

# Taboos Related to Dog Bite in an Urban Area of Kancheepuram District of Tamil Nadu, India

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## ABSTRACT

**Background:** India is known for its diverse social and cultural backgrounds with wide range of myths and misconceptions related to diseases/illnesses. One such belief is certain food taboos and diet restrictions practiced following dog bite, which is widely prevalent.

**Materials and Methods:** This is a community based cross-sectional study conducted among adults population in Anakaputhur area of Kancheepuram district. The sample size was estimated to be 275 based on previous study data and simple random sampling method was used for data collection. Data collected was analysed using SPSS version 16 and results described using descriptive statistics and Chi-square test was used for finding statistical association.

**Results:** About 84.4% of the study participants said that some kind of restrictions should be followed in case of dog bite, among

them 68.7% said non vegetarian foods should be avoided. About 81 % of those bitten by dogs followed some form of food restrictions. Nearly 93.6% of those bitten did follow certain restrictions, based on advice of family members/relatives while about 6.4% of the study group followed restrictions based on advice by 'medical personnel'. Illiterates and those educated up to high school; participants with no history of animal bite in their family, were more at risk of having misconceptions ( $p < 0.05$ ). Pet owners have more misconceptions compared to non pet owners.

**Conclusion:** This study reveals the existence of certain food taboos in case of dog bite among the study population. These practices and taboos are of no use and can be harmful at times. It is important to clear these misconceptions through appropriate health education measures for better health seeking behaviour and management.

**Keywords:** Cultural beliefs, Food restrictions, Misconceptions

## INTRODUCTION

India is known for its diverse social and cultural backgrounds. Between the States and between the districts itself the people's belief and practices varies. Even now, a wide range of myths and misconceptions related to diseases/illnesses are prevalent and people have great faith in rudimentary folk medicine of unproven efficacy. These types of socio-cultural factors and influences are in practice for centuries and attempts made to change these factors often failed due to the defiant community perception. One such belief is based on taboos related to restrictive food habits during the period of certain illnesses.

The term taboo means the prohibition of an action based on the belief that such behaviour is either too sacred and consecrated or too dangerous and accursed for ordinary individuals to undertake. Taboos are often associated with certain cultures, but they have been present in virtually all societies, past and present [1].

Taboos related to restriction in foods are followed in India by communities depending upon their cultural and religious beliefs, some section of the people strictly follows vegetarian diet and even in vegetarians some people avoid items like garlic and onions. Muslims strictly avoid pork and Hindus will not consume beef etc and these food habits have religious sanctions from early days [2]. Restrictions like avoiding oily, spicy and non vegetarian food during illness is a good practice, but sometimes it goes beyond the level of acceptance like avoiding fruits and taking maida based bread during illness and consuming milk while having gastro-enteritis.

Dog bite is one such situation where certain restriction has been viewed seriously and followed all over the country. These restrictions vary from region to region, ranging from avoiding bath to food restrictions. Some of the studies done in India have brought out a list of restriction followed by the victims which includes: not eating potatoes, milk, coriander, dhal, spicy foods, tomatoes, meat, etc.

Some people were not taking bath from one day up to seven days [3].

In India, many incorrect practices of dog bite management still persist. These include the application of turmeric, salt, ghee, chilies, hydrogen- peroxide and cow dung to the wound and a belief that washing the wound actually causes hydrophobia. They believe that activities like dietary changes can prevent rabies/increase the effectiveness of vaccination, eventually stops seeking appropriate treatment [4,5]. According to Association for Prevention and Control of Rabies in India, there is no need for any diet restrictions post dog bite and during Post Exposure Treatment period [6].

With this background, and considering the apprehension regarding food habits among patients with dog bite, we aimed to find out the existing taboos/restrictions practiced in relation to dog bite in the urban health center catchment area in Kancheepuram district of Tamil Nadu, India.

