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Research Article

Awareness of animal bite and rabies among agricultural workers in rural Dharwad, Karnataka, India

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ABSTRACT

Background: Agricultural workers are more vulnerable to animal bites. Rabies is one of the most dangerous and completely preventable diseases. It is most commonly caused by bite of rabid dogs. There are many gaps in the knowledge, attitude and practice with regards to animal bite and rabies. So this study was undertaken to study the knowledge, attitude and practice regarding animal bite and rabies among agricultural workers in rural Dharwad, India.
Methods: A cross sectional study was done in rural field practice area of SDMCMSH, Dharwad, India. Data was collected by using pre designed interview schedule from 400 agricultural workers. Data was entered in Epidata v3.1 and analysed using IBM SPSS v20. Descriptive statistics and chi square test were applied. KAP scores were calculated. $p<0.05$ was considered statistically significant.
Results: Average age of study participants was 34.58±13.9 years. 85% were males and 15% females. 88.25% were literates and 11.75% were illiterate. Most of the participants had heard the word rabies (89%). Knowledge score was significantly associated with age and socio economic status. Attitude score was statistically significantly associated with age, religion and socio economic status. Practice score was significantly associated with age, socio economic status and religion.
Conclusions: Agricultural workers had fair knowledge about animal bite and rabies. Still there are lot of gaps in knowledge, attitude and practice with respect to prevention and treatment of rabies which have to be addressed by educating them.

Keywords: Rabies, Agricultural workers, Knowledge, Gaps

INTRODUCTION

Rabies is an enzootic and epizootic disease of worldwide importance. In India, rabies is a zoonotic problem of considerable magnitude. Annual mortality more than 30,000 cases reported by national authorities may not be a complete picture because; since 1985 India continues to report the same number of cases every year. It is estimated that number of deaths due to rabies may be 10 times more than those reported. Every year approximately 1.1 to 1.5 million people are receiving post exposure prophylactic treatment. Although 2 million animal bites occur each year in India, out of which more than 95% of cases are bitten by dogs[1]. Rabies in India has been a disease of low public health priority in the medical sector.

This is very unfortunate as almost 65,000 people across the globe and 20,000 people in India die of rabies every year, making it the country with the highest rabies fatalities in Asia and the second highest in the world.[2] Most of the deaths are due to ignorance and lack of access to affordable services. The owned dog population is estimated to be over 25 million in India.[1]

There are many myths and false beliefs associated with animal bite wound management. These include application of oils, herbs, and red chillies on the wounds. People have more faith in indigenous medicines that are of unproven efficacy. Not washing the wound properly because of fear that it would get infected is one of the prevailing myths.[3]

Earlier many studies have been done on medical students, health care professionals, veterinary personals, and animal bite victims. However, not many studies have been done on general population.

Hence the present study was under taken to study the knowledge, attitude and practice regarding animal bite and rabies, among agricultural workers and to create awareness regarding animal bite and rabies.

METHODS

A cross sectional study was done in rural field practice area of SDM College of Medical Sciences and Hospital, Dharwad in the month of September and October 2015. Data was collected after taking informed consent from agricultural workers who were working in fields at the time of data collection.

Sample size was calculated by assuming awareness to be 50% and considering an absolute precision of 5%. The sample came out to be 400.

Data was collected using a semi structured interview schedule. The schedule consisted of questions regarding knowledge, attitude and practice of animal bite and rabies, as well as about basic socio demographic characteristics like age, sex, religion, socio economic status etc.

Statistical analysis

Data was entered using Epidata v3.1 and analysis was done using SPSS v20.0. Descriptive statistics like percentages, frequencies, mean and standard deviation was used. Chi square test was applied to test association between categorical variables. KAP (knowledge, attitude and practice) scores were calculated as below.

KAP scoring

For every correct answer a score of 1 was given and a score of 0 for every incorrect answer and the mean scores and standard deviation was calculated for knowledge, attitude and practice (KAP).

The participants who had KAP score more than the mean were considered as good and less than mean score were considered poor.[4]

RESULTS

Data was collected from 400 agricultural workers. Average age of study participants was 34.95±13.49 years. The age ranged from 18 years to 68 years. Males were 340 (85%) and 60 females (15%). Age categories, education, religion, socio economic status (according to modified B.G. Prasad classification) is given in Table 1.

Table 1: Socio demographic characteristics of study participants (n=400).

