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Research Article

Treatment seeking behavior of the dog bite patients in Himachal Pradesh, India: a qualitative study

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ABSTRACT

Background: Rabies is a practically 100% fatal zoonotic disease. A person is bitten every 2 seconds, and someone dies from rabies every 30 minutes. In this regard perception of victim and their attitude towards treatment forms an important role for prevention against rabies. It is noted that in Himachal Pradesh the less knowledge of people about rabies, impact of traditional healers and unavailability of the RIGs and ARVs especially in the primary health centers affect the treatment seeking behavior of the patients.
Methods: A qualitative study was done in the three districts of Himachal with effect from 1st June 2014 to 30th May 2015. Thematic and simple proportional analysis of the data was done for the interpretation of the results.
Results: Males were more victims as compared to females. Most affected age group was 0-15 years. 56.93% of the patients immediately washed the wound, 43.38% of the patients opted the rational treatment where as 57.62% used both traditional as well as rational treatment. Delay and drop out was seen in 69.24% and 21.53% of the patients respectively.
Conclusions: Treatment seeking behaviour of the patients affected by the number of factors. Awareness among people about rabies and ensuring the availability of RIGs and ARV at all the levels of health care centers is necessary.

Keywords: Rabies, Traditional, Dog bite, PHCs and PEP

INTRODUCTION

With the close association of dogs and humans in daily life, dog bites are common, inflicting the injuries which range from minor to significantly major. Prior to the rabies epidemic of 1870, dog had become a reliable and much loved human companion as well as icon of moral virtues but as rabies took hold of the public imaginations, the dog acquired more negative connotations.[1] There is no global estimates of dog bite incidence; however studies suggest that dog bites account for tens of millions of injuries globally.[2]

Himachal Pradesh is one of northern state of India. It is predominantly rural and hilly where villages are near forests with wild reservoirs of rabies. In Himachal Pradesh 24,000 to 25,000 dog bite cases occur every year.[3]

In addition to causing pain, injury and mental trauma, dogs are the source 100% fatal disease known as rabies. Dogs contribute up to 99% of all rabies transmissions to humans and cause tens of thousands of deaths every year, mostly in Asia and Africa.[4] In India approximately 20, 000 of an estimated global annual 55,000 rabies deaths occur and three-quarters of these deaths occur in rural areas.[5] There is no system of confirmation of the suspected rabies deaths in laboratory which lead to the under estimation of the rabies deaths.

Rabies is a 100% fatal zoonotic disease; but easily preventable with immediate wound washing and timely

complete post exposure prophylaxis. In this regard perception of victim and their attitude towards treatment forms an important role for prevention against rabies. In Himachal Pradesh dog bite patients cause delay in the treatment and other does not complete the treatment. Treatment seeking behaviour of the patients highly influenced by the impact of the traditional healers which develop false sense of security. Availability of RIGS and anti-rabies vaccines in health institutions especially in the primary health centers and less knowledge of people about rabies are important issues which affect the treatment seeking behaviour of the patients.

METHODS

A qualitative study was done with effect from June 2014 to May 2015.about the treatment seeking behavior of the dog bite patients. Data of the dog bite cases of Himachal Pradesh was obtained from the Directorate of health services (HP) with effect from 2011 to 2013. We selected three districts which reported higher number of dog bite cases in this period. After that one CHC selected from each district on the basis of highest number of the dog bite cases in year 2013.[3]

Secondary data of dog bite patients was collected from the OPD register of selected institutions from January to December 2013 .Patients were traced from their address in the OPD register. Out of the 493 patients 92 patients could be traced and 65 patients participated in the study. In-depth interview of the dog bite patients was taken after taking the consent regarding their treatment seeking behavior. Thematic and simple proportional analysis of data was done for the interpretation of results.

RESULTS

Data was collected from CHC Chowari, Syri and Bhavanagar and name of the selected health centers are represented in tables by numerical I, II and III respectively. Total 493 dog bite patients took the treatment in the year 2013. Table1 show the age and sex distribution of the patients.

Table 1: Age and sex distribution of the dog bite patients.

Age group	Male (n-306)	Female (n-187)
0-15	99 (32.35%)	64(34.22%)
16-30	67 (21.89%)	52 (27.81%)
31-45	63 (20.58%)	31 (16.58%)
46-60	49 (16.02%)	25(13.37%)
>60	28 (09.16%)	15 (08.02%)

Males were bitten more than females and most affected age group was between 0-15 years. Least affected victims were above 60 years.

Table 2: Types of the home remedies used by the patients.

Institution	I	II	III
Home remedies	Reetha seeds (*Sapindus mukorosse*) Black chili powder.	Kachalu plant (*Colocasia esculenta*) Puthkanda plant (*Achyranthes aspera*)	Burnt hairs of biting dogs Bichoo booti leaves. (*Urtica dioica*) Cow dung.

