



ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING RABIES AND ITS PREVENTION AMONG PATIENTS ATTENDING ARV CLINIC AT A TERTIARY CARE HOSPITAL : A CROSS-SECTIONAL STUDY IN PUNE, MAHARASHTRA.

Community Medicine

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ABSTRACT

Background: Rabies is a viral zoonosis and human infection usually occurs following transdermal bite or scratch by an infected rabies animal. It is one of the most dangerous and completely vaccine preventable disease. Common men are vulnerable to animal bites. So, this study was undertaken to study the knowledge, attitude and practice regarding animal bite and rabies among patients attending Arv Clinic facility at a tertiary care hospital. **Methods:** A cross sectional study was done in campus of BJGMC medical college, Pune, Maharashtra, India. Data was collected by using pre-structured questions on rabies and were interviewed from 384 patients attending Arv Clinic. Data was entered and analyzed using SPSS V.17. Descriptive statistics and chi square test were applied. KAP score were calculated. **Results:** Mean age group of study participants was 20.39±18.03, 71.87% were male and 27.6% were female. Only 33.33 % among 384 patients had good KAP score. On questioning, knowledge about immunoglobulins use in rabies only 2(0.5%) out of 384 study subjects knew it, and on asking knowledge about complete washing of wound for 15min with soap and water after animal bite, it was having in 3 (0.7%) subjects out of 384. Their knowledge, attitude and practice with respect to prevention and treatment of rabies can be improved by providing proper health education especially among younger adults and school going childrens. **Conclusions:** People attending Arv Opd had poor knowledge about animal bite and rabies. KAP score was significantly associated with age, sex, education.

KEYWORDS

Patients attending ARV Clinic, KAP score, Rabies

INTRODUCTION

Rabies is an endemic disease in Indian subcontinent. It is one of most fatal disease to human mankind. Although it is a 100% fatal disease but it is almost preventable by vaccination, immediate wound washing with soap and water for 15 minutes after dog bite or animal exposure, and knowledge about how to take care of wound, if one have good knowledge about how to tackle this deadly disease, one can seek immediate medical remedy in case of post exposure to dog bite, and hence respective life can be saved. Rabies is a zoonotic disease transmitted to humans via transdermal animal bite or scratch from rabies infected animal nails leading to breach in transdermal epithelium of skin. Any form of breach in transdermal epithelium of skin, however small it may be, if it leads to bleeding of skin, it warrants immediate post exposure prophylaxis for rabies with vaccination in active form and if needed in passive form in form of immunoglobulins in immediate setting, without any form of contradiction be age or sex. Rabies disease is present in almost all continents of world except Antarctica. With over 95% deaths reported from Asia and African countries. In an annual year on an average 59000 of deaths are reported from all over world from rabies. Among that most of 40% death are reported from under 15 year age childrens. Childrens between 5-14 age group are frequent victims. Every year, more than 29 million people worldwide receive a post exposure vaccination to prevent the disease - this is estimated to prevent hundreds of thousands of rabies deaths annually. In 99% cases reported all over world, dog are primary source of infection to humans. From infected animals it is transmitted to humans via saliva through direct contact of mucosa, eyes, or open wound. India is Endemic to 36% of total death reported to global rabies data to WHO. In year 2022, annual death from rabies in India was reported to be 307 as information given by health minister in Indian parliament. Earlier many studies have been done on medical students, health care professional, veterinary personals, and animal bite victims. Delhi reported maximum cases with 48, followed by west Bengal

38, then 29 each from states like Maharashtra, Karnataka, Andhra Pradesh.

Objectives

- 1: To assess the socio-demographic profile of study participants
- 2: To study the knowledge, attitude and practice regarding animal bite and rabies among people attending ARV Clinic
- 3: To identify factors associated with KAP regarding animal bite and rabies