## MATERIALS AND METHODS

**Study design, study area and study population:** This is a community based cross-sectional study conducted in the urban health training center area of our medical college at Anakaputhur, in Kancheepuram District. The study population identified was the adults aged 20 years and above belonging to both sexes, residing in the field practice area at the time of the study period.

**Sample size:** The sample size was estimated based on the prevalence of taboos (42.15%) related to dog bite found in a study done by Varsharani in Latur district of Maharashtra [3]. Based on this the sample size was estimated using the formula:

$$N = \frac{(Z\alpha^2 \times p \times q)}{L^2}$$

where, Z - Value of alpha error, Prevalence (P) = 42.15%, Q = 100 -

P = 57.85%, Precision (L) = 15% of 'P' = 6.3. The estimated sample size was 236, and considering a 10% non response, the sample size was 259. This has been rounded off to 275 as the sample size for this study.

**Sampling method:** Simple random sampling method was used for the selection of study participants. A list was prepared using the street wise population and family list of our urban field practice area. The total adult population is about 23,113. Random numbers were generated using computer software and subjects for the study selected accordingly.

**Data collection method:** The data collection was carried out during January to March 2014. A semi-structured questionnaire was prepared for the data collection. The questions were related to the knowledge and practices regarding the taboos related to restrictive food habits following dog bite. The data was collected by house to house visits and interviewing all the selected subjects. The purpose of the study was clearly explained and an informed consent in local language was obtained from study participants before the data collection.

**Pilot Study:** Pre-testing was carried out on 30 individuals for standardizing the questionnaire. Based on the observations made during the pilot testing, necessary changes were made in the questionnaire. The results of the pilot test were not included in the final analysis.

**Data analysis:** Data collected was analysed using SPSS version 16. Results were expressed in frequencies. Chi-square test was used for finding out any association between the studied variables. The results obtained with p-value < 0.05 were considered as statistically significant.

**Ethical committee approval:** The study was approved by institutional ethics committee of Sree Balaji Medical College and Hospital.

## RESULTS

This study on taboos related to dog bite in an urban area of Kancheepuram district shows very interesting findings. The [Table/ Fig-1] shows the demographic profile of the study participant.

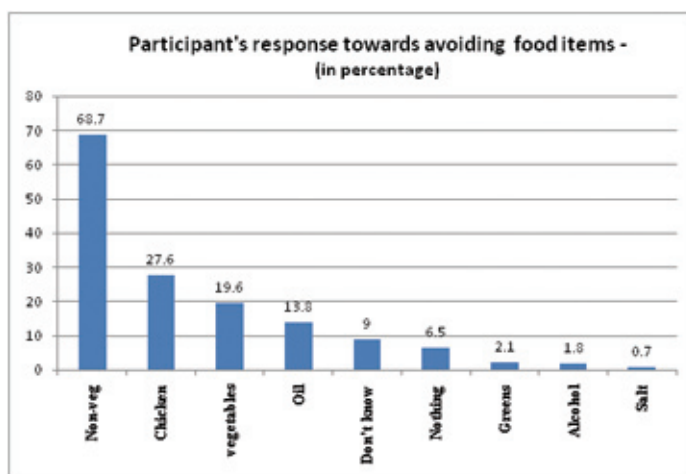
**Taboos related to dog bite:** About 84.4% of the study participants said that some kind of restrictions should be followed in case of dog bite, among them 68.7% said non vegetarian foods should be avoided [Table/Fig-2,3]. About 81% of those bitten by dogs followed some form of food restrictions and 62% of them avoided non-vegetarian food after the bite incident. Nearly 93.6% of those bitten did follow certain restrictions, based on the advice of family members/ relatives. About 6.4% of the study group followed restrictions based on advice by 'medical personnel's'.

**Association between taboos related to dog bite and background characteristics:** In this study, illiterates and those who are educated up to high school (95.3%) were more at risk of lack of knowledge regarding misconception on food restriction following animal bite compared to those who had diplomas or college education (86.7%), with an Odds Ratio of 3.1 (1.2-8.4 CI), the association was found to be statistically significant ( $\chi^2$ - 5.8,  $p$ < 0.02) [Table/Fig-4].

