

## Awareness about dog bite management in rural population

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### Abstract

**Background-**Rabies is a major zoonotic disease that is always fatal common in children less than 15 years of age .Most of the deaths occur due to ignorance about urgency of wound management and vaccine administration after dog bite.

**Methods-**A cross sectional study was carried out at Rural Health Training Center attached to Dr DY Patil Medical College, Alandi by interviewing the persons accompanying the patients attending the daily outpatient department and those accompanied by no one or children were excluded, similarly in case of more than one person accompanying the patient, only one adult willing to participate was included in the study . Consecutive patients (persons accompanying) attending RHTC OPD were included for the period of one month i.e. May 1<sup>st</sup> to 31<sup>st</sup> May 2013. The subjects were asked about whether they had a menace of the stray dogs in their area and questions included were to assess various parameters regarding their awareness about dogbite wound management , vaccine administration and misconceptions associated with it .

**Results** –Out of the 300 respondents majority were in the age group of 26-35 years(39.70% males and 45.10% females). Only 112(37.30%) were aware that the dog should be watched for 10 days after dogbite, even in the areas where stray dog menace was present. A crucial knowledge about severity of bite revealed that 238(79.30%) knew that deep wound at any site is considered as severe bite .Less than 10% knew that bites on head ,face or fingers was also a severe bite. It was encouraging to know that more than 85% i.e. 34(87.2%) out of 39(100%) had of had knowledge that wound should be cleaned with soap and water in areas where stray dog menace was present.

**Conclusions-** The large knowledge gap about various parameters of dog bite management in rural population need to be addressed by well planned extensive health education programme (information about need for urgency of wound treatment, type of first aid, severity of bite, different misconceptions, vaccine awareness etc) with the help of volunteers at local level and Rabies control programme at the national level.

**Key words:** Rabies, Rural health Training Center, wound management, misconception, awareness, Dogbite

### Introduction:

Rabies is a communicable disease of man that is always fatal, commonly occurs in children in less than 15 years of age<sup>1</sup>.Majority of deaths caused by rabies occur in rural areas of Africa and about one third are in India, almost 2 per lakh population are estimated to be at risk every year<sup>2</sup>. The irony is that most of the deaths occur due to ignorance about urgency of “first aid management” of wound after dog bite and lack of access to affordable and effective services in health sector. Human exposure to any form of dogbite weather licks/ scratch with or without bleeding carry risk of rabies

and hence need vaccination<sup>3</sup>. Every instance of dog bite should be treated as medical emergency. Prompt and adequate local treatment along with post exposure prophylaxis is effective way by which rabies can be prevented<sup>4, 5</sup>. However lack of awareness about the action to be taken after dog bite makes the victim of dog bite at risk of rabies. Besides the misconceptions associated with wound management make the patient further vulnerable. The present study is an attempt to assess the extent of awareness among the lay people about the dog bite wound management and the knowledge about its vaccination in the rural people.

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### Materials and Methods :

The study was carried out at Rural health Training Centre(RHTC) attached to Community medicine Department of Dr DY Patil Medical College, Pune after ethical clearance was obtained by the institutional ethical committee. Written informed consent was also taken before initiating the interview. Consecutive patients (persons accompanying) attending RHTC OPD were included for the period of one month. The accompanying persons of the patients attending the daily outpatient department were interviewed by pre- designed, pretested questionnaire over a period of one month i.e. from May 1<sup>st</sup> to 31<sup>st</sup> May 2013. The subjects were asked about whether they had menace of stray dogs in their area of residence. Further they were asked questions to assess various parameters regarding their awareness about dog bite management and vaccine administration