Methods

A cross-sectional study was done in the campus of B.J.G.M.C and Sassoon general hospitals Pune-1, Maharashtra, India, for a period of 3 months (February - May 2023). The required sample size for this study was estimated by considering 50% of population knowing about Rabies since there is no awareness study about rabies and prevention among people attending Arv clinic in a tertiary care hospital, and before so by considering 95% confidence interval, 5% absolute precision sample size calculated is 400. By formula: $N = 4 * p * (1 - p) / l^2$ (P is the prevalence, l is the absolute precision). Data was collected on 3 alternate days of a week, each week around 33-35 workers were interviewed randomly. Those who did not give consent the next worker was interviewed, so by 12 weeks end, total sample size we have got is 400. Data was collected using a semi structured, pre-designed interview method. The method consisted of questions regarding basis socio demographic characteristics, knowledge, attitude and practice of animal bite and rabies. Data was collected after taking informed consent from workers who were working in fields at the time of data collection. Data analysis was done in department of community medicine by using SPSS version 17. Percentages and chi square test were applied to test association between categorical variables. KAP (knowledge, attitude and practice) scores were calculated as below KAP scoring: 21 questions were asked for each

participant regarding cause, sources and mode of transmissions, clinical features and prevention practices and treatment measures of rabies which was resulted in a response of either, choose the correct answer (had got one mark) or wrong answer (had got zero mark) for each question. The mean scores were calculated for KAP. The participants who had KAP score more than mean were considered as good and less than mean was considered as poor. Good knowledge was defined as those getting a score of 10 and above, poor knowledge as getting a score less than 10.

Table No 1 : Sociodemographic Characteristic Among Study Participants (N=384)

Variables		N = 384	N= %
Sex	Male	276	71.87
	Female	106	27.60
	Transgender	2	0.5
Age	5-10	142	36.97
	11-15	101	26.30
	16-30	82	21.35
	31-90	59	15.36
Residence	Urban	258	67.18
	Rural	126	32.81
Education	Illiterate	4	1.04
	Primary	144	37.5
	Secondary	99	25.78
	Higher secondary	56	14.58
	Graduate	72	18.75
	Post Graduate	13	3.3

Socio-Demographic Characteristic of Study Participants(Above Table no 1): Out of 400, after excluding people not interested and not giving consent for study, we interviewed 384 people finally and enrolled them. Out of 384 total, in Gender wise, 276 (71.87%) of subjects were male in majority, and female were 106 (27.87%), and among them, 2(.5%) were transgender. In Age group wise, out of 384, age group of 5-10 years were highest with 36.97%, and age group of 31-90 were lowest with 15.36%. Residency wise, out of 384, urban residing participants were highest with 67.18%, and rural residing participants were 32.81%. In Education wise distribution, participants with primary education had highest numbers of 37.5% and participants from postgraduation had lowest numbers 3.38%, illiterate among them were 4 (1.04%)

Table 2: Knowledge Of Study Participants (n=384) About Rabies Disease Basics.

Questions serial no	Answers		
	Yes	No	Total
1: Have u heard of word rabies ?	342 (89.06%)	42 (10.93%)	384
2: Do u know how rabies is transmitted ?	298 (77.60%)	86 (22.39%)	384
3: Do u know rabies can be caused by other animals also, other than dog ?	38 (9.8%)	346 (90.1%)	384
4: Can u name any other animals than dog, causing rabies ?	26 (6.77%)	358 (93.22%)	384
5: Do u know rabies is caused by virus ?	21 (5.46%)	363 (94.53%)	384
6: Apart from animal bite, other mode of rabies transmission u know?	11 (2.86%)	373 (97.13%)	384
7: Symptoms of rabies in man do u know ?	357 (92.96%)	27 (7.03%)	384
8: Symptoms of rabies in dog ??	346 (90.10%)	38 (9.89%)	384

Above Table No 2:

Out of 384, 342 (89.06%) participants knew word rabies, also 298 (77.60%) participants knew transmission mode of rabies, 38 (9.8%) people knew animals other than dog, as source of rabies disease, but only 21 (5.46%) participants knew virus as a causative agent for rabies disease, 363 (93.22%) participants didn't know causative agent for transmission of rabies disease, also among all participants, only 26 (6.77%) can answer names of other animals, other than dog, as a source of transmitting rabies. Among 384, only 11 (2.8%) participants knew other mode of transmission of rabies than animal bite, also 357 (92.9%) participants knew symptoms of rabies in man, and 346 (90.1%) knew symptoms of rabies disease in dogs.

