling uncovered skin located anywhere in the body except the head and neck region.[3]

Category III Exposure

Defined as single or multiple transdermal bites or scratches with spontaneous bleeding, licks on broken skin or mucous membranes, exposure to a rabies patient or bats, ingestion of raw infected meat, and any Category II exposures located in the head and neck region.[3]

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Rabies Pre-Exposure Prophylaxis (PrEP*)*

Refers to the administration of rabies vaccine before potential exposure to the rabies virus. It induces antibody and T-cell production to neutralize the rabies virus in the body and provides long-term protection for individuals at high risk of exposure, such as veterinarians, animal handlers, and laboratory workers.[3]

Post-exposure prophylaxis (PEP)

Refers to the administration of rabies vaccine after potential exposure to the rabies virus through bites, scratches, or licks from suspect rabid animals. It induces antibody and T-cell production to neutralize the virus, with active immunity developing within 7–10 days following vaccination. For Category III exposures, Rabies Immunoglobulin (RIG) may also be administered to provide immediate neutralizing antibodies before vaccine-induced immunity develops.[3]

Rabies Immunoglobulin (RIG)

Refers to passive immunization given to Category III exposures at the bite site to provide immediate neutralizing antibodies before vaccine-induced immunity develops.[3]

Compliant

Refers to participants who received the full course of post-exposure prophylaxis (PEP) within the prescribed schedule during the study period.[1]

Non-compliant

Refers to participants who failed to complete the prescribed course of post-exposure prophylaxis (PEP) but received at least the first vaccine dose.[1]

RESULTS

From March 16, 2017 to March 16, 2023, a total of 1,277 Category II and III pediatric animal bite (dog or cat) patients were recorded. Of these, 1,224 patients were included in the study, with 599 patients were seen during the pre-pandemic (March 16, 2017 to March 15, 2020), while 625 patients were seen during the pandemic (March 16, 2020 to March 16, 2023) and excluded were 53 patients who could not be contacted due to missing or unreachable contact information. (Figure 1).

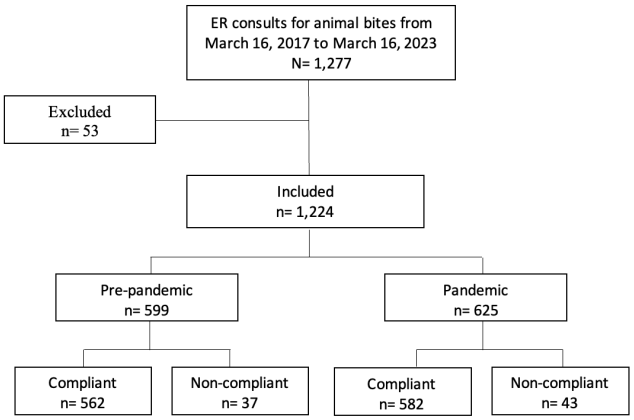

Figure 1. Grouping of patients

Table 1. Demographic profile of animal bite patients aged 18 years and below from March 16, 2017 to March 16, 2023

	Pre-pandemic N = 599	Pandemic N = 625	
Characteristics	**Pre- pandemic n(%)**	**Pandemic n(%)**	**Total**
Age			
0 - 2 years old	78 (13%)	79 (13%)	157
3 - 6 years old	206 (35%)	222 (35%)	427
7 - 12 years old	200 (33%)	204 (33%)	404
13 - 18 years old	115 (19%)	120 (19%)	235
Sex			
Male	274 (46%)	328 (52%)	602
Female	325 (54%)	297 (48%)	622
Residence			
Suburban	188 (31%)	291 (46%)	479
Downtown	411 (69%)	334 (53%)	745

Table 1 shows that the age group 3-6 years old had the most number of animal-bite incidents at 35% before the pandemic and 36% during the pandemic. Pre-pandemic rates of animal bite victims were similar for both sexes: 274 males (46%) and 325 females (54%), respectively, and 328 males (52%) and 297 females (48%), respectively, during the pandemic. The majority of animal-bite victims resided in the downtown area accounting for 69% before the pandemic and 53% during the pandemic.

Table 2 demonstrates the characteristics of the animal bite and status of the biting animal observed among the study participants while comparing the timelines—before and during the pandemic.