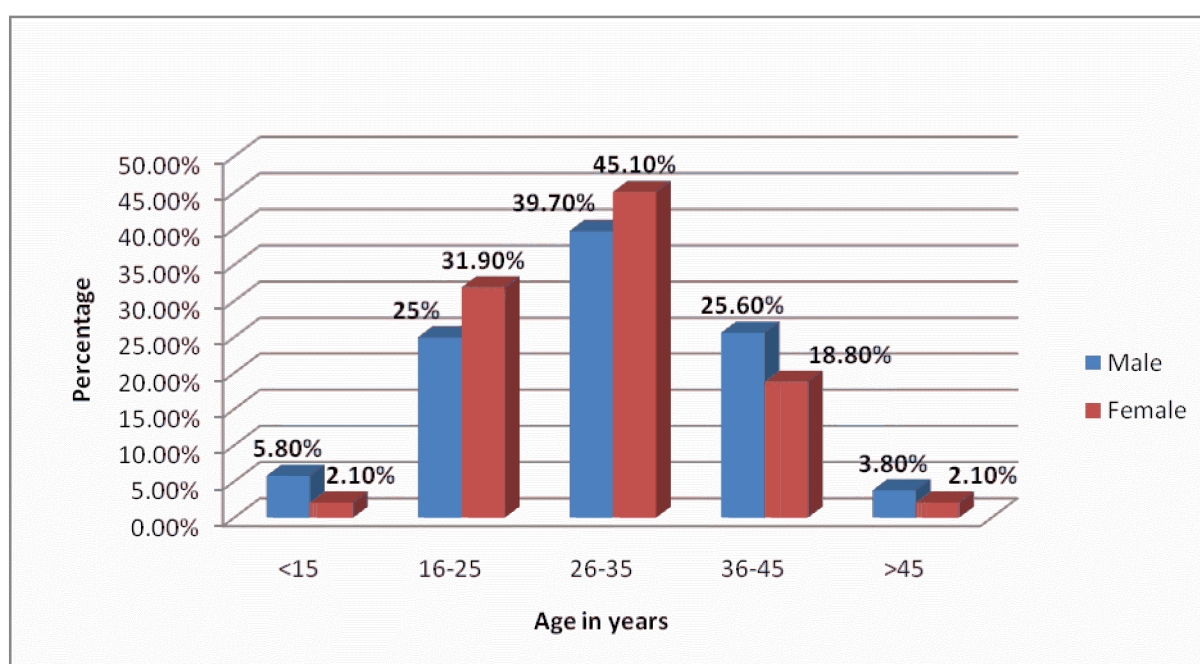
after dog bite. Questions included the information to find out their awareness about need for the urgency of treatment and type of management as first aid after dog bite. They were also asked whether they knew which wounds they regard as severe, what they will do with the dog after the bite and whether they had any misconceptions of application of any ointment, oil, leaves, mud etc on the wound. Those not willing to be interviewed were excluded.

The data collected was entered into Microsoft excel and analysis was done using EPI-Info 2002 from CDC and Primer of Bio-statistics and appropriate statistical test was applied.

### Results:

A total of 300 persons were interviewed comprising of 156 (52%) males and 144 females (48%). The age and sex group distribution of subjects is shown in Fig-I.

**Figure I: Age and Sex distribution of respondents.**



Maximum respondents were in the age group between 26-35 years of age. They were asked about occupation they were engaged in, which revealed that among the males maximum i.e. 63 subjects were labourers (20.9%), followed by 32(10.6%) who were having farming as occupation and 17( 5.6%) were shopkeepers, 66(21.9%) were engaged in other occupations. 123( 40.9%) were housewives. All the subjects were

interviewed to know their knowledge about fatality associated with rabies, it revealed that 272(90.7%) were aware that the disease caused after the dog bite is fatal.

When asked about what should be done with dog after the bite as per the area where menace of stray dog was present, only 112 (37.30%) said that the dog should be watched for 10 days (table I).

**Table I: Respondents knowledge about what to do with dog after the bite**

Menace of stray dogs	Watch the dog (10 days)	Kill the dog	Let the dog go away	Others	Total
Yes	92(82.1)	3(100)	100(83.3)	39(60.0)	234(78.0)
No	20(17.9)	0(0)	20(16.7)	26(40.0)	66(22.0)
Total	112(100)	3(100)	120(100)	65(100)	300(100)

\*Figures in the parenthesis are percentage.

Chi square: 16.22, df=3, p=0.001 (highly significant)

It was important to know that 100 respondents (83.3%) out of 120 who felt that the dog can be left without any observation period were from the area where menace of stray dog was present, while 92 (82.1%) out of 112 who

felt that dog should be under observation for 10 days after it bites were from the same area.

The difference between the knowledge about what to do with dog after it bites in the two areas was found to be highly significant.

**Table II: Knowledge of respondents about Site of dog bite**

Site of Dog bite	Frequency	%
Head and neck	29	9.70%
Upper extremity	8	2.70%
Lower extremity	21	7.00%
Fingers	4	1.30%
Deep wound at any site	238	79.30%

The knowledge of the subjects tested about whether they knew which bites were severe, 238(79.38%) were aware that deep wound at any site is the severe type of bite, less than 10% knew that the bites on head and face or fingers was also considered as severe form of bite. (Table II).

**Table III: Knowledge of respondents about local wound management.**

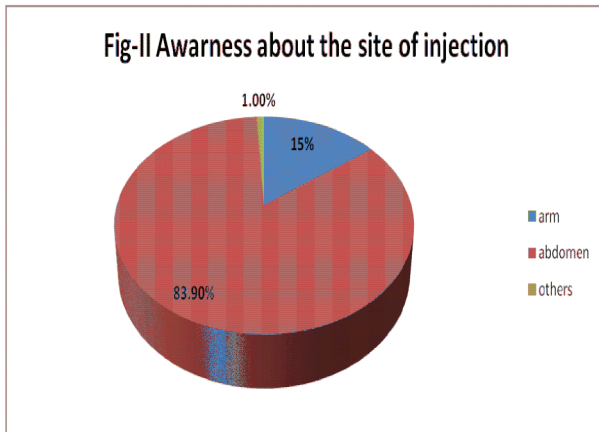
Wound Management	Menace of stray dogs		Total
	Yes	No	
Clean with water	33(63.5)	19(36.5)	52(100)
Clean with water & soap	34(87.2)	5(12.8)	39(100)
Apply disinfectant	155(79.9)	39(20.1)	194(100)
Do nothing	12(80.0)	3(20.0)	15(100)

\*Figures in the parenthesis are percentage.