Table No 3: Knowledge About Rabies Disease Prevention Among Study Participants

Questions serial no	Answers		
	Yes	No	Total
1: Do u know rabies is fatal disease ?	46 (11.97%)	338 (88.02%)	384
2: Do u know that injection of vaccination is needed after a dog bite ?	322 (83.85%)	62 (16.14%)	384
3: Do u know number of vaccination dosage needed for complete immunisation after a dog bite?	18 (4.6%)	366 (95.31%)	384
4: Do u know what is immunoglobulin?, Given after severe dog bite	2 (0.5%)	382 (99.47%)	384
5: Do u know vaccination can be done in humans before dog bite as a prevention against rabies ?	33 (8.59%)	351 (91.4%)	384
6: Do u know we can vaccinate dogs also for prevention of rabies disease?	42 (10.93%)	342 (89.06%)	384
7: Do u know immediate washing the animal bite wound with soap and water is important?	61 (15.88%)	323 (84.11%)	384
8: if yes u know wound washing is important, can u tell how long u need to wash the wound ?	3 (0.7%)	381 (99.21%)	384

Above Table No 3

Out of 384, in knowing or questioning participants, how fatal rabies disease is, only 46 (11.97%) knew rabies is fatal disease (that needs immediate medical intervention), and 338 (88.02%) participants don't know how fatal rabies disease is. Out of 384, on questioning of requirement for vaccination injection after dog bite, 322 (83.8%) knew it and 62 (16.14%) and were not knowing it. Out of 384, on vaccination questions, only 18 (4.6%) participants knew number of vaccination dosage needed for complete immunisation after a dog bite, and 366 (95.31%) participants didn't know at all. Out of 384, on questioning immunoglobulins know how, only 2 (0.5%) knew what are immunoglobulins, and rest 382 (99.47%) didn't know at all. Out of 384, on questioning pre exposure vaccination prophylaxis on rabies for humans, only 33 (8.59%) participants knew it, and rest 351 (91.4%) didn't know at all.

Table No 4: Attitude About Prevention Of Rabies Disease In Study Participants (n=384)

Questions Serial no	Answers	
	Given	%
1: Preventive measures to be taken after a dog bite		
a: Wash the wound immediately with soap and water for 15 minutes	7	1.8
b: Apply Turmeric on wound	9	2.34
c: Apply mud from a (basil) Tulsi plant pot	8	2.08
d: Go near a Quack for treatment	12	3.12
e: Take to hospital for treatment	348	90.6
TOTAL	384	100

Above Table No 4

Out of 384, on questioning about preventive measure to be taken on rabies, Only 7 (1.8%) answered, had right attitude of having need to wash the wound of dog bite with soap and water immediately for 15 minutes, 9 (2.34%) answered on applying turmeric powder on wound post dog bite, 8 (2.08%) answered on applying mud from basil (tulsi) plant pot, 12 (3.12%) answered on going for a quack for medical remedy, and majority 348 (90.6%) answered on taking the patient to near by hospital for medical treatment.

Table No 5: Practice About Prevention Of Rabies Disease In Study Participants (n=384)

Questions serial no	Answers	
	Yes	No
1: Do u have pet animal in your house ?	28 (7.29%)	356 (92.70%)
2: Have you vaccinated your pet animal ?	18 (4.68%)	366 (95.31%)
3: willing to give complete vaccination to your pet?	18 (4.68%)	366 (95.31%)

4:In favour of Mass Vaccine injections against rabies for pet animals?	298(77.60%)	86(22.39%)(7
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Above Table No 5

Out of 384 ,on questioning on prevention of rabies with respect to practice ,Only 28(7.29%) participants had pet animal in home,356(92.7%) didn't had any animal in home,on questioning on vaccination aspect of pet animals in home ,only 18(4.68%) had vaccinated their pets in home,and same number of participants 18(4.68%) were willing to completely vaccinate their pets ,out of 384 on questioning in favour of mass vaccination for pet animals against prevention of rabies , 298(77.60%) replied in favour of vaccination ,and only 86(22.39%) replied in negative way for vaccination in pet animals .