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Table 2. Characteristics of Bite And Status of the Biting Animal

	Pre-pandemic n= 599	Pandemic n= 625	
Characteristics	**Pre-pandemic n(%)**	**Pandemic n(%)**	**Total**
Animal Involved			
Dog	407 (68%)	445 (71%)	852
Cat	192 (32%)	180 (29%)	372
Bite Site			
Head/Neck	89 (15%)	179 (29%)	268
Arms/Hands	139 (23%)	124 (20%)	263
Trunk	98 (16%)	58 (9%)	156
Legs	128 (21%)	153 (24%)	281
Feet	145 (24%)	111 (18%)	256
Category			
2	290 (48%)	282 (45%)	572
3	309 (52%)	343 (55%)	652
Animal Ownership			
Known	150 (25%)	173 (28%)	323
Own	361 (60%)	396 (64%)	757
Unknown	88 (15%)	56 (8%)	144
Timing of Consult After Bite			
Less than 6 hours	207 (35%)	207 (33%)	414
6 to 24 hours	326 (54%)	358 (57%)	684
More than 24 hours	66 (11%)	60 (10%)	126
Vaccination Status of Biting Animal			
Vaccinated	387 (65%)	522 (84%)	909
Unvaccinated	88 (15%)	21 (3%)	109
Unknown	124 (20%)	82 (13%)	206
Fate of Biting Animal			
Alive	447 (75%)	539 (86%)	986
Dead	10 (2%)	6 (1%)	16
Unknown	142 (24%)	76 (12%)	218
Killed	0	4 (1%)	4
Pathologic Examination of Biting Animal			
Not done	454 (76%)	543 (87%)	997
Unknown	145 (24%)	80 (13%)	225

Dogs were the most common biting animal, comprising a total of 852 cases during both time periods. Before the pandemic, animal bites sustained in the extremities were extremely common with 145 cases (24%) involved the feet. However, during the pandemic, there was an increase in animal bites in the head and neck region, comprising 29% of the total cases. Category III exposures were predominant during both time periods, with a total of 652 cases. Most of the animal-bite victims sought consultation within 6–24 hours of the biting incident before and during the pandemic. Domesticated animals accounted for the majority of the animal-bite incidents before and during the pandemic, which accounted for 757 cases. Three hundred twenty-three cases had known ownership, and the remaining 144 cases were stray animals. The animals involved were vaccinated across both time periods, accounting for 909 cases of the total study population. Animals were observed by the parents/ guardians for symptoms of rabies within 14 days after the biting incident in the 986 cases during both time periods. There were no documented cases of rabies among the study participants. Moreover, none of the 997 animals underwent pathologic examination for rabies, while the remaining 225 animals had unknown status during both time periods.

Among the 1,224 study participants, 1,144 (93%) have completed the recommended 4-doses of PEP **(compliant),** while the remaining 80 (7%) had incomplete doses **(non-compliant)**. Among the 599 animal bite cases before the pandemic, 37 (6%) were non-compliant to PEP before the pandemic. During the pandemic, of 625 animal-bite cases, 43 (7%) were non-compliant. Table 3 shows the factors for non-compliance with PEP.

Table 3. Factors for Non-Compliance to Post-Exposure Prophylaxis

Factors	Pre-pandemic (n=37)	Pandemic (n=43)	Total	Odds Ratio	95%CI	p-value
PSYCHOLOGICAL						
Fear of vaccination	(0%)	1 (2%)	1	0.96	0.39 - 23.6	0.753
Fear of visiting hospital	(0%)	7 (16%)	7	1.56	1.23 - 7.6	0.025
Fear of acquiring any illness	14 (38%)	21 (49%)	35	2.31	1.08 - 6.87	0.030
Forgetfulness	1 (3%)	5 (12%)	6	1.06	0.61 - 5.4	0.159
SOCIO-ECONOMIC						
Cost of Vaccine	9 (24%)	6 (14%)	15	1.03	0.12 - 1.65	0.255
Fear of loss of wages	3 (8%)	(0%)	3	0.32	0.01 - 1.32	0.761
No free vaccine	(0%)	1 (2%)	1	0.96	0.31 - 1.92	0.664
Distance of house from hospital/travel expense	7 (19%)	1 (2%)	8	0.87	0.43 - 2.43	0.508
Missing workdays/schooldays	2 (5%)	1 (2%)	3	0.71	0.39 - 3.77	0.891
LITERACY						
Received prior anti-rabies vaccine within the past 3 months	1 (3%)	(0%)	1	0.45	0.032 - 2.09	0.711
Level of Education:						
High School Undergraduate	14 (38%)	7 (16%)	21	0.85	0.107 - 1.04	0.362
High School Graduate	7 (19%)	10 (23%)	17	1.06	0.43 - 4.02	0.651
College Undergraduate	4 (11%)	9 (21%)	13	1.09	0.61 - 3.62	0.241
College Graduate and Higher	12 (32%)	17 (40%)	29	1.17	0.53 - 3.41	0.522

A major reason for non-compliance with vaccine doses was the parents/ guardian's fear of acquiring other infectious diseases while visiting the hospital. Before the pandemic as stated by 38% of the respondents- specifically 24% feared acquiring pneumonia, 8% flu, 3% measles and 3% varicella, while the remaining 3% forgot the scheduled doses. However, with the onset of the COVID-19 pandemic, there was a rise to 49% of patients who failed to comply with PEP due to fear of contracting infectious diseases during hospital visit. The most feared illnesses was COVID-19 comprising 42%, followed by pneumonia at 5%, and flu at 2%.