Chi square=8.762, df=3, P=0.042(significant)

The knowledge of people staying in the area of stray dog menace 33(63.5%) knew that wound should be

cleaned with water, another 34(87.2%) felt that wound should be washed with soap and water. The knowledge was significantly more in the area having stray dog menace (Table III).



When asked about the vaccine administration after dogbite 177(59.0%) felt that it was not affordable for them. The most shocking knowledge was that of site of vaccine administration, 240(83.90%) responded that site of injection was abdomen. (Fig II)

**Table IV: Knowledge about local management of wound after bite as per menace of stray dogs.**

Knowledge about local application on wound	Menace of stray dogs		Total
	Yes	No	
Cow dung	92(82.1)	20(17.9)	112(100)
Mud	3(100)	0(0.0)	3(100)
Ointment	100(83.3)	20(16.7)	120(100)
Leaves	39(60.0)	26(40.0)	65(100)
Total	234(78.0)	66(22.0)	300(100)

\*Figures in the parenthesis are percentage.

Chi square: 84.97, df=3, p=0.001 (highly significant)

About the knowledge about local application on the wound after dog bite (table IV), of the 234 people interviewed from the area who agreed to have menace of stray dogs, significant number i.e 92 believed that cowdung (82%) and 39 felt leaves (60%) can be applied on the wound which is a unfavorable view expressed by local rural people.

#### **Discussion:**

Among the 300 persons interviewed at rural health training centre, majority were adults in the age group of 16 to 35 years. Almost 90.7% knew that the disease caused after dog bite is fatal. Rabies being one of the oldest diseases known to mankind, majority of people in rural area were aware about this crucial fact which may encourage them to seek advice urgently. There was lack of knowledge about the fact that the dog should be watched for 10 days after the dog bite

even in the areas where there was menace of stray dog present<sup>6,7</sup>. In a similar study only 24.2% of individuals knew about type of bites which were considered as severe. The awareness about which bites are severe is very critical as there is need to be aware about urgency of initiation of treatment. There is need to give health education to people in these areas so that the bites especially on head, neck, face, fingers and deep wound at any sites should be given attention immediately. It is recorded by WHO that cleaning and immunization should be started within few hours after dog bite which can prevent onset of rabies and death (WHO).

People in rural area still are not aware about the site of injection after dogbite, as majority i.e 240(83.90%) still reported the site of injection as abdomen, in spite of the fact that government of India has stopped supply of nervous tissue vaccine since 2004<sup>2</sup>. Proactive awareness

about the easy and safe vaccination availability is essential to remove fear of painful nervous tissue vaccine in rural population.

In the areas especially where stray dog menace is present there is need to enhance their knowledge about local wound management as large number of them believed in applying cowdung or leaves on the wound. In other studies also similar findings have been noted<sup>7,8</sup>.

It is encouraging to know that in the areas where menace of stray dogs is present significantly more number of people are aware about the local wound management. Some of the volunteers from the areas can be encouraged to speak to other people in the rural areas so that the awareness can be improved in all areas.

The misconceptions about local applications of cowdung or leaves are dangerous findings which needs to be corrected by extensive health education (Table IV). Similar study also have found such misconceptions of application of oils, herbs, chillies on the wounds and fear of infection by water<sup>6</sup>.

Thus there is knowledge gap in the rural areas about the course of action to be taken after dogbite which needs to be addressed through regular targeted awareness campaigns in the areas especially where menace of stray dogs is present so that people with correct knowledge of what should be done after dog bite in their areas. The private sector through NGOs can be utilized in these areas.

In our study 52.1% felt that washing of wounds with soap and water was beneficial. In the others studies<sup>7,8</sup> similar responses were given 66% and 31% of participants about the first aid after dog bite.

There is strong need to initiate and establish national rabies control program as recommended by WHO to fill the broad gap in awareness of rural population<sup>9,10</sup>. As per recommendation of SAARC Rabies consultation (2003) and subsequent meeting and workshop in 2011, a regionally co-ordinated rabies elimination project with an arm to eliminate rabies by 2020 must be put on record<sup>11</sup>. Creating awareness at the community level about the control of rabies is the best intervention in addition to improvement in knowledge at various stakeholder levels like veterinary, medical, media without which the dream project of elimination may remain utopia.

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