Table No 6: Relationship Between Kap Score And Socio Demographic Profile

Sociodemographic features		Good KAP Score	Poor KAP Score	Chi Square X2	P value <.05 Significant
Sex	Male	276	118	33.89	.00001
	Female	106	12		
	Transgender	2	1		
	Total	384			
Age	5-10	142	36	9.16	.027
	11-15	101	42		
	16-30	82	32		
	31-90	59	24		
	Total	384			
Residence	Urban	258	101	2.96	.085
	Rural	126	38		
	Total	384			
Education	Illiterate	4	1	13.1385	.0106
	Primary	144	28		
	Secondary	99	36		
	Higher Secondary	56	22		
	Graduate	72	21		
	Post Graduate	13	2		
	Total	384			

DISCUSSION**Above Table no 6: Relationship between KAP Score and Socio Demographic Profile.**

In current present study 33.33% % of study participants had good knowledge, attitude practice scores. In a study conducted by Chandan N et al 51% of study participants had good knowledge and attitude scores, where as 45% of study participants had good practice scores⁸. In a study by Tripathy RM et al ,32.45% of study participant had good knowledge ,attitude ,practice⁹ In the present 71.87% of study population were male and 27.6% were females, and 0.5% were transgender subjects. Age ranged from 5 to 90 years. Considering education 1.04% were illiterates, 37.5% had completed primary education, 25.7% had completed high school and 14.58% Completed HSC , 18.7% were graduate ,3.38% were post graduate ,but in a study conducted by Chandan N et al 85% were male and 15% of study population were female. 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 graduation¹⁰In present study ,out of 384 participants in context of genderwise,118 (30.72%) males, 12(3.12%) females, and one transgender 0.26% were having good kap score . However, in the present study ,many subjects 298(77.6%) were knowing how rabies is transmitted ,also 357(92.96%) were knowing symptoms of rabies in man, and 346(90.1%) were knowing symptoms of rabies in dogs.similarly in a study by kishore e tal ,hydrophobia was a presenting clinical feature in man were known to majority of study subjects¹⁰. Similar findings were obtained in a study by Singh et al where all knew about Rabies and 98.6 % knew about the transmission of rabies by dog bite¹¹ .In our study out of 384 ,only 38(9.8%) knew animals other than dog ,as a source of infection for rabies,also only 26(6.77%) were able to name the animals that can transmit rabies other than dogs.In our study ,on assessing knowledge about vaccination ,out of 384 ,322(83.85%) were knowing some form of injections available for rabies treatment ie vaccinations after a dog bite.Similar findings were seen in Chandan N et al⁸,67% study subjects knew some form of vaccination available after dog bite ,so our findings are on higher side of similar study ,this can be attributed to the location of tertiary hospital in city area, and only govt hospital to give ARS administration after dog

bite, and only centre with referral coming from rural areas for ARS administration.Knowledge about first aid and about importance of immunoglobulin after dog bite was not known to majority of the patients in our study ,and similar findings were noted in a study done by Kishore etal¹⁰ .

