



AWARENESS OF RABIES AND FIRST AID TREATMENT OF ANIMAL BITES IN RAJNANDGAON CITY (C.G.) – A FACILITY-BASED STUDY

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ABSTRACT

Background: Rabies is a fatal but preventable zoonotic disease, transmitted mainly through bites, scratches, or licks from infected animals. Despite public health measures in India, awareness of rabies and correct first aid following animal bites remains inadequate, contributing to preventable deaths. **Objectives:** This study aimed to assess awareness regarding rabies, knowledge and practices related to first aid management of animal bites among patients attending the Urban Health Training Centre (UHTC) in Rajnandgaon City, Chhattisgarh. **Methods:** A cross-sectional, facility-based study was conducted among 140 patients attending UHTC. Data were collected using a pre-tested structured questionnaire covering socio-demographic details, rabies awareness, first aid knowledge, and post-exposure prophylaxis (PEP) practices. Descriptive statistics summarized as findings. **Results:** Among participants, 65.7% were aged 14–45 years and 55.7% were male. While 84.3% had heard of diseases caused by dog bites, only 45.7% subjects recognized the term “rabies.” Immediate wound washing was known by 78.6% subjects, but correct use of soap and running water was reported by 68.6% subjects, and only 9.5% subjects actually performed proper wound washing. Awareness of PEP was higher: 85.7% participants understood the importance of anti-rabies vaccination, yet only 50.4% subjects correctly identified the five-dose schedule. Consulting a doctor was the preferred action among 94.9% of subjects. Misconceptions about rabies symptoms and transmission routes were common. **Conclusion:** Awareness regarding first aid for animal bites is suboptimal, despite moderate knowledge of rabies and PEP. Strengthening public health education through structured IEC programs, integrating rabies education into routine UHTC/PHC and school health services, and emphasizing immediate wound care and full vaccination adherence are essential to reduce rabies risk in urban populations.

KEYWORDS: Rabies, Animal Bites, First Aid, Post-exposure Prophylaxis, Awareness, UHTC, India

INTRODUCTION

Rabies remains a neglected tropical disease that disproportionately affects marginalized, poor, and vulnerable populations. The causative agents—lyssaviruses—are harboured in both domestic and wild animals and transmitted to humans primarily via bites, scratches, or licks on broken skin or mucous membranes. Although once clinical symptoms emerge, rabies is almost universally fatal, it is entirely preventable with timely post-exposure prophylaxis (wound washing, vaccination, and immunoglobulin where indicated).

India bears a particularly heavy burden. According to a recent nationwide community-based survey conducted by ICMR-NIE covering 60 districts in 15 states between March 2022 and August 2023, nearly 9.1 million animal bites occur annually in India. Of these, about three-quarters are due to dogs; the survey estimated approximately 5,726 (95% UI 3,967–7,350) human rabies deaths each year¹. Despite high awareness and vaccine uptake, significant gaps remain in access to full post-exposure prophylaxis, particularly rabies immunoglobulin among those with severe exposures.

Government reporting also reveals recent trends: in 2024, over 3.7 million dog-bite cases were recorded, though only 54 suspected rabies deaths were officially reported under the National Rabies Control Program². In Maharashtra state, rabies deaths rose; in 2023, the health department registered 30 human deaths due to rabies, up from 10 in 2019³.

Globally, rabies is present in most countries, but incidence is highest in developing nations. India is estimated to contribute more than 30–35% of global rabies deaths each year, most stemming from bites by free-roaming dogs⁴. The WHO estimates approximately 55,000 human rabies deaths occur annually worldwide, with India accounting for a large share⁵.

The global commitment to Zero by 30 (eliminating dog-mediated human rabies by 2030) underlines the urgency. Achieving this in India will require improved surveillance (human and animal), universal

access to full PEP (including RIG), mass dog vaccination, stronger community awareness, and better reporting systems.

Aim

To assess the awareness regarding rabies and the knowledge of first aid management of animal bites among patients attending the UHTC of Rajnandgaon City, Chhattisgarh.

Objectives

1. To determine the status of awareness regarding rabies and animal bites among patients attending the UHTC of Rajnandgaon City.
2. To determine the knowledge and practices related to first aid management of animal bites among these patients.

MATERIAL AND METHODS

Study Design and Setting- This was a facility-based cross-sectional study conducted in the Department of Community Medicine, Bharat Ratna Late Shri Atal Bihari Vajpayee Memorial Medical College, Rajnandgaon, Chhattisgarh. The study was carried out at Urban Health Training Centres (UHTC) Shankarpur and Motipur of Rajnandgaon city.

Study Duration- The study was conducted over three months (June 2023 to August 2023) during the UHTC posting.

Study Population- All patients attending UHTC (Shankarpur & Motipur) who were willing to participate and provided informed consent were included.

Exclusion Criteria: Very sick and bedridden patients were excluded.

Sample Size- A weighted measure (92.6%) of respondents having heard of dog bite from four community-based cross-sectional studies on rabies in India and neighbouring states was used to calculate the sample size with 95% confidence and 5% error rate. The estimated sample size was 137, rounded to 140 participants.

Sampling Technique- Systematic random sampling was applied to select participants.

