

**PROFILE AND TREATMENT-SEEKING BEHAVIOUR OF DOG BITE PATIENTS ATTENDING A TERTIARY HEALTH CARE CENTRE: A CROSS-SECTIONAL STUDY**

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ABSTRACT **Background:** Dog bites are a significant public health issue in India and the leading cause of human rabies, which remains almost universally fatal once symptoms appear. Understanding the socio-demographic profile and treatment-seeking behaviour of dog bite victims is vital to improving prevention and control measures. **Objectives:** To describe the socio-demographic characteristics, exposure profile, and treatment-seeking behaviour of dog bite patients attending a tertiary care centre in Himachal Pradesh. **Methods:** A hospital-based cross-sectional study was conducted at Dr. Radhakrishnan Government Medical College (RKGMC), Hamirpur, from October 2024 to March 2025. Secondary data from the animal bite register were supplemented with telephonic interviews. Descriptive statistics were applied using SPSS v2.0. **Results:** of 257 registered dog bite cases, 204 patients were included in the study. Males constituted 69.6%, and 71.1% were from rural areas. The 19–40 years age group was most affected (38.2%). Stray dogs were responsible for 66.7% of bites. Category III bites constituted 61% of cases. Only 28.4% practiced proper wound washing, while 42.2% performed no wound care. Although 86.8% sought treatment within 24 hours, ARV completion dropped from 91.2% (second dose) to 55.4% (fourth dose). Among Category III bites, 58% received rabies immunoglobulin (RIG). **Conclusion:** Dog bites predominantly affect rural young males. Despite awareness of rabies, poor wound management, delayed reporting, and incomplete prophylaxis persist. Strengthened health services, consistent ARV/RIG supply, and community education are essential for rabies control.

KEYWORDS : Dog Bite, Treatment-seeking Behaviour, ARV, Rabies Immunoglobulins.

INTRODUCTION

Animal bites, especially dog bites, remain a major public health concern in developing countries, including India. Rabies—primarily transmitted through dog bites—is almost always fatal once clinical symptoms appear but can be prevented through timely post-exposure prophylaxis (PEP) [1]. Globally, rabies causes an estimated 59,000 human deaths annually, with India accounting for nearly 36% of these [1]. Dog bites contribute not only to rabies transmission but also to physical injury, secondary infections, psychological trauma, and economic burden. Effective rabies prevention depends on proper wound care, prompt administration of anti-rabies vaccination (ARV), and use of rabies immunoglobulin (RIG) for severe exposures [2]. Despite effective interventions, challenges persist in India: delayed reporting, incomplete vaccination, and reliance on traditional or harmful home remedies [3]. Treatment-seeking behaviour is influenced by socio-demographic factors, awareness, accessibility, cost, and cultural beliefs [4,5]. This study was conducted to assess the socio-demographic profile, exposure characteristics, and treatment-seeking behaviour of dog bite patients attending a tertiary health centre in Himachal Pradesh. The findings aim to inform strategies to strengthen rabies prevention, improve community awareness, and ensure adherence to PEP.

Methods**Study Design**

A hospital-based cross-sectional study was conducted.

Study Setting and Duration

The study took place in the casualty department of Dr. Radhakrishnan Government Medical College (RKGMC), Hamirpur, Himachal Pradesh, from October 1, 2024, to March 31, 2025.

Study Population

All dog bite cases registered in the animal bite register during the study period were included. Out of 257 registered cases, 31 refused participation, 16 had invalid contact numbers, and 6 did not respond. Thus, 204 participants were finally included.

Data Collection

Data were extracted from the animal bite register and supplemented through telephonic interviews using a pretested, semi-structured questionnaire. Variables included demographic data, site and category of bite, wound care practices, and vaccination details.

Ethical Considerations

Verbal consent was obtained from participants. Confidentiality and anonymity were maintained throughout the study.

Data Analysis

Data were entered in Microsoft Excel and analyzed using SPSS v2.0. Categorical variables were expressed as frequencies and percentages; continuous variables as means.

RESULTS**Socio-demographic Profile**

Table 1. Socio-demographic Characteristics of Study Participants (n = 204)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	142	69.6
	Female	62	30.4
Age group (years)	< 18	57	27.9
	19–40	78	38.2
	> 40	69	33.8
Residence	Rural	145	71.1
	Urban	59	28.9
Occupation	Students (All studying in schools and colleges)	55	26.9
	Working class (Govt. & private employees/shopkeepers/laborers, etc.)	104	51
	Other (Farmers/ old age/ housewives/ children, etc.)	45	22.1

Table 1 shows that, out of 204 dog bite patients, 69.6% were male and 30.4% were female. The maximum number of victims (38.2%) were in the 19–40 years age group, followed by those above 40 years (33.8%). The majority (71.1%) belonged to rural areas. In terms of occupation, about half (51%) were working class, followed by students (26.9%), and 22.1% were from other occupations.

