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Original Research Article

Awareness of rabies and its prevention among adults in urban slums of Tiruvallur district

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ABSTRACT

Background: Rabies is an acute fatal encephalomyelitis caused by a Lyssavirus type 1 is recognized today because of its global distribution, incidence, veterinary and human health costs, and extremely high case fatality rate .The large number of deaths due to rabies can be attributed to the fact that in spite of availability of effective vaccination against rabies, people are unaware of various aspects and its prevention. Objective was to study the awareness about Rabies and its prevention among adults in urban slum area of Tiruvallur district.
Methods: The present study was a cross sectional study conducted over a period of 2 months between December 2019 to January 2020 in an urban slum area of Tiruvallur district of Tamilnadu. A Semi Structured questionnaire was administered to the study participants and the data was analysed by SPSS 16.
Results: Among 295 study participants, Mean age was 34.73 (+or-10.26) years. Majority (38.6%) of the respondents were of the age group 20-29 years and 60.3% were male participants. 98.6% had heard about rabies and 83.7% knew that Rabies is a fatal disease. Majority (95%) consult a Doctor immediately and 65% knew correctly about a first aid after animal bite. 87% of the study participants were aware of antirabies vaccine. Age and educational status were significantly associated with rabies awareness ($p<0.05$).
Conclusions: Most of the study participants were aware of rabies. Awareness was high among younger people and educated people. Effective health education shall help in rabies prevention.

Keywords: Adult, Awareness, Prevention, Rabies

INTRODUCTION

Rabies is a zoonotic disease that is almost always fatal. Rabies is estimated to cause 59,000 human deaths annually in over 150 Countries, with 95% of cases occurring in Africa and Asia.[1] India is one of the SEAR countries in which rabies is endemic. Rabies is a major burden in Asia, with an estimated 35172 human deaths per year. India accounts for 59.9% of rabies deaths in Asia and 35% of deaths globally. Dogs are responsible for 99% of human rabies deaths. Between 30% and 60% of the victims of dog bites are children under the age of 15 in countries where rabies is endemic.[2] A WHO-sponsored multi-centre study estimated that at least 20,565 rabies deaths occur every year in India.[3]

While human rabies is largely controlled in developed countries, primarily due to the successful control of animal rabies, developing countries with scarce resources are still battling this scourge.[4] As a result, the WHO has classified rabies as a neglected tropical disease because the major burden of the disease is borne by Asia and Africa. It is a matter of global concern that rabies remains a neglected disease 125 years after the discovery of the rabies vaccine by Louis Pasteur.[5] The reasons for this

neglect lie at various levels. Insufficient surveillance systems, limited access to and supply of the modern rabies vaccine, lack of awareness among policymakers and the public and insufficient political commitment all impede efforts to control rabies.[6]

The availability of safe and effective vaccines for human rabies has prevented many human deaths. Bögel and Meslin state that the most cost-effective approach for human rabies control is a combination of post-exposure prophylaxis and canine rabies elimination.[7] The lack of community awareness about the disease is a major hurdle in fighting rabies. Community participation is one of the major components of any successful public health program. Community-based surveillance systems have been successful and cost-effective for rabies control in other areas. Awareness of simple preventive measures, such as washing bite wounds with soap and water, can be a decisive factor in preventing rabies deaths in at-risk human populations.

Justification

Rabies is a fatal disease with 100% mortality. The lack of community knowledge about the Rabies disease is a major hurdle in fighting rabies. Urban slum has the habit of unplanned dumping of garbage and they attract a large number of stray dogs is a major risk factors for human rabies cases. This study is conducted to ascertain the awareness about rabies prevention and control among adults in selected urban slum community.

Objective of study was to study the awareness about Rabies and its prevention among adults in urban slum area of Tiruvallur district.

METHODS

A community based, cross sectional study was done in the urban slums area of Avadi Municipality, after obtaining Institutional Ethics clearance and permission from Local Health Authority.

Period of study was from December 2019 to January 2020 and study was done among adults aged more than 18 years – both males and females who were willing to participate.

The sample size was calculated from previous study in which awareness about Rabies of 74.1%, using the formula (N=Z2PQ/d2)3.84X74.1X25.9/5X5 with 5% precision, which gives sample size of 295.

The list of Families residing in the urban slums of Avadi, Tiruvallur district was obtained from Family Register of the urban health nurse. From the list, simple random sampling technique was used to select the required number of participants.

A pre-designed, structured questionnaire was used for interviewing the participants and the information was collected by house to house survey after obtaining informed consent from the participants. The questionnaire includes socio demographic profile and questions for assessing the knowledge and awareness about rabies and its prevention. The data was entered in MS-Excel. Descriptive and inferential analyses were done using SPSS version 16. Chi-square test was applied and a p-value of <0.05 was taken as significant.

