

Knowledge, Attitude and Practices Regarding Dog Bite and its Management Among Adults in Rural Tamil Nadu



Medical Science

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ABSTRACT

Background: Annually 50,000 human deaths worldwide are reported due to rabies, of which 30,000 are from India as per WHO report.

Objective: To study the Knowledge, Attitude and Practices regarding dog bite and its' management among adults in rural Tamil Nadu and to look for its association between selected socio-demographic factors.

Material and methods: Community based cross sectional study conducted on 275 households during the month of May 2011 using multi-stage random sampling method. Data was entered in excel and analyzed using SPSS-version 16 software. Proportions were calculated for all qualitative variables. Chi square test was used to look for association between selected socio-demographic variables and KAP regarding dog bites. A p value <0.05 was considered statistically significant.

Results: Of the 275 study respondents only 6.9% knew microorganism as the cause of rabies but 86.2% of the respondents knew rabies is spread by dogs. 90.5% and 59.3% knew that a vaccine for rabies is available and the site of administration as abdomen respectively. 73.8% felt it essential to wash the bite site with soap and water. Only 49.4% practiced deep burial as the method of disposal of a suspected rabid dog.

Conclusion: The knowledge, attitude and practices with respect to prevention and treatment of rabies were not found adequate among the rural population. Community based health education is essential in these areas to create more awareness regarding rabies.

Introduction

Rabies encephalitis, both human and animal continues to plague India even after introduction of preventive vaccines more than a century ago. Rabies is a deadly disease but mostly preventable. Most of the deaths are due to a lack of awareness. According to WHO (1992), about 50,000 human deaths due to rabies is reported across the world every year, out of which 30,000 are from India alone. 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. According to Park K (2002), "Although 2 million bites occur each year in India more than 95% of these cases are bitten by dogs" (P. 207). People have very basic knowledge about anti-rabies treatment. About 0.40 million people continue to receive the sheep brain vaccine despite WHO recommending discontinuation of the same. (Sehgal, Bhattacharya, Bhardwaj, Parsi, 1994). There are many myths and false beliefs associated with wound management. Victims of dog bite also do not wash the wound properly out of fear that it would get infected. (Sekhon, Singh, ParamjitKaur, Gupta, 2002). This being an emerging issue, we felt the need to conduct this survey in our field practice area belonging to Kancheepuram district.

Objectives

- To study the knowledge, attitude and practices regarding dog bites and its management in rural Tamil Nadu.
- To study the association of selected socio-demographic determinants and KAP regarding dog bites and its management

Methodology

The current community based cross-sectional study was carried out during May 2011 in 11 villages belonging to the field practice areas of Chunampet RHTC, department of Community Medicine, Pondicherry Institute of Medical Sciences. The total population of these villages was 11,773. Any one adult member of the family preferably the head of the household was included as the study subject. Each village was divided into four quadrants with a centre area thus giving five areas per village. Five houses were chose from each of this area by systematic random sampling method. Thus a total of 275 families were surveyed using a pre-designed and pretested questionnaire with two sections namely socio-demographic characteristics, and knowledge, attitude and

practices regarding Dog Bites and its management. After explaining the purpose of the study, verbal consent was obtained from each respondent before start of the interview. Data was collected by one to one interview method and entered in excel and analyzed using SPSS- version 16.0 software. All qualitative variables were calculated for proportions and to look for association between the selected socio-demographic determinants and the KAP regarding dog bites, CHI Square test was used as test of significance and a p value < 0.05 was considered significant. The myths and misconceptions regarding the dog bite management among the respondents were removed and health education sessions were done to address this issue in the community.