Table 2: Categories of the Dogs (n = 204).

Variable	Number	% age
Pet	68	33.3
Stray	136	66.7

Table 2 shows that most (66.7%) of the dog bite victims were bitten by stray dogs.

Table no. 3: Time of Bite (n = 204)

Variable	Number(percentage)
12 am – 8 am	20 (10%)
8 am – 4 pm	132 (65%)
4 pm – 12 am	52 (25%)

Table 3 shows that most cases were bitten between 8 am and 4 pm.

Exposure Characteristics

Table 4. Characteristics of Dog Bites Among Study Participants (n = 204)

Variable	Category	Frequency (n)	Percentage (%)
Site of Bite	Hand & arm	93	45.6
	Leg & feet	89	43.6
	Face	10	5
	Thigh	8	4
	Abdomen & Back	4	2
Category of Bite	Category I	25	12
	Category II	55	27
	Category III	124	61

The most common site of bite was the hand and arm (45.6%), followed closely by the leg and feet (43.6%). Face, thigh, and abdomen/back were less commonly affected. Regarding the category of bite, Category III bites (severe exposure) were the most frequent (61%), indicating a higher proportion of serious exposures requiring full post-exposure prophylaxis.

Table 5: Pre-treatment Practice (n = 204).

Variable	Number (N=204)	% age
Washed the wound immediately with soap and water at home	58	28.4
Washed the wound immediately and applied the traditional medicines	34	16.7
Applied only traditional medicines	26	12.7
No wound care at home	86	42.2

Out of a total of 204 respondents, 28.4% (n=58) reported washing the wound immediately with soap and water at home. Another 16.7% (n=34) washed the wound and subsequently applied traditional medicines. About 12.7% (n=26) applied only traditional medicines without washing the wound, while the largest proportion, 42.2% (n=86), reported not providing any wound care at home.

Table 6: Duration Between Bite and Visit (n = 204).

Variable	Number (N=204)	% age
Immediately	65	31.8
Up to 24 Hours	112	55
>24hrs	27	13.2

Among the 204 respondents, 31.8% (n=65) sought treatment immediately after the incident, while 55% (n=112) did so within 24 hours. A smaller proportion, 13.2% (n=27), sought treatment after more than 24 hours.

Table 7: ARV Status (n = 204)

Variable	On time		Not received	
	Number	% age	Number	% age
2nd dose	186	91.2	18	8.8
3rd dose	159	77.9	45	22.1
4th dose	113	55.4	91	44.6

ARV

Most patients (92%) initiated ARV, but compliance decreased with subsequent doses. While 70% received the 2nd dose on time, this fell to

61% for the 3rd dose and 44% for the 4th dose. Nearly 18% missed at least one dose. RIG was indicated in 124 patients (those with Category III bites), but only 72 (58%) received it, mainly due to non-availability or cost barriers.

DISCUSSION

The study highlights that dog bites continue to pose a substantial health risk in Himachal Pradesh, primarily affecting rural young males. The predominance of males (69.6%) and the 19–40 years age group aligns with studies from Karnataka [2], Rajasthan [3], and Shimla [4], where increased outdoor exposure was linked to higher risk. The rural majority (71.1%) reflects limited access to health facilities and awareness, consistent with findings from Punjab and Haryana [6,9].

Stray dogs were responsible for most bites (66.7%), echoing reports from Mumbai [8] and Bangalore [10]. This indicates an urgent need for effective stray dog management through vaccination and sterilization programs under municipal authorities.

The majority of bites involved hands and legs—similar to observations in North India and Puducherry [7,11]—suggesting defensive injuries during attacks. Category III bites were most common (61%), underscoring the severity of exposures reported to tertiary centres.

Wound care practices were suboptimal: less than one-third washed wounds properly, and many used traditional remedies such as turmeric or lime. Similar patterns were noted in Punjab [9] and Ambala [14]. Inadequate first aid increases the risk of rabies transmission and secondary infections.

Treatment-seeking behaviour was moderately satisfactory, with most patients reaching facilities within 24 hours. However, delayed cases (13.2%) still pose a risk. Similar delays have been reported in Rajasthan and Maharashtra [3,8].

