



Knowledge, Attitude and Practices Regarding Rabies: A Cross Sectional Study

Dr. Nidhi Singh^{1*}, Dr. Aakanksha Bharti², Dr. Richa Kapoor³

¹Post Graduate Student, ²Senior Resident, ³Director Professor,

Department of Community Medicine, Vardhman Mahavir Medical College & Safdarjung Hospital, Delhi

***Corresponding Author:**

Dr. Nidhi Singh

Post Graduate Student, Department of Community Medicine, Vardhman Mahavir Medical College & Safdarjung Hospital, Delhi

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Abstract

Background: Human populations are growing and expanding into new geographic areas, these changes have led to the spread of existing or known (endemic) and new or emerging zoonotic diseases, which are diseases that can spread between animals and people. Being a fatal and 100% preventable disease, health system of our country should make efforts to prevent even a single case of rabies. The assessment of the level of awareness regarding rabies prevention can help in the formulation of policies accordingly for its prevention.

Objectives: To assess the knowledge, attitude and practices regarding rabies and its management among attendees of anti-rabies clinic of an Urban Primary Health Center, Delhi.

Methods: A cross-sectional study was conducted at the anti-rabies clinic of an Urban Primary Health Centre from November 2020 to February 2021 among 101 participants. Data was collected using pre-designed, semi structured questionnaire. Descriptive statistics and chi square test were applied.

Results: A total 101 attendees participated in the study. Out of the total, 79 (78.2%) were male and 22 (21.8%) were female. Overall, 49.5% of participants had adequate knowledge and 82.2% had positive attitude and 70.3% had adopted adequate practices towards rabies. The study showed that majority of participants had positive attitude and adopted appropriate practices. However, there exists some knowledge gaps among participants regarding the treatment and preventive measures.

Conclusion: Imparting proper health education can help in improving their knowledge, attitude and practices with respect to prevention and management of rabies

Keywords: Animal bite, Anti rabies clinic, Dog bite, Rabies

Introduction

Rabies is a vaccine-preventable viral disease which occurs in more than 150 countries and territories across the world.^[1] The causative agent of rabies belongs to the genus *Lyssavirus* of the family *Rhabdoviridae*.^[2] It affects central nervous system and causes fatal encephalomyelitis. Once clinical symptoms appear, rabies is virtually 100% fatal.^[1] Rabies shows highest case fatality rate i.e. 100% yet it is completely preventable acute viral disease. It is classified under the neglected tropical and zoonotic diseases. Deaths caused by rabies can be completely

prevented if timely application of appropriate prophylaxis is done.

It is estimated that rabies cause 59,000 human deaths annually in over 150 countries, with 95% of cases occurring in Africa and Asia. It is a major burden in Asia, with an estimated 35,172 human deaths per year. India accounts for 59.9% of rabies deaths in Asia and 35% of deaths globally.^[3] However, due to widespread underreporting and uncertain estimates, it is more likely that this number is a gross underestimate of the true burden of disease.^[3] It is endemic throughout the India, except Andaman and Nicobar and Lakshadweep Islands.^[2]

The Association of Southeast Asian Nations (ASEAN) has implemented a regional elimination strategy in order to eliminate human rabies in the region by 2020.^[3] It was observed that awareness regarding the disease and its preventive measures can play a vital role in decreasing rabies-related morbidity and mortality.

Knowledge, attitudes, and practice (KAP) studies on rabies have been widely used worldwide. It helps in identifying the knowledge gaps, cultural beliefs, and behavior patterns that may pose barriers to control the disease. The knowledge gained through these surveys can help in changing attitudes and practices to minimize disease burden. In India or other developing countries where health and hygiene are the major concern of government policies, these kind of studies can contribute significantly. Since, appropriate knowledge, attitude and practices regarding rabies can help in preventing the deaths due to rabies, it becomes very important to first assess the level of the same in the community so that specific measures can be taken up for the improvement of the situation.