Characteristic	Number (%)
Age	
18-30 years	191 (47.75)
31-50 years	144 (36)
>50 years	65 (16.25)
Education	
Illiterate	47 (11.75)
Primary school	138 (34.5)
High school	175 (43.75)
PUC (up to 12th std)	32 (8)
Graduation	8 (2)
Religion	
Hindu	344 (86)
Muslim	56 (14)
Socio economic status	
Class I	0 (0)
Class II	39 (9.75)
Class III	209 (52.25)
Class IV	143 (35.75)
Class V	9 (2.25)

Knowledge of study participants about animal bite and rabies

A total of fourteen questions were asked to assess knowledge about animal bite and rabies. 116 (29%) of participants answered as dog, 32 (8%) as scorpion, 16 (4%) as bats, 8 (2%) as mosquitoes, 8 (2%) as rats, 16(4%) as monkeys 4(1%) as fox and 296 (74%) as snake being dangerous animals. For symptoms of rabies in animals 188 (47%) of respondents answered as madness, 40 (10%) as palsy, 4 (1%) fear of water, 4 (1%) as fever, 4 (1%) as TB and 212 (53%) did not know the symptoms of rabies. Table 2 shows the knowledge of participants about animal bite and rabies - cause, treatment, prevention.

Attitude of study participants about animal bite and rabies

Seven questions were asked to each of the study participants to assess the attitude regarding the reaction, first aid, health seeking behaviour, vaccination of pets. 16 (4%) of people answered that, lime should be applied to the animal bite wound. Table 3 shows attitude of study participants about animal bite and rabies.

Table 2: Knowledge of study participants about animal bite and rabies.

Question	Responses (%)
Heard of rabies?	
Yes	356 (89)
No	44(11)
Source of information about rabies?	
TV	32 (8)
Radio	24 (6)
Newspaper	68 (17)
Hospital	68 (17)
Health worker	136 (34)
Others	28 (7)
Cause of rabies?	
Infection	324 (81)
Madness	44 (11)
Curse	4 (1)
Malnutrition	8 (2)
Others	20 (5)
How is rabies transmitted?	
Bite of rabid (mad) animal	340 (85)
Bite of any animal	12 (3)
Insect bite	12 (3)
Don't know	36 (9)
Is rabies curable?	
Yes	300 (75)
No	28 (7)
Don't know	72 (18)
Is rabies preventable?	
Yes	248 (62)
No	48 (12)
Don't know	104 (26)
Heard of any vaccine for animal bite?	
Yes	268 (67)
No	132 (33)

Practice of study participants about animal bite and rabies

Five questions were asked to assess the practice of study participants following supposed animal bite. The questions were related to first aid, watching the animal which bit, health seeking behaviour. Table 4 shows practice of participants about animal bite and rabies.

Knowledge, attitude and practice score of study participants about animal bite and rabies

Average knowledge, attitude and practice score were 5.07±1.45, 3.16±0.99 and 1.71±0.94 respectively. 204 (51%) participants had good knowledge score, 196 (49%) had poor knowledge score. 204 (51%) participants had good attitude score and 196 (49%) had poor attitude score. 180 (45%) study participant had good practice score and 220 (55%) had poor practice score.

Association of knowledge, attitude and practice scores with socio demographic characteristics

Knowledge score was statistically significantly associated with age (χ^2= 30.185, df=2, p<0.001) and socio economic status (χ^2=11.34, df=3, p=0.01).

Attitude score was statistically significantly associated with age (χ^2= 57.307, df=2, p<0.001), education (χ^2= 30.31, df=4, p<0.001) and socio economic status (χ^2= 19.45, df=3, p<0.001).

Practice score was statistically significantly associated with age (χ^2= 10.213, df=2, p=0.006), education (χ^2= 23.49, df=4, p<0.001), religion (χ^2= 3.88, df=1, p=0.049) and socio economic status (χ^2= 33.82, df=3, p<0.001).

Table 3: Attitude of study participants about animal bite and rabies.

Question	Responses (%)
What would be your reaction if you are bitten by an animal?	
Fear	40 (10)
Run away	204 (51)
Kill the animal	152 (38)
Others	4 (1)
What do you think should be done immediately when you are supposedly bitten by an animal?	
Wash the wound with soap and water	292 (73)
Apply mud	72 (18)
Apply turmeric	12 (3)
Apply coffee powder	4 (1)
Apply antiseptic	8 (2)
Others	12 (3)
Do you think a person with animal bite should consult a doctor?	
Yes	308 (77)
No	48 (12)
Don't know	44 (11)
Do you think animal bite is serious?	
Yes	340 (85)
No	28 (7)
Don't know	32 (8)
How serious is animal bite?	n=340
Heals on its own	124 (31)
Can cause sepsis	72 (18)
Can cause death	144 (36)
Whom do you think animals bite more?	
Children	152 (38)
Old age people	92 (23)
Outdoor workers	156 (39)
Do you think pet animals should be vaccinated against rabies?	
Yes	324 (81)
No	28 (7)
Don't know	48 (12)

Table 4: Practice of study participants about animal bite and rabies.