Analysis of the responses of the dog bite patients

Out of the total 493 patients 92 patients could be traced and 65 participated in the interview. The analysis of the responses of the dog bite patients is under following themes:

1. Wound washing practices

2. Rational treatment

3. Traditional treatment

(a) Home remedies

(b) Treatment from traditional healers

4. Delay in seeking the rational treatment

5. Drop out in the treatment

Table 3: Types of the traditional treatment.

Institution	I	II	III
Traditional practice	Mantra bound water Money order based treatment	Mantra bound rice, jaggery and water. Sacred thread/amulet	Mantra bound water Vibhuti.

Wound washing: From the interview of the 65 dog bite patients it is seen that 43.07% of the patients immediately washed the wound (Figure 1).

Among the 43.07% patients who washed the wound knew about the importance of wound washing and some of them even washed the wound for 10 to 15 minutes with soap and water.56.93% patients did not washed the bite wound. 'Jakham ko agar paani se dhoyen to jakham aur khrab ho sakta hai'. **(**Washing of wound with water can cause sepsis**)** said one patient.

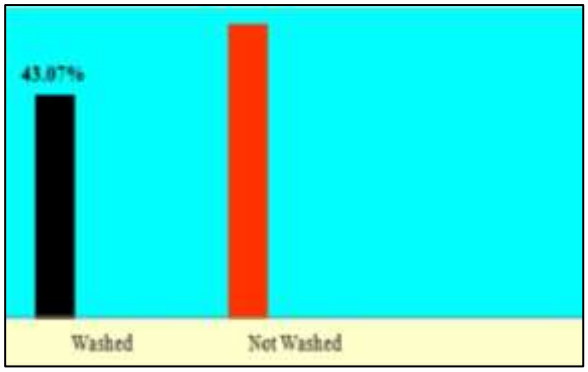

Figure 1: Immediate wound washing practice.

Treatment practices opted: Out of the 65 patients only 42.38% of the patients opted for rational treatment where as 57.62% used both traditional as well as rational treatment (Figure 2).

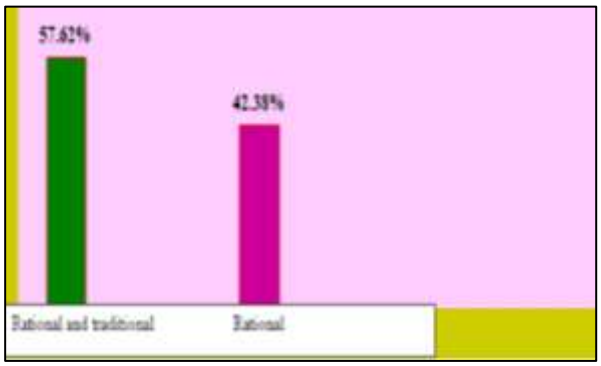

Figure 2: Treatment practices opted by patients.

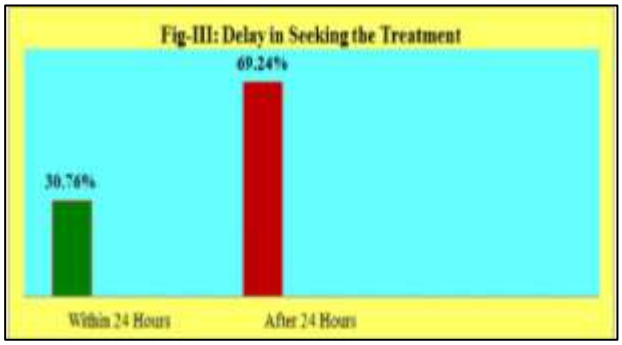

Figure 3: Delay in seeking the treatment.

Rational treatment

Among 65 patients 42.38% opted only the rational treatment. These patients had knowledge about the fatality of disease and they knew that timely post exposure prophylaxis can prevent the rabies. Other patient said **'**mere uncle ko kutte ne kaata tha unhone ghrelu upchaar kiya tha aur vo 12 dinon ke baad mar gaye, Is baar mere bête ko kutte ne kaata par is baar mein jaldi se hospital chala gaya**'** (My uncle was bitten by the dog and he had applied home remedies and taken the traditional treatment, and he had died after 12 days due to rabies, this time my son was bitten by the pet dog but I immediately went to hospital for treatment).