Results

Table 1: Socio-demographic profile of the study respondents (N=275)

Demographic variables	Frequency (Percentage) n (%)
Age (years)	
20-40	158 (57.5)
41-60	82 (29.8)
>60	35 (12.7)
Gender	
Male	115(41.8)
Female	160(58.2)
Religion	
Hindus	268(97.5)
Christians & Muslims	7(2.5)
Caste	
SC/ST	129(46.9)
BC/MBC	146(53.1)
Education	
Literate	189 (68.7)
Illiterate	86 (31.3)
Occupation	
Employed	56(20.4)
Unemployed	219(79.6)
Socio-economic status*	
Upper	14(5.1)
Upper middle	32(11.6)
Lower middle	52(18.9)
Upper lower	92(33.5)
Lower	85(30.9)

*Modified BG Prasad's classification updated for 2011Majority

of the study respondents were in the age group of 20 – 40 years (57.5%) and were females (58.2%). Most of the participants were Hindus (99.9%) and almost equal distribution of BC/MBC(53.1%) and SC/ST(46.9%) were found. 31.3% of the participants were illiterates and majority (79.6%) were unemployed and homemakers. 61.4% of the study participants were in the upper-lower & lower socioeconomic strata.

Table 2: Knowledge regarding cause, spread, morbidity & mortality related to rabies among the respondents (N=275)

Variables	Frequency (%)
Cause of rabies*	
Microorganism	19 (6.9)
Mosquito	12 (4.4)
Animals	146 (53.1)
Don't know	103 (37.5)
Spread of rabies*	
Cat	22 (8)
Dog	237 (86.2)
Rats	10 (3.6)
Fox	12 (4.4)
Others	14 (5.1)
Don't know	26 (9.5)
Most dangerous site*	
Face/ head/ neck	70 (25.5)
Hands	14 (5.1)
Legs	68 (24.7)
Genitals	4 (1.5)
Anywhere	94 (34.2)
Don't know	47 (17.1)
Symptoms of rabies*	
Fits	14 (5.1)
Fear to drink water	7 (2.5)
Salivation	38 (13.8)
Altered personality (Behaves like a dog)	177 (61.4)
Others	26 (9.5)
Don't know	35 (12.7)
Can rabies cause death?	
Yes	213 (77.5)
No	52 (18.9)
Don't know	10 (3.6)

*multiple response possible

Only 19 (6.9%) of study participants knew microorganism as the cause of rabies and 146 (53.1%) of the respondents thought it was caused by animal. 86.2% of the respondents knew that rabies is spread by dogs. 94 (34.2 %) knew dog bite at any site is dangerous and only 70 (25.5%) knew the bite in head, neck and face region is most dangerous. Regarding the symptoms of rabies majority 177 (61.4%) of the respondents knew that the person bit by a rabid dog would have a change in personality (behave like a dog). The symptoms like increased salivation, fits and fear of water was known to 38 (13.8%), 14 (5.1%) & 7 (2.5%) respectively. 213 (77.5%) of the people surveyed knew the fact that rabies can lead to death.

Table 3: Knowledge, attitude and practices regarding prevention of rabies among the study respondents (N=275)

Variables	Frequency (%)
Presence of vaccines for rabies	
Yes	249 (90.5)
No	14 (5.1)
Don't know	12 (4.4)
Rabies vaccine given free of cost at GH	
Yes	210 (76.4)
No	35 (12.7)
Don't know	30 (10.9)

Site of vaccine*	
Abdomen	163 (59.3)
Deltoid	57 (20.7)
Gluteal	43(15.6)
Site of bite	9 (3.3)
Don't know	24 (8.7)
Rabid dog identification*	
Excessive salivation	54 (19.6)
Not taking food	1 (0.4)
Bites when undisturbed	218 (79.3)
Others(silent, irritable, running around)	48(17.5)
Don't know	8 (2.9)
Essential to take vaccine after dog bite	
Yes	247 (89.8)
No	17 (6.2)
Don't know	11 (4)
Essential to vaccinate pet dog	
Yes	191 (69.5)
No	69 (25.0)
Don't know	15 (5.5)
Method used to get rid of rabid dog	
Poisoning	3(1.1)
Shooting	3 (1.1)
Beating	261 (94.8)
Do nothing	4 (1.5)
Don't know	4(1.5)
Method of disposal of suspected dead rabid animal	
Deep burial	136 (49.4)
Burning	12 (4.4)
Open field disposal	121 (44)
Don't know	6 (2.2)