People with no history of animal bite in their family (96.3%) were more at risk of lack of knowledge regarding misconception of food restriction following animal bite compared to people with previous history of animal bite in their family (82.8%), with an Odds Ratio of 5.4 (2 -14.5 CI), the association was found to be statistically significant ( $\chi^2$ - 13.7,  $p$ < 0.0001). Pet owners (96%) were more at risk of lack of knowledge regarding misconception of food restriction following animal bite compared to those who don't have pets (81.6%), with an Odds Ratio of 0.2 (0.07-0.5 CI), the association was found to be statistically significant ( $\chi^2$ - 13.6,  $p$ < 0.0001).

S.No	Demographic variables	Frequency (N=275)	Percentage
1	<b>Age</b> (in years)		
	20-29	74	26.9
	30-39	74	26.9
	40-49	50	18.2
	50-59	45	16.4
	60-69	25	9.1
	70 and above	7	2.5
2	<b>Sex</b>		
	Male	116	42.2
	Female	159	57.8
3	<b>Education status</b>		
	Professional	3	1.1
	Graduate	37	13.5
	Diploma	20	7.3
	HSC	32	11.6
	Middle school	128	46.5
	Primary school	14	5.1
	Illiterate	41	14.9
4	<b>Occupation</b>		
	Professional	3	1.1
	Semi-professional	8	2.9
	Clerical/shop owner/farmer	5	1.8
	Skilled worker	26	9.5
	Unskilled worker	83	30.2
	Unemployed	150	54.5
5	<b>Religion</b>		
	Hindu	243	88.4
	Muslim	10	3.6
	Christians	22	8.0
6	<b>Family type</b>		
	Nuclear	208	75.6
	Joint	21	7.6
	Three generation	46	16.7
7	<b>Do you own pet</b>		
	Yes	49	17.8
	No	226	82.2

[Table/Fig-1]: Demographic profile of the study group



[Table/Fig-2]: Misconceptions about food restrictions related to dog bite

## DISCUSSION

Bite by a rabid dog will lead to rabies, which is a fatal disease without any cure. Rabies is one of the most important zoonotic

S.No	Taboos related to dog bite	Frequency (n=275)	Percentage
1	<b>Restrictions required following dog bite</b>		
	Yes	232	84.4
	No	18	6.5
	Don't know	25	9.1
2	<b>Things to be avoided* (N=275)</b>		
	Non-vegetarian	189	68.7
	Chicken only	76	27.6
	Oil	38	13.8
	Greens	06	2.1
	Some vegetables	54	19.6
	Nothing	18	6.5
	Don't know	25	9.0
	Alcohol	05	1.8
	Salt	2	0.7
3	<b>History of dog bite in your family</b>		
	Yes	58	21.1
	No	217	78.9
4	<b>Restrictions followed after dog bite (N=58)</b>		
	Yes	47	81.0
	No	11	19.0
5	<b>Food items avoided following dog bite* (N = 58)</b>		
	Non-vegetarian	36	62
	Chicken in specific	27	46.5
	Oil	05	8.6
	Greens	01	1.7
	Some vegetable	15	25.9
	Nothing	11	19
	Salt	01	1.7
6	<b>Person providing advice regarding food restrictions (N=47)</b>		
	Family members, relatives & friends	44	93.6
	Medial professional	3	6.4
<b>[Table/Fig-3]:</b> Taboos related to dog bite in the study participants			
* Multiple responses			

diseases in India and one of the oldest recognized diseases which affect humans [7]. Various cultural practices are followed after dog bite and different myths are associated with the disease, which can influence the post exposure treatment seeking behaviour of the victims [3].