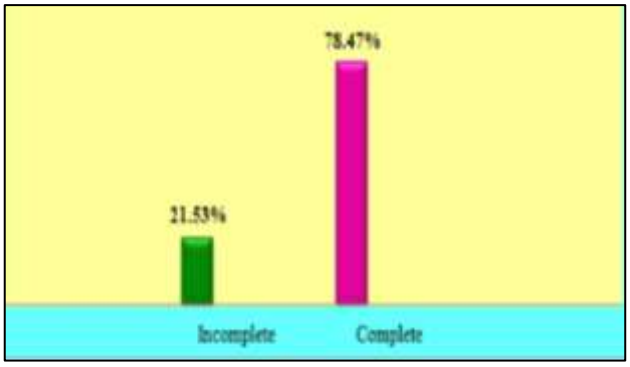

Figure 4: Post exposure prophylaxis compliance.

Some patients had only gone for the wound care because wound was large which proved as protective factor for the patient. 'Mujhe kutte ke katne se kafi bada jakham ho gya tha, jiska illaz karwane mein hospital aaya tha wahan doctor ne mujhe rabies se bachne ke liye injection lagbane ko kaha' (I had gone to hospital for only the treatment of the wound, doctor advised me for anti-rabies vaccination about which I had no knowledge).

Traditional treatment

Traditional treatment includes:

- Home remedies used by the patients in their home after the bite.
- Treatment taken from the traditional healer.

Home remedies

From the interview it is found that dog bite patients used the home remedies before coming to the hospital. The table 2 shows home remedies used by the people in the areas of the CHCs surveyed.

Some patients think that home remedies are sufficient to treat the dog bites. Patients have different perceptions about the treatment. 'Kachalu ko lagaane se jakham me jalan aur dard hota hai jis se ki jehar nikal jaata hai aur nahin failta' (Kachalu cause severe irritation and pain, due to this poison is removed from the site of bite) said the attendant of the child who was bitten by the dog. Communities are using these home remedies in dog bite cases for decades. **'**Hamare poorvaj mirchi aur haldi ka powder lagate the' (Our ancestors used to apply the paste of chili and turmeric on the bite) said a dog bite patient.

Treatment from traditional healer

Traditional healers are very famous in the villages because they are easily accessible and give the cost effective treatment. Table 3 shows the type of the

treatment given by the traditional healers in different areas.

'Mere gaon me bahut se aise log hain jinhone kabhi kutte ke katne par ya to koi illaz nhi karwaya ya phir sirf ghrelu upchar kiya aur phir bhi wo sab theek hain.' (There were many people in my village that either had not sought treatment for dog bites or had taken only traditional remedies and he is still healthy). Due to this trust of people in traditional treatment become more strong.

Mantra bound water is very common traditional treatment provided by the traditional healers in the areas surveyed. 'Paani shareer mein se kutte ke kaatne se jo jehar failta hai usko nikalta hai' (Mantra bound water removes the poison of dog bite from the body) as told by the dog bite patient**.**

Delay in seeking the treatment

From the in-depth interview of the dog bite patients it is seen that 69.24% came 24 hours after the dog bite for the treatment (Figure 3).

Distance of the health centre from the house of the victim is an important factor for delay in the treatment. 'Mera gaon bhabha nagar se 15 km door hai aur 5 km paidal rasta hai' (My village is 15 km from Bhabha Nagar and 5 km is on foot) said dog bite patient who had come on 3rd day after the dog bite. During this time patients use home remedies or go to traditional healers.

Patients who delayed the treatment were worried because they had notion that ARV causes side effects. 'Injection lagaane se garmi hoti hai aur liver par farak padta hai' (Vaccine causes loss of appetite and it affects the liver). 'Meine socha ki kutte ke kaatne ke baad 14 injection lagbaane padte hain' (I was afraid that I will be given 14 injections after the bite) said a patient.

The non-availability of ARV in PHC compels the patients to go to the higher centers which ultimately cause the delay in the treatment. 'Kaatne ke baad mein PHC mein gya par doctor ne bola ki yahan vaccine nahin aati aur mujhe iske liye bade hospital mein jana padega' (After the bite, I had gone to PHC in our village but after giving Tetanus Injection doctor referred me to CHC and said that ARVs supply does not come for PHCs) said the patient of Raipur a village near Chowari.

Drop out

From the in-depth interview of 65 patients 21.53% patients did not completed the schedule of post exposure prophylaxis (Figure 4) There were number of the reasons came out after the interview for drop out.

Patients sometimes show the casual behavior about this fatal disease. **'**Mere saath chalne ke liye koi nahin tha isliye mera last injection choot gaya**'** (I had no one to accompany so I missed last dose of ARV) said Archna a dog bite patient.

Patients like other common and non-fatal diseases think that small injury require less treatment. 'Khronch jaisi thi aur thoda sa khoon nikla tha maine do injection laga liye' (It was very small scratch and I got two shots of vac) said Hardeep.