ARV compliance declined over time—only 55.4% completed the fourth dose on schedule—consistent with earlier findings from Ambala [14] and Bangalore [10]. The major reasons may include lack of awareness, long vaccination schedules, or travel costs. Only 58% of eligible patients received RIG, often due to cost and non-availability—an issue repeatedly highlighted in studies across India [8,11,12].

These findings reveal systemic gaps in rabies prevention despite available resources. Strengthening the National Rabies Control Programme (NRCP) through reliable vaccine/RIG supply, awareness campaigns, and follow-up mechanisms (SMS or phone reminders) could significantly improve compliance. The study underscores the importance of intersectoral collaboration (human and animal health) under the “One Health” framework to achieve the WHO’s target of zero human rabies deaths by 2030 [1].

CONCLUSION

Dog bites remain a preventable but serious public health issue in Himachal Pradesh. Most victims are young rural males bitten by stray dogs, with high proportions of severe (Category III) bites. Harmful home remedies, delayed reporting, incomplete ARV schedules, and inadequate RIG administration persist as major challenges.

Recommendations

1. Community education: Promote immediate wound washing, avoidance of traditional remedies, and timely medical reporting.
2. Strengthen health infrastructure: Ensure consistent ARV and RIG supply in rural facilities.
3. Improve ARV compliance: Use SMS or telephonic reminders for follow-up doses.
4. Stray dog control: Implement vaccination and sterilization drives under municipal and veterinary collaboration.
5. Health worker training: Train frontline staff in PEP protocol and community awareness dissemination.

REFERENCES

1. WHO. Global Rabies Report 2024. Geneva: World Health Organization; 2024.
2. Holla R, Darshan BB, Nagesh KN, Naik VA, Kotnis SD, Mallapur MD. Profile of dog bite cases attending anti-rabies clinic of a tertiary care centre in North Karnataka, India. *Int J Community Med Public Health*. 2017;4(9):3393–8.
3. Choudhary A, Jain S, Gupta S, Jain P. Epidemiological profile of animal bite cases attending anti-rabies clinic at a tertiary care centre of Rajasthan, India. *Int J Community Med Public Health*. 2018;5(7):2951–5.
4. Sharma S, Agarwal A, Singh A, Chauhan N. A study of dog bite cases attending emergency department of IGMC Shimla, Himachal Pradesh. *Int J Community Med Public Health*. 2017;4(12):4701–5.

5. Dhiman A, Thakur A, Mazta SR. Treatment seeking behavior of dog bite patients in Himachal Pradesh: a qualitative study. *Int J Community Med Public Health*. 2024;11(4):1591–7.
6. Bhardwaj A, Sharma S, Jain P, Gupta S. Treatment-seeking behaviour and knowledge about rabies among patients in Patiala, Punjab. *Int J Community Med Public Health*. 2019;6(9):3909–14.
7. Krishnamoorthy Y, Vijayageetha M, Sarkar S. Awareness about rabies and treatment seeking behaviour following dog-bite in rural Puducherry. *Int J Community Med Public Health*. 2018;5(7):2959–64.
8. Gogtay NJ, Nagpal A, Mallad A, Patel K, Stimpson SJ, Belur A, et al. Demographics of animal bite victims and management practices in Mumbai. *Indian J Med Res*. 2014;139(3):459–62.
9. Singh A, Rochwani R. Sociodemographic profile and treatment-seeking behaviour of animal bite patients at Patiala, Punjab. *Int J Community Med Public Health*. 2020;7(4):1476–81.
10. Bangalore T, Chandrasekhar G, Joseph B, et al. Health seeking behaviour and PEP among animal bite victims in Bangalore. *F1000Research*. 2024;13:1456731.
11. Subramanya SU, Kembhavi RS. Profile of dog bite cases reporting to ARV OPD of a tertiary hospital. *Int J Community Med Public Health*. 2019;6(4):1769–73.
12. Umap RV, Masare MS, Khakse GM. Compliance to anti-rabies PEP among dog bite patients at a tertiary care centre. *Int J Community Med Public Health*. 2025;12(5):2391–6.
13. WHO. Rabies vaccines: WHO position paper. *Wkly Epidemiol Rec*. 2018;93(16):201–20.
14. Compliance to post-exposure prophylaxis among dog bite victims attending ARV clinic in Ambala, Haryana. *Community Med Pract*. 2024;7(4):349–54.