Question	Responses (%)
What do you do immediately to animal bite wound when you/your family members/ friends are bitten by an animal?	
Wash the wound with water only	204 (51)
Wash with soap and water	144 (36)
Apply antiseptic	4 (1)
Apply mud/ coffee powder/ turmeric	32 (8)
Ignore	16 (4)
Where do you go when you/your family members/ friends are bitten by an animal?	
Doctor/hospital	308 (77)
Traditional healer	76 (19)
Don't go anywhere	16 (4)
What would you do to the animal which has bitten a person?	
Kill animal	128 (32)
Watch for a few days	232 (58)
Do nothing	40 (10)
Do you have pet animal?	
Yes	300 (75)
No	100 (25)
Is your pet vaccinated?	n=300
Yes	264 (66)
No	36 (9)

DISCUSSION

In our present study 51% of study participants had good knowledge and attitude scores, where as 45% of study participants had good practice scores. Socio economic status was significantly associated with knowledge, attitude and practice scores. Education was statistically associated with attitude and practice scores. Religion was only associated with practice scores.

After extensive literature search we could not find any study done on awareness about animal bite and rabies among agricultural workers. So we have compared our findings with studies done on general population.

In the present study 86% belonged to Hindu religion and 14% to Muslim religion. 85% of study population were male and 15% were females. Age ranged from 18 to 68 years. Considering education 11.75% were illiterates, 34.5% had completed primary education, 43.75% had completed high school, 8% up to PUC (12th standard) and only 2% had completed their graduation.

In a study conducted by Guadu et al in Bahir Dar town 69% of study participants were male, 73.7% were orthodox Christians and 14.4% were Muslims. 37.7% had completed their graduation.[4] In another study done by Ali A et al in Ethiopia study participants were predominantly females at 55.6%,75% belonged to orthodox Christians and 15.7% to Muslim religion. 12.8% were illiterates almost similar to our study, 34% had studied up to secondary school and 10.3% had completed their under graduate degree.[5]

In the present study 89% of study participants had heard the word rabies. Among those who had heard about rabies most of them heard from health workers (38.2%), followed by from hospital staff (19.11%), radio (17.98%) and other sources.85% of study participants were aware that rabies is transmitted by bite of rabid animals. Most of the study participants answered mad dog bite as the commonest cause of rabies. 67% of the study participants had heard that there is some vaccination for animal bite.

In a study conducted by Singh US et al in Gujarat all individuals knew about rabies, 98.6% knew that rabies is transmitted by dog bite, 31% by cat, 26.6% by monkeys and 25.7% by fox. 86.6% were aware about anti rabies vaccine.[1]In a study conducted by Guadu et al in Bahir Dar town the source of information about rabies was 86.6% from informal non mass media, such as traditional healers, neighbours, friends and relatives, where as 10.7% had heard from formal or mass media such as radio, TV, books, magazines. 99% of the study participants were familiar with rabies, 94.9% were of the opinion that rabies is transmitted from animas to humans, 71.3% had opined that dog is the common source of rabies.[4]

In another study conducted by Ali A et al in Ethiopia 83% of study participants had heard of rabies previously, which is similar to our study. Half of the respondents (50%) had heard about rabies from informal or non mass media means, 21.5% had heard from formal or mass media.[5]

In present study 73% of the study participants informed that they will wash suspected animal bite wound with water and soap immediately, rest had traditional or house hold belief of applying lime, mud, turmeric, coffee powder to the suspected animal bite wound. 81% were of the opinion that pet animals should be vaccinated. 77% were willing to consult a doctor following suspected animal bite.

In a study conducted in Gujarat by Singh US et al 31.1% of study population had endorsed to apply first aid following suspected animal bite, 19.2% had religious belief of tying bell at the Mata temple, application of chilli powder to animal bite wound. 24.4% were willing to vaccinate their pets.[1] In another study conducted in Ethiopia by Ali A et al 98% of study participants were willing to vaccinate their pets, 98.2% agreed to consult health professional if bitten by dogs and 58.3% had strong belief in traditional medicine for rabies prevention and treatment.[5]

In the present study 51% of the study participants informed that they will practice washing of animal bite

wound with soap and water. 77% informed that following suspected animal bite to self, family or friends they would consult a doctor. In Ethiopia study by Ali A et al 70.8% of respondents said that they would wash wound with soap and water after suspected animal bite and 50.4% would seek health care following suspected animal bite.

In present study knowledge score was statistically significantly associated with age and socio economic status. Attitude score was significantly associated with age, education and socio economic status.

Practice score was significantly associated with age, education, religion and socio economic status. In a study from Bahir Dar town by Guadu et al KAP scores were significantly associated with sex and educational status.[4] In another study by Ali A et al from Ethiopia knowledge score was significantly associated with sex and education level. Attitude score was significantly associated with age and education level. Practice scores were significantly associated with sex and education levels.[5]

CONCLUSION

In present study the agricultural workers had fair awareness about animal bite and rabies. Still there are lots of gaps in knowledge about cause of rabies, most importantly about prevention and treatment of rabies/ dog bite. Creating awareness through periodic health education is required among the agricultural workers.

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