'Mere ko nahin bataya ki mujhe dobara bhi injection lagbane ke liye aana padega' (I took one injection only because treatment was not explained to me) said Rati Ram who had taken incomplete treatment. The reason for this is that the treatment is not explained to the patients. 'Do injection lagbane mein mere 650 rupey lag gaye teesre injection ke liye mein paison ka intjam nahin kar paya' (I had spent Rs 650 for two vaccines, I could not arrange for the third dose) said by the patient who was a laborer in village at Chowari. Treatment is given free to poor patients who possess BPL card.

DISCUSSION

Patients between the age group of 0-15 years were the maximum dog bite victims and as per the age and sex distribution males were more bitten than females (Table 1). Similar results were seen in the study done by Khan et al. Jain et al.[6,7] Wound care is important, local cleaning of wound after animal bite reduces risk by 80%. In the in-depth interview it is found that 43.07% of the patients had washed the wound immediately. Some patients said that due to washing the wound got infected. Similar findings were seen in the study done by Sekhon et al.[8]

Out of the 65 patients 43.38% of the patients opted the rational treatment where as 57.62% used both rational as well as traditional treatment. The home remedies were varying according to place and culture in Himachal Pradesh. Kachalu, reetha and burnt hairs of the dogs were commonly used home remedies in the selected study areas. The home remedy which causes more pain and irritation is supposed to be more effective to remove the poison from the site of the wound. Patients applied home remedies which have no benefit at all, it causes harm only. Bhargawa et al Menezes et al found the similar findings.[9,10]

But there were also the patients who had taken only the traditional treatment as told by these patients.[28] Among these 28 patients each one knew one person who took only traditional treatment. So by simple mathematical calculation it is found that there are about 6500 patients who took only traditional treatment each year in Himachal Pradesh. There is at least one traditional healer in every village that treats the dog bite cases. Success rate of the traditional healers for the casual observer appear respectable in the view of the low frequency of the rabies transmission mostly by non-rabid biting dogs, variable incubation period, easy accessibility of traditional healers

and very cost effective treatment. Mantra bound water is very common treatment given by the traditional healers.

Those patients who reside near the health institution took treatment early as compared to the patients who stays away from the health institutions. As per Khazaei**,** et al a significant relationship found between delayed PEP and distance of anti-rabies clinic from the place of residence.[11]

But it also came out in the results that patients who even stay near the institution came late in case when bite was small or bitten by pet dog etc. Patients come early in case bitten by the rabid dogs (Running here and there and with saliva drooling and biting without provocation) and with deep injuries.

Due to the unavailability of the ARV and RIG in the PHCs the patients have to go to the secondary or tertiary care centres. As per the results the post exposure prophylaxis is given in the selected institutions and account for the delay in seeking treatment. In rural area bite victims often live far from major health facilities which are located in urban areas, where PEP can be obtained; however, even in these areas the availability of PEP is not guaranteed. Sambo M et al and Patil et al show the similar results**.**[12,13]

Patients bitten by the pet dogs only come to hospital when they were convinced by someone to take the treatment. Some irrelevant reasons also told by the patients that there was no one to accompany them for going to the hospital. Most important reason which emerged is the trust of the people on the home remedies and treatment of traditional healers**.** Some patients prepare the home remedies and apply them on the site of bites because they think it also as the part of the treatment; others go to the traditional healers before coming to the hospital. After giving the treatment traditional healers never advises the patients to take the rational treatment which makes condition of the patient more worse. Community health centers provide 24 hours service but according to some patients hospital are closed on Sunday and Gazetted holidays. Joseph et al. showed the similar results.[14]

In the results especially in district Kinnaur and Chamba, it is found that because of poor road connectivity in some places patients have to go on foot and in other places there are only one to two buses, so patients have to hire the taxi which is costly and every one cannot afford which ultimately causes delay in seeking the treatment. Regime of the treatment is also not explained to patients some times, so after taking one vaccination shot they think that treatment is adequate.

In the present study out of the 65 patients, 21.53 percent patients did not completed the post exposure prophylaxis (Figure 4).Out of these 21.53 percent of the patients had taken the 1st two doses of anti-rabies vaccines. Shankaraiah et al. found the similar results.[15] Sometimes the regime of the treatment is not explained to the patients. There is lack of the knowledge about the disease and course of the treatment among the dog bite patients. Beside this shortage of money, distance from the treatment centre, loss of wages (ARVs present in selected institutions which waste one complete day), forgotten dates and interference with working hours/school timings, were the other factors for the completion of the schedule of anti-rabies vaccine.

CONCLUSION

In Himachal Pradesh four types of the dog bite patients were recognized, one who takes no treatment, second are those who use either home remedies or traditional treatment from traditional healers, third are those who take both rational and traditional treatment and fourth type of the patients are those who take only the rational treatment. Awareness and education of the community including all the school children is necessary to eliminate this fatal disease. By this way impact of traditional medicine which creates false sense of security can be reduced. Accesability of PEP at all the levels of health care is of prime importance.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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