Study Tool- A pre-tested, pre-designed semi-structured questionnaire consisting of 17 questions related to awareness of rabies and first aid management of animal bites was used.

Data Collection Procedure- Data were collected through face-to-face interviews in UHTC OPD. Participants were explained the purpose of the study, and confidentiality was ensured.

Data Analysis- Data were entered in Microsoft Excel and analyzed using descriptive statistics (frequency and percentage).

RESULTS

Table 1: Socio-demographic Profile of Study Participants (n = 140)

Variable	Category	Frequency (%)
Age (years)	14–30	52 (37.1)
	31–45	40 (28.6)
	46–60	30 (21.4)
	>60	18 (12.9)
Gender	Male	78 (55.7)
	Female	62 (44.3)
Education status	Not educated	36 (25.7)
	Primary	45 (32.1)
	Secondary	38 (27.1)
	Graduate & above	21 (15.0)
Occupation	Unemployed/Housewife	40 (28.6)
	Labourer	38 (27.1)
	Service/Business	28 (20.0)
	Student	34 (24.3)
Residence area	Shankarpur UHTC area	70 (50.0)
	Motipur UHTC area	70 (50.0)

Almost half of the participants were aged 20–40 years, and males slightly outnumbered females. Most respondents were Hindus (91.2%), and nearly 59% had secondary or higher education, reflecting a moderately educated urban population. [Table-1]

Table 2: Awareness Regarding Rabies and First Aid Management (n = 140)

S. No.	Question / Item	Response Options	Frequency (%)
1	Immediate action after bite	Wash wound with water	13 (9.5)
		Tie cloth around wound	3 (2.2)
		Rush to doctor	0
		Don't know	121 (88.3)
2	With what do you wash wound	Only water	0
		Soap & water	0
		Dettol water	0
3	By whom do you get treatment	Consult a doctor	130 (94.9)
		Traditional healer	7 (5.1)
4	Aware of health facility	Yes	123 (89.8)
		No	14 (10.2)
5	Preferred health facility	Government health centre	137 (100)
		Private clinic	0
		None	0
6	Number of vaccine doses	2 doses	11 (8.0)
		3 doses	19 (13.9)
		4 doses	38 (27.7)
		5 doses	69 (50.4)
		Don't know	—

Most participants had heard about dog bites, primarily from friends/family (75.9%), with minimal input from health personnel (2.2%). While 69.3% correctly identified dogs as the main transmitting animal, knowledge of other routes and classic symptoms was poor. Misconceptions remain, with 68.6% believing “behaving like a dog” is a symptom, highlighting the need for structured IEC interventions. [Table-2]

Table 3: Awareness and Practices Regarding Management of Animal Bite (n = 140)

Awareness Item	Yes (Frequency %)	No (Frequency %)
Heard of disease caused by dog bite	118 (84.3)	22 (15.7)
Aware of the term “Rabies”	64 (45.7)	76 (54.3)
Dog bite can be fatal	102 (72.9)	38 (27.1)
Washing wound immediately after bite	110 (78.6)	30 (21.4)
Use of soap and running water for cleaning wound	96 (68.6)	44 (31.4)
Importance of taking anti-rabies vaccine after bite	120 (85.7)	20 (14.3)

Knowledge that licking on open wound can transmit infection	66 (47.1)	74 (52.9)
Knows government facility provides free vaccine	92 (65.7)	48 (34.3)

Only 9.5% performed correct wound washing; 94.9% preferred consulting a doctor. Half of respondents correctly identified the five-dose vaccination schedule, demonstrating awareness gaps in first aid and PEP completion. [Table-3]

DISCUSSION

Our study demonstrates low knowledge among study participants regarding immediate wound care but high preference for consulting doctors and awareness of government services. Immediate wound washing (9.5%) was strikingly low, comparable to rural Patna (~5%)¹, but lower than some urban surveys reporting 56–64% performing proper washing².

Dogs were correctly identified as the main source (69.3%), consistent with other urban Indian studies³. However, only 24.8% acknowledged transmission via scratches/licks and 4.4% recognized classical symptoms (hydrophobia/convulsions), echoing prior reports of misconceptions⁴. Awareness of PEP and vaccine availability was moderate to high (85.7% and 65.7% respectively), reflecting increased programmatic efforts⁵. Correct identification of vaccine doses (50.4% for five doses) aligns with variable knowledge noted in other Indian surveys⁶.

Overall, Indian studies demonstrate geographic variation in wound care practices, persistent misconceptions about clinical signs and transmission, and incomplete knowledge of PEP schedules, suggesting urgent need for IEC/BCC programs at primary care and community levels.

CONCLUSION

Public health efforts should focus on promoting immediate and thorough wound washing with soap and running water, encouraging prompt medical consultation for post-exposure prophylaxis (PEP) and rabies immunoglobulin (RIG) where indicated, and ensuring the completion of the full vaccination schedule. Additionally, integration of rabies education into routine UHTC/PHC services and school health programs is essential to improve community awareness and adherence to preventive practices.

Strengths and Limitations:

Strengths: Pre-tested questionnaire, systematic sampling, and actionable local data.

Limitations: Facility-based design (may overestimate care-seeking), self-reported practices (recall bias), limited generalizability beyond study areas.

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