*Multiple response possible

Regarding prevention of rabies majority 90.5% and 76.4% of the rural adults are aware of the availability of a vaccine and it is given free of cost in government sector respectively for prevention of rabies. 59.3% believe the site of vaccination as abdomen. 79.3% of the participants knew a rabid dog as one which bites when undisturbed. Majority 89.8% and 69.5% knew it is essential to take vaccine after dog bite and essential to vaccinate pet dogs respectively. Majority felt beating as the method to get rid of rabid dog and 44% of participants said they would dispose the suspected dead rabid animal by throwing in open field.

Table 4: Knowledge, attitude and practices regarding prevention of rabies among the study respondents (N=275)

Variables	Frequency (%)
Period of observation of suspected rabid animal	
Not necessary	44 (16)
Don't know	98 (35.6)
< 10 days	57 (20.7)
> 10 days	76 (27.6)
Measures taken after dog bite*	
Wash with soap and water	105 (38.2)
Injection TT	9 (3.3)
Antiseptic bandaging	2 (0.7)
Tightly tie above the site of bite	14 (5.1)
Take rabies vaccine	139 (50.5)
Others	73 (26.5)
Don't know	6 (2.2)
Essential to take treatment after dog bite?	
Yes	258 (93.8)
No	17 (6.2)
Essential to observe dog?	
Yes	150 (54.5)
No	125 (45.5)
Essential to wash with soap and water after bite?	
Yes	203 (73.8)
No	57 (20.7)
Don't know	15 (5.5)

Time of approach to health facility after dog bite	
Immediately	193 (70.2)
Few hours	23 (8.4)
1 day	33 (12)
Few days	16 (5.8)
Place of availing treatment in case of dog bite	
GH	191(69.4)
Private hospital	12 (4.4)
Native treatment providers	72 (26.2)
Measures taken at home after a dog bite*	
Wash with soap and water	93 (33.8)
Native treatment	133 (47.2)
Do nothing	36 (13.1)
Others	22 (8)

*Multiple response possible

As part of health seeking practices after a dog bite 54.5% and 73.8% of rural adults felt it necessary to observe the dog and wash the bite site with soap and water respectively. 70.2% would go to a health facility immediately after a dog bite and 69.4% prefer to go to government hospitals. Surprisingly 47.2% would opt for native treatment.

Table 5: Age as a determinant with respect to KAP regarding cause, spread, prevention and treatment of Rabies

Variables (N)	Age (yrs)			p value
	20-40 N (%)	41-60 N (%)	>60 N (%)	
Knowledge				
Rabies caused by microorganism (19)	9 (47.4%)	5 (26.3%)	5 (26.3%)	0.249
Spread of rabies through dog (237)	129 (54.4%)	75 (31.6%)	33 (13.9%)	0.029
Symptom as change in personality (177)	101 (57.1%)	55 (31.1%)	21 (11.9%)	0.753
Vaccine available free of cost (210)	118 (56.2%)	68 (32.4%)	24 (11.4%)	0.138
Identify a rabid dog as one which bites when undisturbed (218)	123 (56.4%)	65 (29.7%)	30 (13.8%)	0.583
Rabies can be prevented by treatment(237)	135 (57.0%)	75 (31.6 %)	27 (11.4%)	0.015
Attitude				
Essential to vaccinate pet dog (191)	117 (61.3%)	51 (26.7%)	23 (12.0%)	0.306
Essential to wash with soap and water (203)	118 (58.1 %)	60 (29.6%)	25 (12.3%)	0.040
Practices				
Will you wash with soap and water (105)	55 (52.4%)	34 (32.4%)	16 (15.2%)	0.372
Will you take rabies vaccine (139)	73 (52.5%)	43 (30.9%)	23 (16.5%)	0.104
Will you take Native Medicine (133)	78 (58.6%)	41 (30.8%)	14 (10.5%)	0.568
Visit Health facility immediately (193)	107 (57.4%)	61 (31.6%)	25 (13.0%)	0.073
Disposal of dead rabid animal- Deep Burial(136)	75 (55.1%)	39 (28.7%)	22 (16.2%)	0.753