Among the psychological factors, the fear of visiting hospital (Odds ratio 1.56; 95% CI: 1.23- 7.6; p-value 0.025) and fear of acquiring illnesses (Odds ratio 2.31; 95% CI: 1.08- 6.87; p-value 0.030) were highly significant factors for non-compliance to PEP during the pandemic.

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As for socio-economic factors, the most common reason for non-compliance prior to the pandemic was the high cost of vaccination (24%), followed by distance from the hospital (19%), fear of loss of wages (8%), and missing work or school days (5%). During the pandemic, 14% of respondents likewise cited the cost of vaccination as a barrier. However, these socio-economic factors, as well as literacy-related factors such as educational attainment and prior vaccination, showed no significant association with compliance.

DISCUSSION

There were remarkably high rates of compliance to post-exposure prophylaxis at 93.8% before the pandemic and 93.1% during the pandemic seen among animal-bite cases in this study. In contrast, local studies reported lower compliance before the pandemic: Sengson et al.[11] at 32% and Baron et al. at 78.8%.[12] Furthermore, international studies showed varying rates of compliance with India reporting 82.6% documented by Anandaraj and Balu,[7] then dropping to 52% as reported by Sahu and co-authors,[9] Senegal at 55% compliance according to Diallo et al.[8] and the USA at 73.2% compliance as reported by Shi et al.[10] During the pandemic, compliance was lower in other countries, as reported by Panda and Kapoor at 47.85%[1] and 58% by Sowbarnika et al.[6] In this study, the high compliance rate may be attributed to the practice of the healthcare staff of providing a vaccination card along with a comprehensive explanation by the healthcare staff on the importance of completing all vaccine doses and the risks associated with missed doses.

Unlike other studies where animal-bite victims were commonly under 15 years old,[8,9] this study revealed that children under 6 years old were commonly affected. This is in alignment with Sengson's et al. findings,[11] which can be attributed to the lack of judgement, smaller physique,[13] and increased engagement in outdoor and playful activities, making them more vulnerable to animal bites.[13] Sahu explained that the male gender was linked to more animal-biting incidents since they are more exposed to outdoor activities.[9] However, this study found that both genders had equal incidents of animal bites.

All the animal bite victims in this study resided in Metro Davao, the largest city in the country, with over 180 barangays. Victims were classified as to their residences- downtown or city proper (Poblacion) or the suburban areas. Most exposures were from the city proper, similar to a study by Diallo in South Africa, wherein they theorized that the swift urbanization of the city influenced the influx of stray dogs to more populaced areas for food and shelter. [8] However, the findings in this study are based on insufficient data considering the institution is situated in the city proper and a private institution.

Dogs were the primary source of animal bites in Asia and Africa, with domesticated dogs as the primary source mainly in Asia.[1,5,8,9,11] Furthermore, the WHO reported in June 2024 that canine rabies contributed to 99% of the human death toll, causing more than 50,000 human casualties.

Bites in the extremities were more common before the pandemic, similar to several investigations by Diallo, Sengson, and Ananadaraj.[7,8,11] with animal-bite victims using their hands or legs to protect themselves from attacks.[15] During the pandemic, the head and neck region had a notable increase of incidents, which can be attributed to the increased intimacy and more time spent with them. Similar to Sengson's local investigation and several studies from Africa and India, Category III exposures were more common.[1,7-8]

In this study, animal-bite victims sought consult within 24 hours, similar to a study done in Senegal.[8] Since most of the animals involved were pets and had vaccinations, their owners opted to observe the biting animal and the victim for signs and symptoms of rabies contributing to non-compliance with post-exposure prophylaxis, similar to a study by Shi.[10] Animals have been rarely sacrificed for pathologic examination for rabies. Only a small number of animals of unknown ownership were included; additionally, observation of bites from stray animals was impossible, hence their fates were unknown.

Factors For Non-Compliance with Post-Exposure Prophylaxis

The pandemic led to the temporary closure of schools and other academic institutions, and parents and guardians endured the additional burden of complying with homeschooling requirements.[16] This added burden contributed to a decline in the mental well-being of both parents and children,[15] resulting in heightened parental concern and fear of acquiring COVID-19 and other illnesses, which in turn led to increased anxiety and

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ultimately non-compliance to scheduled post-exposure prophylaxis.