RESULTS

The present study was carried out among 295 participants in the urban slum area of Avadi-Tiruvallur District in Tamilnadu. Mean age of the participants was 34.73 (+/-10.26) years. Majority (38.6%) of the respondents belonged to the age group of 20-29 years. 178 (60.3%) were males and 117 (39.7%).were females. In this study, we found that 50 of them (16.9%) were graduate and above level of education, followed by 178(60.3%) finished High school and 67 (22.7%) had only primary school level of education.

Awareness of rabies and its prevention among participants

Among the study participants, majority 290 (98.6%) have heard of Rabies. Regarding source of knowledge about Rabies, around 125(42.4%) came to know from Doctor, 123(41.7%) and 40 (13.6%) received the information from friends and media, 7(2.4%) don't know about rabies. Majority 247 (83.7%) said that rabies infection can result in death of the individual. Regarding common animals which transmit rabies, most of the participants (86.8%) said that only Dog can transmit the disease, very few individuals 5(1.7%) said that it can be transmitted by Dog, Cow and Monkey. Nearly 208(70.5%) participants answered that the mode of transmission of rabies is only through Dog bite and one fourth of the participants 78(26.4%) said that it is also through dog bite and scratch. About 60% were aware about the symptoms of rabies. Majority 95% consult a doctor immediately after the bite of the animal. Nearly 65% knew correctly about first aid after animal bite. And around 94.6% aware about health facility for treatment of animal bites, among that 89% seek Government facility for treatment .Regarding vaccination of pet animals for prevention of rabies, 72.5% said vaccination to be done. And 87% of the study participants knew about Anti rabies vaccine.

Association between socio demographic details and awareness on rabies revealed as the younger age group i.e. 20-29 yrs (92.9%) had more knowledge than older age group (81.8%) on animals more commonly transmitting rabies which is statistically significant ($p<0.01$). Regarding education, all study participants were educated, among that 67(23%) had studied at least primary school level of education in the present study. Educated people have more awareness on rabies which is statistically significant ($p<0.05$).

Table 1: Distribution of participants according to sociodemographic factors.

Sociodemographic details		
Age	**Age group (in years)**	**Number of participants (n=295)**
	20-29	114 (38.6 %)
	30-39	96 (32.5 %)
	40-49	53 (18 %)
	50-59	21(7.1%)
	60 and above	11(3.7 %)
Sex	Male	178 (60.3%)
	Female	117(39.7%)
Educational qualification	Graduate and above	50 (16.9%)
	Higher school	178 (60.3%)
	Primary School	67 (22.7%)

Table 2: Distribution of awareness of rabies and its prevention among study participants.

Questions	Responses	Frequency (%), n=295
Heard of Rabies	Yes	290 (98.6%)
Source of knowledge about rabies	Doctor	125 (42.4%)
	Don't know	7 (2.4%)
	Friends	40 (13.6 %)
	Media	123 (41.7%)
Rabies can result in death	Yes	247 (83.7 %)
	No	17 (5.8 %)
	Don't know	31 (10.5%)
Most common animals which transmit rabies?	Dog	256 (86.8%)
	Dog & cat	34 (11.5 %)
	Dog cow and monkey	5 (1.7%)
Mode of transmission of rabies	Dog bite	208 (70.5%)
	Dog bite and scratch	78 (26.4%)
	Dog scratch	5 (1.7%)
	Don't know	2 (0.7%)
	Licking	2 (0.7%)
	Bark like dog	80 (27.1%)
What are the symptoms of rabies?	Don't know	38 (12.9%)
	Fever, seizure	177 (60.0%)
Will you consult a doctor immediately?	No	14 (4.7%)
	Yes	281 (95.3%)
First aid after animal bite?	Cloth bandage over wound	68 (23.1%)
	Native medicine	23 (7.8%)
	Nothing	10 (3.4%)
	Wound wash with water	194 (65.8%)
Awareness about a health facility for treatment of animal bites	Yes	279(94.6 %)
	No	16 (5.4%)
Type of Health facility for animal bite treatment	Don't know	6 (2.0%)
	Govt hospital	265 (89.8%)
	Private hospital	24 (8.1%)
Can vaccination for pet animals prevent rabies?	No	24 (8.1%)
	Yes	214 (72.5%)
	Don't know	57 (19.3%)
Did you know about ARV	Yes	257 (87.1%)
	No	38 (12.9%)

Association between socio demographic details with awareness revealed younger age group (89%) had more awareness than old age group (54.5%) which is statistically significant ($p<0.05$). Educated people had more awareness on main mode of rabies transmission which is statistically significant.

Table 3: Association between Socio demographic details with awareness on common animal transmitting rabies among adults (n=295).

Socio demographic details		Awareness of most common animals transmitting rabies			X2 value	P value
		Dog (%)	Dog & Cat (%)	Dog, Cow & Monkey (%)		
Education	Primary School	56 (83%)	7(10%)	4(5.9%)	13.006	0.011
	High School	160(89.8%)	18(10%)	0(0%)		
	Graduate &Above	40(80%)	9(18%)	1(2%)		
Age	20-29	106(92.9%)	8(7.1%)	0(0%)	29.157	< 0.01
	30-39	82(85%)	13(13.5%)	1(1.5%)		
	40-49	44(83%)	8(15%)	1(2%)		
	50-59	15(71.4%)	59(23.8%)	1(4.8%)		
	60 & above	9(81.8%)	0(0%)	2(18.2%)		

Table 4: Association between socio demographic details with awareness on rabies regarding mode of transmission of rabies among adults (n=295).