Material And Methods:

Present study is a cross sectional study. Sample size was calculated to be 100, assuming 50% knowledge among animal bite victims considering maximum variance and relative allowable error of 20% using the formula of $4PQ/l^2$. A total of 101 new cases of animal bite coming to the anti-rabies clinic at an Urban Primary Health Centre, Fatehpur Beri in Delhi were selected randomly to include in the study. Those coming for the follow-up visit were excluded from the study. The duration of the study was 4 months (November 2020 to February 2021). A preformed, pre-tested, semi-structured questionnaire was used to collect the information. After taking informed written consent, participants were subjected to an interviewer administered questionnaire. The questionnaire was divided into 3 parts i.e., socio-demographic profile, knowledge about rabies/animal bite, attitude and practices of participants towards animal bite/ rabies. Following scoring system was used to assess knowledge, attitude and practices of respondents.

1. To assess the knowledge of the participants, scoring was based on 10 questions. Those participants who knew the answer correctly were assigned 1, whereas those who did not

were assigned 0. Mean score i.e. 5 was taken as cut off for deciding adequacy of knowledge. The participants who obtained score ≤ 5 were considered having inadequate knowledge and those who obtained more than the mean score i.e. 5 were considered to have adequate knowledge.

2. Questions relating to attitude included attitude towards wound management, attending hospital following animal bite etc. Score was given for 4 questions based on attitude. The participants who obtained score less than mean i.e., ≤ 2 were considered having negative attitude and those who obtained more than mean score were considered having positive attitude.
3. The practice component included questions regarding management of dog bite. Score was given for 8 questions based on practice component. The participants who obtained score less than mean i.e., ≤ 4 were considered having inappropriate practice and those who obtained more than mean score were considered having appropriate practice.

Data Analysis: The data was entered in Microsoft Excel. Data analysis was done using licensed SPSS software version 21.0. Qualitative data was summarized as proportions while quantitative data as mean, median and appropriate measures of dispersion including confidence intervals. Quantitative data was analyzed using appropriate statistical tests.

Results:

Socio-demographic characteristics of the participants:

A total of 101 anti-rabies clinic attendees participated in the study. Out of the total, 79 (78.2%) were male and 22 (21.8%) were female. Study results revealed that majority i.e., 91 (90.1%) aged less than 45 years with a mean of 24.08 (+17.24) years and median of 18 years. The demographic and household characteristics of the attendees are presented in Table 1.

Most of the participants were victims of dog bite 78 (77.2%), rest were bitten by monkey 20 (19.8%) and cat 3 (3%). Maximum bites were of category 2 and category 3 i.e., 42 (41.6%) and 49 (48.5%) respectively. Past history of animal bite was present in 26 (25.7%).

Participant's knowledge, attitude and practices towards rabies and its management:

Knowledge: Majority of the participants 69 (68.3%) had heard of rabies. It was found that 49 (48.5%) participants were aware that the disease is infectious, 35 (34.7%) knew mode of transmission of rabies and 54 (53.5%) knew that cat, rat, monkey or cattle can also be source of infection and 66 (65.5%) knew that the disease is fatal.

Attitude: A total of 73 (72.3%) participants said they would wash the wound immediately with soap and water after animal bite and 93 (92.1%) would consult doctor after animal bite. When asked what would be their immediate reaction following animal bite, 62 (61.4%) said they would observe the animal, 34 (33.7%) said they would run away while 5 (4.9%) would kill the animal. A total of 99 (98.01%) were of the attitude that they would complete the vaccination schedule as suggested by the doctor.