The risk of non-compliance was 56% higher during the pandemic among those who had fear of visiting hospitals. In addition, the risk of non-compliance was 131% higher during the pandemic among those who fear of acquiring COVID or any illness in the hospital. Low vaccination rates have been observed from the decision of the individual to forego vaccination due to safety concerns.[15] Forgetfulness was noted with a 6% risk for non-compliance to PEP during the pandemic, as seen in similar studies by Panda.[1] However, in this study, the high compliance rate with anti-rabies vaccination may be attributed to the fact that most patients who sought consultation at this private institution belong to higher socio-economic groups. Parents and guardians were able to pay out of pocket despite the high cost of vaccines and were generally well-informed about the consequences of missed doses.

These findings align with previous studies highlighting the significant influence of socio-economic factors on vaccine compliance, particularly when comparing private and government healthcare settings. Vaccination costs have been a problem among animal-bite victims even before the pandemic. There has always been low compliance with PEP among patients who cannot afford the vaccines, as seen in a similar report by Sengson.[11] According to Anandaraj, lack of time for vaccination was one of the factors for non-compliance, wherein parents prioritized work instead.[7] In a Senegalese investigation, Diallo et al. reported the expensive cost of the vaccine was a contributing factor to non-compliance.[8] N'Guessan reported transportation as the main factor for non-compliance.[17] Likewise, Panda and Kapoor also noted residential distance from house to Animal Bite Center as another socio-economic factor.[1] This suggests that while private institutions demonstrate higher compliance due to better access and resources, government-owned facilities continue to face challenges rooted in socio-economic constraints.

Despite higher compliance to post-exposure prophylaxis of the animal-bite victims whose parents and guardians had greater educational levels, there was an increase in vaccination non-compliance during the pandemic from 32% to 40%. In the USA, Shi et al. stated that the main reason for discontinuation was that the majority of the parents knew that the animal tested negative for rabies, and the animal-bite victim received prior vaccination to anti-rabies.[10]

Kate et al. from the Netherlands stated similar findings among parents and guardians, wherein vaccine skepticism was noted to be prevalent among highly educated individuals,[16] which may be related to their knowledge of science and modern medicine. Furthermore, they noted that when presented information concerning vaccines, regardless of how trustworthy or dependable it was, some individuals still experienced vaccine insecurity and parental uncertainty.[16] During the pandemic, parents and guardians were also more knowledgeable on COVID-19 and the risk involved of acquiring the disease during hospital visits, which had contributed to their fear and anxiety to comply with post-exposure prophylaxis.

CONCLUSION

In conclusion, the compliance of animal-bite post-exposure prophylaxis was high at 93.8% before and 93.1% during the pandemic. Patients aged 3-6 years had the highest rates of animal-bite incidents. There was no sex predilection among animal-bite victims.

Dogs were the common cause of animal-bite incidents and most were owned as pets and are fully vaccinated. The most common bite sites among all ages, were the extremities, more of the feet followed by arms and hands, before the pandemic. Meanwhile the head and neck region were more common bite sites during the pandemic. Across both time periods, Category III exposures were common and majority of these patients sought consult within 24 hours of the biting incident. Biting animals were observed for signs and symptoms of canine rabies by pet owners and there were no documented cases of canine rabies in this study.

The most significant risk factor for non-compliance to PEP during the pandemic were fear of visiting hospital and fear acquiring illness among the psychological factors while before the pandemic, the most significant factor was the fear of acquiring infectious diseases in the hospital.

LIMITATIONS OF THE STUDY

This study only focused on the animal bite victims from a single private institution situated in the city proper, therefore findings may not be applicable to animal-bite cases in the city nor in the country.

Recall bias is a limitation of this study; however, most parents or guardians were able to recall the animal-biting incident in detail, suggesting that recall bias may have had minimal impact on the accuracy of the data collected. Additionally, response bias may have influenced some responses, as participants might have withheld or modified information due to fear of judgment, discrimination, or other social factors.

RECOMMENDATIONS

To assuage the aforementioned psychological factors that affect compliance with PEP, satellite vaccination sites should be considered. With the subsequent transition back to the pre-pandemic state, the factors identified remain relevant and still play a crucial role in compliance with PEP.

The importance of sustained active measures on increased literacy and awareness on rabies in the community could not be overemphasized. Various opportunities for health education in schools, colleges, clinics, health-centers and social media to strengthen health seeking behaviour of animal-bite victims. Healthcare workers have key roles in helping parents and guardians understand the need for vaccination and address concerns on vaccination hesitancy.

Further studies may be done of this nature in a non-private institution and non-hospital based bite centers (government ABTCs and privately-owned ABCs) to compare compliance to PEP.

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CONFLICT OF INTEREST

None declared.

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