Socio demographic details		Awareness of main mode of transmission of rabies					X2 value	P value
		Dog bite (%)	Dog bite and scratch (%)	Dog scratch (%)	Don't know (%)	Licking (%)		
Education	Primary School	47(70%)	15(22.5%)	3(4.5%)	2(3%)	0(0%)	21.709	0.005
	High School	127(71.4%)	50(28%)	1(0.6%)	0(0%)	0(0%)		
	Graduate and Above	34(68%)	13(26%)	1(2%)	0(0%)	2(4%)		
Age (in years)	20-29	89(78.1%)	25(21.9%)	0(0%)	0(0%)	0(0%)	39.107	0.001
	30-39	66(68.7%)	28(29.3%)	2(2%)	0(0%)	0(0%)		
	40-49	34(64.3%)	16(30%)	1(1.9%)	19(1.9%)	19(1.9%)		
	50-59	13(61.9%)	7(33.4%)	1(4.7%)	0(0%)	0(0%)		
	60 & above	6(54.8%)	2(18.2%)	1(9%)	1(9%)	1(9%)		

DISCUSSION

The current study was done to assess the awareness of Rabies and its prevention among general population of urban slum area of Avadi-Tiruvallur district. Community awareness about rabies is very crucial in rabies prevention and control. Around the world, awareness studies about rabies have been widely used to understand the disease and its preventive measures.

In the current study, the percentage of participants who had heard of rabies was 290(98.6%) similar to study done in urban community of Manipur (97.1%).[8] and it was higher compared to other studies which ranged from 60% to 80%.[9-11] The figure in our study may be higher because a greater number of subjects in our study population had more education (76.9% had a high school education or higher).

The participants in this study reported that their major source of information about rabies was physician (42.4%) and mass media (41.7%) similar to study done by Ghosh et al but in study done by Masthi et al reported mass media and friends/family members.

Our study found that the majority (83.7%) of the respondents knew that rabies is a fatal disease which is almost similar to study done in Manipur (87.9%) but it was slightly higher compared to other studies by Masthi et al (72%) and by Herbert et al only (54%).

In the present study only 1.7% of the participants reported that rabies was transmitted more commonly by 2 or more animals (dog, cow & monkey) which was similar to study by Herbert M et al but it was higher in study by Masthi et al (20%) and Anwith et al (10.8%).[12]

Our study found that most of the respondents knew that dogs were mainly responsible for transmitting rabies and in addition to bites, licks and scratches can also transmit rabies. Without knowing this information, individuals may trivialize some forms of exposure and subsequently fail to seek post – exposure prophylaxis.

In the present study majority of the participants reported the main mode of transmission of rabies is through dog bite (70.5%) which is similar to study by Herbert et al, but it is lower compared to other studies by Masthi et al (92.6%) and Manjunath et al (96.3%).[13]

Regarding symptoms of rabies, majority of participants (60%) reported fever and seizure which is contrast to study by Herbert et al (67%) and Manjunath et al (58.8%) reported hydrophobia and study by Laishram et al reported aggressive behaviour (78.5%) and excessive salivation (50.2%).

Participants seeking treatment from a doctor after being bitten by a dog was 95.3%which is similar to study done in Manipur (92.3%) but it is higher compare to study by Herbert et al (74.1%) and it is very less in study by Masthi et al.

Regarding first aid after animal bite, most of them (65.8%) said wash the wound with water which is similar to other studies ranged from (51% to 95%) but in study by Jalinalaishram et al around 73.8% participants reported wash with antiseptics and only o.6% said wash with water only. Therefore, improved awareness on wound management would have a considerable impact on prevention of rabies.

In the present study, 94.6% aware about health facility for treatment of animal bites was higher compared to study by Herbert et al and 89% of the study participants seek treatment from Govt. Hospital similar to study by Herbert et al (64.9%).

A sizable portion of the study participants (55% to 90%) knew that a vaccine for rabies prevention available in the different study settings similar to present study. In the current study, 87.1% knew about Anti rabies vaccine which is higher compared to study done in urban community of Manipur (49.4%).

This study has few limitations. This study being done among urban adults, the results cannot be generalised to the whole population.

CONCLUSION

In the present study, even though majority of the participants had heard about rabies, younger age group have more awareness about the disease and its prevention than older age group which is statistically significant($p<0.05$).Education plays a significant role as most of the participants were educated at least up to primary level in the current study. Hence educated people had more awareness on rabies which is statistically significant ($p<0.05$). There is a need for effective mass media campaign to educate the older population so as to prevent, control and eventually eliminate the disease by 2030. Awareness about rabies can be increased by undertaking IEC activities in print and electronic media by undertaking targeted awareness campaigns.

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