Practice: Among the study participants 30 (29.7%) had pet dog and among them only 19 (63.33%) had vaccinated their pet dogs. A total of 73 (72.23%) participants had practice of washing their wound with soap and water before visiting hospital and only 8 (7.9%) had practice of washing the wound with soap and water for 15 minutes. All of those who had past history of dog bite, completed the schedule of anti-rabies vaccine as prescribed by the doctor. A total of 408 (96.23%) participants agreed to consult health professional if bitten by dogs

Association of knowledge, attitude and practices of the participants with their socio-demographic characteristics

A statistically significant association was found between knowledge of the participants and socioeconomic status of the participants ($\chi^2=6.48$, $df=1$, $p=0.011$) (Table 3). Attitude score was not found to be statistically associated with any of the socio-demographic characteristics of the participants (Table 4). Practices of the participants was found to be associated with the educational status of the participants ($\chi^2=4.45$, $df=1$, $p=0.035$) and it was found to be statistically significant (Table 5).

Discussion:

A cross sectional study was conducted among 101 attendees visiting the anti-rabies clinic of an Urban

Primary Health Centre from November 2020 to February 2021. Study results revealed that out of 101 participants, majority i.e., 91 (90.1%) aged less than 45 years with a mean of 24.08 (+17.24) years and median of 18 years. Majority of the participants were males (78.2%), similar to the studies conducted by Jain et al (72%) and Chandan et al (85%).^{[4],[5]}

In the current study, it was observed that 49.5% had adequate knowledge, 82.2% had positive attitude and 70.3% adopted appropriate practices against rabies and its management. Similar findings were observed in a study conducted by Chandan et al where it was seen that 51% of study participant had good knowledge score and 51% had good attitude scores and 45% had good practice scores.^[5] According to the results of this study, it was found that 68.3% of participants were familiar with the disease and 34.7% knew about the source of transmission of rabies. Similar findings were observed in a study conducted by Tiwari et al where it was found that 40.7% were aware, that it could also be transmitted through licks/scratches.^[6] Knowledge about wound management, importance of full course of post exposure prophylaxis, and importance of immunoglobulin after dog bite were known to 44%, 66% and 7.6% respectively. This might be because majority of the participants were educated up to primary school or secondary school. In another study conducted by Kishore et al it was found that though majority of them knew about first aid, they did not have knowledge about anti-rabies immunoglobulin.^[7]

In our study, a positive attitude towards animal bite was seen in 82.2% of the participants and 93.1% would seek treatment from doctor and 88.1% were of the opinion that they would wash the wound. In a study conducted by Chandan et al, it was observed that 51% of the participant would wash their wound with soap and water and 77% would consult doctor.^[5]

In the current study, a statistically significant association was observed between knowledge of the participants and the socioeconomic status, which is similar to the results of a study conducted by Costa et al, where a similar association was observed.^[8]

The lack of knowledge regarding the modes of transmission of rabies, wound management, etc. might translate to higher morbidity and mortality related to rabies. There is a need for sensitization of the community so that their knowledge can be

enhanced and their attitude further can be translated into proper practices for prevention and control of Rabies.

Author Contributions

Conceptualization: NS, AB, RK.

Data curation: NS, AB.

Formal analysis: NS, AB, RK.

Methodology: NS, AB, RK.

Writing - original draft: NS. Writing - review & editing: AB, RK

ORCID-

Dr. Nidhi Singh: <https://orcid.org/0000-0002-2866-1770>

Dr. Aakanksha Bharti: <https://orcid.org/0000-0002-8851-8925>

Dr. Richa Kapoor: <https://orcid.org/0000-0002-0478-7539>

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Tables And Figures

Table 1: Sociodemographic characteristics of the respondents (N=101).