This could be because majority of the study subjects have studied up to only primary level or secondary level education ,and we cannot see any school dedicatedly making active awareness programme at ground level to get scientific information on rabies,neither government nor any NGO focus on rabies disease dedicatedly in handling this fatal virus judiciously and rationally.As per global data available in Indian context on rabies ,we can find many cases of dog bite are from age group 5-15 yrs, this is vulnerable group and this age group is preschool ,school and high school level institute where knowledge about rabies should be ideally disseminated ,and school going children be made aware about rabies ,but unfortunately we fail in delivering such health education at grass root level, and so we can see rise in rabies cases among this age group more than adults.In an unfortunate event ,in a kyolari village ,konch tehsil,of uttar Pradesh a 2.5 year old girl was bitten by a rabid dog fortnight before,than girl bit 40 people before dying and finally died within 15 days of dog bite,she was taken to a quack for rabies treatment¹¹ .Here attitude of parents towards rabies disease is very important ,in our study were interviewed parents for study age group 5-15yrs ,because been a care takers and parents of childrens they are responsible and take decision on behalf of childrens and rabies outcome is depends on parents informed decision in managing routine medical emergencies among 5-15 age group ,also childrens in this age group are in dependent age group. medical emergency of fatal virus.From above uttar Pradesh case it is now clear that if parents are well informed of rabies disease they will take childrens to hospitals and not to quacks after dog bite for treatment.In knowledge about rabies was found better in graduate and postgraduate patients and it is acceptable in our study ,adults are more aware because of relative activeness on social media,higher education status have higher chance of awareness of good scientific temperament ,also they have access to new information,are always learning and recieve immediate news from peer group about a new event in society,also they take decision by own and self report to hospital whenever a animal exposure happens to them.In context of attitude among study subjects in our study , subjects was higher 348(90.6%) percentage ,as comparable to study findings done by Tripathy RM et al⁹,that is more than half subjects were having good attitude about rabies prevention.In a similar finding on attitude about rabies prevention,a study done by Chandan N et al ,majority study participants said they will wash the wound immediately an go to doctors for treatment⁸ . However, Ichhpujani et al in their study observed that less than 50 % people were in favour of wound toileting⁶.In our study, on questioning ,knowledge about immunoglobulins use in rabies only 2(0.5%) study subjects knew it, and on asking knowledge about complete washing of wound for 15min with soap and water after animal bite ,it was having in 3 (0.7%) subjects ,and knowledge about rabies heard of been a fatal disease was present in 46(11.97%)study subjects.On questioning on pre-exposure prophylaxis to humans against ,only 33(8.59%) study subject knew about vaccination can be given in humans ,before a dog bite.Many study subjects were unaware of the fact that vaccination can be given in high risk dog handlers or people having risk of getting rabies.so proper awareness campaign is needed from governmental in area of IEC activities or agencies or NGO in making people informed and aware about this aspect of prevention of rabies disease among people ,helping them to achieve rise in level of people's knowledge ,so people can access the facilities available in tertiary care hospital in context of pre exposure prophylaxis , and avoid fatality amongs potential risk bearer in future prospective.On questioning on pre-exposure prophylaxis to dogs against rabies ,out of 384 only 42(10.93%) study subjects knew about vaccination prophylaxis in dogs ,and this knowledge is also critical per se,because many people don't know about how primary level of prevention against rabies is done and this is only method to control and to contain the virus at its source ,which WHO recommends most effective measure among all in rabies elimination in a defined geographical area.In our study we didn't calculated socioeconomic status of every subject ,because in our hospital regardless of once socioeconomic conditions ,every single patient have access to both vaccination and immunoglobulins free of cost after admission in IPD or OPD ,so we didn't think to calculate it.In our study in context of statistical significance ,we found age ,sex ,education to be associated with KAP Score.In Age ,higher age is significantly associated with good KAP Score,this can be attributed to

the higher level of responsible behaviour ,level of higher education ,and decision taking capacity we can see in higher age group in seeking medical treatment and knowledge ,so better they have knowledge ,attitude and practice score. In Sex ,we found male to be having more KAP Score than female ,this is significantly associated, this can be attributed to the fact that ,majority of males are head of family ,males have more decision taking access in context of medical treatment as compare to females,male are most of the time out of house for job or business purpose ,so they are well verse with the rabies disease knowledge as compare to females and that is reflected in our study.In Education ,education is found to be significantly associated with KAP Score.It is acceptable that higher education is more associated with ,higher level of ability to have scientific temperament related to disease and highly educated people take more decision in a rationale manner than uneducated.hence level of education is statistically founded to be significant in our study.This finding is comparable to findings from study done by Tripathy RM et al ,In which they founded ,age ,sex,education,residence significantly associated with KAP Score.but in our study we didn't found residence to be significantly associated with KAP Score.in our study people from both rural and urban have access to hospital health care services ,its more economical,reliable than private counterpart in availability of rabies treatment management under one single roof.So residence was not founded to be statistically associated with KAP Score.In another study from Bahir Dar town by Guadu et al KAP scores were significantly associated with sex and educational status¹² .In study by Chandan N et al 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.

CONCLUSION

we found more awareness about knowledge about rabies disease ,its management and prevention among male sex,higher educated participants,higher age group participants only,as compare to female sex,lower educational status,and young childrens respectively .

Recommendations

we need to circulate IEC material for mass awareness campaign on basics information on rabies disease and rabies specific knowledge ,how disease is fatal ,how to manage it immediately,where to report immediately ,how to tackle this kind of fatal disease in a target specific age group and step by step manner .Also we recommend comprehensive IEC activities for better understanding and awareness , among school going childrens and young adults in Schools and colleges by governmental agencies and NGO doing work for rabies awareness .Because majority of deaths about 40% are reported among childrens and young adolescents between 5-15 yrs age group as per WHO statistics on rabies.Governmental agencies should focus on this age group 5-15 yrs as a priority one ,to address the rabies disease in a scientific and goals intended manner ,as per sustainable development goals and zero rabies death by 2030

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