When we consider the age distribution with respect to KAP regarding rabies we see that, younger the age better is the KAP. This difference in age with respect to KAP regarding rabies was found to be statistically significant for knowledge regarding spread of rabies through dog (p < 0.029), the knowledge that rabies can be prevented by treatment (p < 0.015) and the attitude that it is essential to wash the site of dog bite with soap and water (p < 0.04). This difference could probably be due to better literacy among the younger age group.

Table 6: Socio-economic status as a determinant with respect to KAP regarding cause, spread, prevention and treatment of Rabies

Variables (N)	Socioeconomic status					p value
	Upper N (%)	Upper middle N (%)	Lower middle N (%)	Upper lower N (%)	Lower N (%)	
Knowledge						
Rabies caused by microorganism (19)	4 (21.1%)	6 (31.6%)	1 (5.3%)	2 (10.5%)	6(31.6%)	0.001
Spread of rabies through dog (237)	74 (31.2%)	79 (33.3%)	46 (19.4%)	26 (11%)	12(5.1%)	0.924
Symptom as change in personality (177)	63 (35.6%)	57 (32.3%)	34 (19.2%)	15 (8.5%)	8 (4.5%)	0.080
Vaccine available free of cost (210)	66 (31.4%)	72 (34.3%)	39 (18.6%)	23 (11%)	10(4.8%)	0.020
Identify a rabid dog as one which bites when undisturbed (218)	67 (30.7%)	75 (34.4%)	42 (19.3%)	21 (9.6%)	13 (6.0%)	0.235
Rabies can be prevented by treatment(237)	74 (21.2%)	79 (33.3 %)	48 (20.3%)	24 (10.1%)	12 (5.5%)	0.319
Attitude						
Essential to vaccinate pet dog (191)	57 (29.8%)	66 (34.6%)	41 (21.5%)	18 (9.5%)	9 (4.6%)	0.003
Essential to wash with soap and water (203)	59 (29.1%)	65 (32%)	42 (20.7%)	24 (11.8%)	13 (6.4%)	0.258
Practices						
Will you wash with soap and water (105)	29 (27.6%)	29 (27.6%)	22 (21.0%)	16 (15.2%)	9 (8.6%)	0.071
Will you take rabies vaccine (139)	54 (38.8%)	46 (33.1%)	27 (19.4%)	9 (6.5%)	3 (2.2%)	0.002
Will you take Native Medicine (133)	42 (31.6%)	57 (42.9%)	20 (15.0%)	11 (8.3%)	3 (2.3%)	0.004
Visit Health facility immediately (193)	61 (31.6%)	58 (30.1%)	38 (19.7%)	24 (12.4%)	12 (6.2%)	0.043
Disposal of dead rabid animal- Deep Burial (136)	39 (28.7%)	42 (30.9%)	27 (19.9%)	18 (13.2%)	10 (7.4%)	0.527

Considering the Socioeconomic distribution with knowledge, attitude regarding the cause, spread, prevention and treatment of rabies it was found that higher the socioeconomic status, better was the knowledge attitude and practices with regard to rabies. The knowledge of cause as microorganism (p < 0.001), availability of vaccine free of cost(p < 0.020), attitude of vaccinating the pet dogs (p < 0.003), practice of vaccination for rabies (p < 0.002) were found better in the higher socioeconomic group and were statistically significant, it was also found that they sought Native medication which was statistically significant (P < 0.004). It was also found that those with higher socioeconomic status also showed better treatment seeking practices by going to a health center immediately which was found to be statistically significant (p < 0.043). Those in the higher socioeconomic group were

also more likely to dispose of rabid animals by deep burial but this was not found to be statistically significant.