In this study the age of the study population ranged from 20 to 70 years and more than half of them belonged to the age group of 20 to 40 years. About 42.2% of the study groups were males and 57.8% were females. Majority of the participants (46.5%) studied up to middle school level and 14.9% were illiterates. Level of illiteracy in this study was more or less comparable with the studies conducted earlier by Varsharani K, Umrigar P and Gaddekar R [3,8,9].

S.No	Restrictions followed	n	Taboo's Present	X <sup>2</sup>	OR	95% CI	p-value
1	<b>Education</b>						
	Illiterate/Primary/middle school/HSC	215	205 (95.3%)	5.8	3.1	1.2 – 8.4	0.02
	Professional/graduate/diploma	60	52 (86.7%)				
2	<b>Do you own a pet</b>						
	Non Pet owners	59	40 (81.6%)	13.6	0.2	0.07 – 0.5	0.0001
	Pet owners	226	217 (96%)				
3	<b>H/O dog bite in the family</b>						
	No	217	209 (96.3%)	13.7	5.4	2 – 14.5	0.0001
	Yes	58	48 (82.8%)				

**[Table/Fig-4]:** Association between taboos related to dog bite and background characteristics

About 17.8% of the households had pet dogs and about 21.1% of respondent had history of dog bite in their family. Myths and taboos which had been imparted in the community during ancient period still continue to be in practice. People have different perception and stigma about dog bites and they still believe in the native medical practices in case of treating dog bite. In India, various cultural practices are followed after dog bite. The application of soil, chili paste, oil etc is common but unnecessary and damaging the tissue further [10].

This study reveals that, taboos following dog bite are very high but mostly related to restriction of food items only. About 84.4% of the study population mentioned that it is necessary to follow some kind of food restrictions. It was surprising to find that about 68.7% said non-vegetarian items should be avoided (27.6% said chicken in particular). About 19.6% said some vegetables should be avoided. This is in contrast to the finding reported by Varsharani K [3] and Bedi R [11]. This restriction of non vegetarian items was not found in any other studies done in any other regions earlier. This difference could be due to regional variation in the beliefs and cultural practices of the study area. There are websites like 'Wiki How' which advocates non-vegetarian food restrictions for 3 weeks after a dog bite for which there is no scientific basis [12].

Varsharani K [3] reported that, about 69% animal bite cases were associated with one or more cultural practices and 42% with taboos and most common taboos were related to food (21.97%) followed by not taking bath up to seven days (12.99%) and not drinking water for one day (2.23%). Bedi R et al., reported that about 1.06% of the victims followed some kind of food restriction and 0.14% avoided mirror/water. Multiple myths are associated with the disease, which vary from region to region and they determine the post exposure treatment seeking behaviour of animal bite victims [13].

It is interesting to see that pet owners were more at risk of lack of knowledge regarding misconception of food restriction following animal bite. This could be due to the fact that, the pet owners could be encountering animal bite problem more frequently when compared to the non pet owners and should have acquired this misconception from the society [14].

Lot of studies had been done related to animal bite / dog bite and rabies including nationwide multi-centric studies but very few explored the area concerned with myths and misconceptions related to cultural taboos and restrictions [3,11,15,16]. Since India is home of diverse cultures, customs and beliefs, further research is needed in this area all over the country to find out the real situation and to plan interventions accordingly. People are still having faith in traditional healers and alternative medicine practice. Herbal medicines used by these traditional healers do not have any scientific base and may delay in getting the much needed life saving Anti Rabies Vaccination.

## CONCLUSION

This study result shows that, taboos related to food restrictions after dog bite in the study participants is higher when compared to other studies done in India. The level of education and previous exposure to animal bite had been found to be an important factor which creates significant difference in the knowledge level of the participants. There seems to be a big gap in the awareness about the appropriate management protocol of dog bite.

This study found out that many cultural practices were prevalent among the study groups; which are useless and sometimes harmful. The public has to be educated through various methods of health education, involving both public and private health sector, members of the community including self help groups etc to reduce the false beliefs and misconceptions about management of dog bite and to encourage appropriate health seeking behaviour among them.

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