Variable/Category	n (%)
Gender	
Male	79 (78.2%)
Female	22 (21.8%)

Age in years (Range 2-65, Median=18 years)	
0-15	45 (44.6%)
16-30	15 (14.9%)
31-45	31 (30.7%)
46-60	7 (6.9%)
61-75	3 (3%)
Socio-economic status (Modified Kuppuswamy Scale)	
Upper Middle	2 (2%)
Lower Middle	18 (17.8%)
Upper Lower	58 (57.4%)
Lower	23 (22.8%)
Family Size (Range 2-21, Median=5 members)	
≤5	66 (65.3%)
>5	35 (34.7%)
Own a pet (s)	
Yes	31 (30.7%)

No	70 (69.3%)
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Table 2: Knowledge, attitude and practices towards rabies (N=101)

Dimension	Level	Frequency	Percentage
Knowledge	Adequate	50	49.5
	Inadequate	51	50.5
Attitude	Positive	83	82.2
	Negative	18	17.8
Practice	Appropriate	71	70.3
	Inappropriate	30	29.7

Table 3: Association between participant’s socio-demographic characteristics and knowledge.

Sociodemographic Characteristics	Inadequate n(%)	Adequate n(%)	Total n(%)	P-value
Age Group in years				
≤30	31 (51.7%)	29 (48.3%)	60 (59.4%)	0.77*
>30	20 (48.5%)	21 (51.2%)	41 (40.6%)	

Gender				
Male	43 (54.4%)	36 (45.6%)	79 (78.3%)	0.13*
Female	8 (36.4%)	14 (63.6%)	22 (21.7%)	
Occupation				
Unemployed	15 (39.5%)	23 (60.5%)	38 (37.6%)	0.85*
Employed	36 (57.1%)	27 (42.9%)	63 (62.4%)	
Education				
Illiterate	18 (62.1%)	11 (37.9%)	29 (28.7%)	0.18*
Literate	33 (45.8%)	39 (54.2%)	72 (71.3%)	
Socio-economic Status				
Lower	46 (56.8%)	35 (43.2%)	81 (80.2%)	0.01*
Middle	5 (25%)	15 (75%)	20 (19.8%)	

Table 4: Association between participant’s socio-demographic characteristics and attitude.

Sociodemographic Characteristics	Positive n(%)	Negative n(%)	Total n(%)	P-value
Age Group in years				
<30	50 (83.3%)	10 (16.7%)	60 (59.4%)	0.71*
>30	33 (80.5%)	8 (19.5%)	41 (40.6%)	
Gender				
Male	64 (81.0%)	15 (19.0%)	79 (78.3%)	0.56*
Female	19 (86.4%)	3 (13.6%)	22 (21.7%)	
Occupation				
Unemployed	34 (89.5%)	4 (10.5%)	38 (37.6%)	0.18*
Employed	49 (77.8%)	14 (22.2%)	63 (62.4%)	
Education				
Illiterate	23 (79.3%)	6 (20.7%)	29 (28.7%)	0.63*
Literate	60 (83.3%)	12 (16.7%)	72 (71.3%)	
Socio-economic Status				

Lower	66 (81.5%)	15 (18.5%)	81 (80.2%)	0.76*
Middle	17 (85%)	3 (15%)	20 (19.8%)	

Table 5: Association between participant’s socio-demographic characteristics and practices.

Sociodemographic Characteristics	Inappropriate n(%)	Appropriate n(%)	Total n(%)	P-value
Age Group in years				
<30	15 (25%)	45 (75%)	60 (59.4%)	0.21*
>30	15 (36.6%)	26 (63.4%)	41 (40.6%)	
Gender				
Male	22 (27.8%)	57 (72.2%)	79 (78.3%)	0.43*
Female	8 (36.4%)	14 (63.6%)	22 (21.7%)	
Occupation				
Unemployed	10 (26.3%)	28 (73.7%)	38 (37.6%)	0.65*
Employed	20 (31.7%)	43 (68.3%)	63 (62.4%)	
Education				

Illiterate	13 (44.8%)	16 (55.2%)	29 (28.7%)	0.03*
Literate	17 (23.6%)	55 (76.4%)	72 (71.3%)	
Socio-economic Status				
Lower	25 (30.9%)	56 (69.1%)	81 (80.2%)	0.76*
Middle	5 (25%)	15 (75%)	20 (19.8%)	