Discussion

In this community based study considering the knowledge regarding cause of rabies, only 19 (6.9%) of the respondents knew it as microorganism and 146 (53.1%) of the respondents thought it was caused by animal and this was found contrast to a study done in Srilanka. (Matibag, Kamigaki, Kumarasir, 2007). 86.2% of the respondents knew that rabies is spread by dogs and this was found similar to an earlier study done in Gujarat. (Singh & Choudhary, 2005). where 98.6% felt the same. When asked for the most dangerous site in the body with respect to rabid dog bite 94 (34.2 %) knew dog bite at any site is dangerous. Only 70 (25.5%) knew the bite in head, neck and face region is most dangerous and this was found contrast to a study done in Gujarat. (Singh & Choudhary, 2005). Regarding the symptoms of rabies majority 177 (61.4%) of the respondents knew that the person bit by a rabid dog would have a change in personality (behave like a dog). The symptoms like increased salivation, fits and fear of water was known to 38 (13.8%), 14 (5.1%) & 7 (2.5%) respectively. Considering the knowledge of mortality due to rabies 213 (77.5%) of the people surveyed knew the fact that rabies can lead to death this was found similar to a study done in Gujarat. (Singh & Choudhary, 2005).

With regard to availability of vaccine and it's cost, 249 (90.5%) and 210 (76.4%) knew that a vaccine for rabies is available and it is free of cost respectively. A study done in Gujarat (Singh & Choudhary, 2005) showed 86.6% knew the availability of a vaccine for Rabies and availability of free vaccine for Rabies at Government hospitals was similar to this study compared to a study done in Srilanka. (Matibag, Kamigaki, Kumarasir, 2007).

Regarding the site of administration of vaccine 163 (59.3%) of the people surveyed told that the site of vaccine administration as the abdomen and 57 (20.7%) told the site of vaccine administration as the deltoid region and this was found similar to a study done in Gujarat. (Singh & Choudhary, 2005). When asked about whether they will vaccinate after dog bite, 247 (89.8%) of the people surveyed thought that it is essential to vaccinate after a dog bite and this was found contrast to study done in Gujarat. (Singh & Choudhary, 2005). Considering pet dog vaccination, 191 (69.5%) of the people surveyed thought that it is essential to vaccinate pet dogs and this was found similar to the study done in Srilanka. (Matibag, Kamigaki, Kumarasir, 2007).

Considering the practice of washing with soap and water after animal bite, 203 (73.8%) of the participants felt it essential to wash the bite site with soap and water and this was found contrast to study from Gujarat (Singh & Choudhary, 2005) where 38.2% practiced washing with soap. Regarding utilization of health facility 258(93.8%) would take treatment after a dog bite, 193 (70.2%) would go to a health facility immediately after a dog bite, A similar study (Sudarshan et al., 2006) shows around 30.8% would go to a health facility within 24 hours .Regarding preference of utilizing a government or a private facility, 191(69.4%) prefer to go to government facility, similar to that shown in the multi-centric study 59.9% study (Sudarshan et al., 2006).

Conclusion

There was good knowledge with respect to mode of spread, symptoms and prevention however the knowledge regarding the cause of rabies and the site of vaccination was poor. Most of the study respondents felt the need to vaccinate after a dog bite and vaccinate pet dogs but they did not feel the need to observe the suspected rabid animal. The practices of study respondents with regard to prevention and treatment showed that most were willing for open field disposal of a suspected dead rabid animal and the extensive use of native treatment following a dog bite.

Considering the determinants of dog bite and it's management it was found that younger the age and upper the socio-economic status better were the knowledge, attitude and willingness to correct health seeking practices. This could be probably because of better literacy rates among the younger generation and better health care utilization by the upper socio-economic status participants.

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