

Knowledge Regarding Management of Dog Bite Among Mothers of School Going Children

Ms. Archana K.R.¹, Ms. Betsy Sunny², Ms. Gopika M.V.³, Ms. Harsha Mary V.A.⁴, Mr. Jis D Veliyath⁵, Ms. Jomol P.J.⁶, Ms. Surya Mol R⁷, Mr. Vineeth Gopi K⁸, Dr. Lt. Col. Rosy K.O⁹
^{1,2,3,4,5,6,7,8,9}Department of Child Health Nursing, Aswini College of Nursing, Thrissur, Kerala, India

Abstract—Background: The imperative to safeguard public health is a paramount concern for governments worldwide, with a particular emphasis on addressing the burgeoning challenge of dog bite incidents and subsequent rabies transmission. The stark reality of India's 2.2 million reported dog bite cases in 2024, resulting in 37 fatalities, underscores the gravity of this issue. Furthermore, the vulnerability of children under the age of 15, who comprised over 500,000 of the victims, highlights the need for targeted interventions. In the state of Kerala, the alarming statistic of 47 rabies-related fatalities over a four-year period, with Kollam and Thiruvananthapuram districts being disproportionately affected, serves as a clarion call for enhanced awareness and management strategies.

Objectives: The study's objectives were multifaceted, encompassing the evaluation of knowledge levels regarding dog bite management among mothers of school going children in selected community, identification of associations between knowledge scores and socio-demographic variables, and the development of an informative booklet on dog bite management.

Methodology: A descriptive study was carried out among 60 mothers of school going children to evaluate knowledge regarding management of dog bite in Pananchery Gramapanchayath, Thrissur. Convenient sampling technique was used to enroll the mothers of school going children who met inclusion criteria. A Structured knowledge-based questionnaire was used to assess the knowledge level of samples. Data were analysed using descriptive and inferential statistics with SPSS software version 19.

Result: The findings of the study were illuminating, revealing a significant knowledge gap among the participants. A substantial majority, 42 (70%) mothers, demonstrated low knowledge levels regarding dog bite management, while 17 (28.333%) mothers exhibited moderate knowledge, and a mere 1(1.6%) possessed adequate knowledge.

Conclusion: The results underscore the imperative for targeted educational initiatives and awareness programs, tailored to the specific needs of this demographic cohort.

By prioritizing health education and awareness, we can empower communities to take proactive measures in preventing dog bites and mitigating the risks associated with rabies transmission.

Index Terms—Dog bite, knowledge, management, rabies, mothers of school going children.

I. INTRODUCTION

Health has been declared as a fundamental human right. National governments all over the world are striving to expand and improve their health care service to overcome continuous threat from the emergence of diseases. Rabies is a vaccine-preventable, zoonotic, viral disease affecting the central nervous system. In up to 99% of the human rabies cases, dogs are responsible for virus transmission. Children between the age of 5 and 14 years are frequent victims.¹WHO reports that the global cost of rabies is estimated to be around US\$ 8.6 Billion per year including lost lives and livelihoods, medical care and associated costs, as well as uncalculated psychological trauma Rabies is present on all continents except Antarctica. Globally, there is an estimated death of 59000 from rabies annually; however, due to under reporting, documented case numbers often differ from the estimate.²

Rabies caused by stray dog bites has claimed 47 lives in Kerala in the last four years between January 2020 and January 2024 as revealed as a response by the office of the State health director to a Right to Information (RTI) application. The highest number of 10 'confirmed rabies deaths' was reported from Kollam district, followed by 9 in Thiruvananthapuram. Five lives each were lost in Thrissur and Kannur, four in Kozhikode, three each in Ernakulam and Palakkad,

two each in Pathanamthitta, Alappuzha, and Wayanad, and one each in Malappuram and Kasaragod districts during the period.² Multiple studies across Asia and Africa have shown that over 60-80% of mothers lack adequate knowledge on how to manage a dog bite. In one study in India, only 15-30% of mothers knew that the wound should be washed with soap and water immediately.³ In recent events in Kerala, there have been reports of children dying from rabies after being bitten by stray dogs, including a 10-year-old boy in Alappuzha and an 11-year-old differently-abled boy in Kannur, highlighting the need for increased awareness and action against stray dog bites.⁵

In light of the plethora of research underscoring the imperative need for awareness programs on dog bite prevention and management, particularly in coastal communities, it becomes increasingly evident that a paradigm shift in public health strategy is warranted. This study's significance lies in its potential to inform the development of targeted awareness programs and interventions that cater to the specific needs of mothers and their school-going children. By evaluating the knowledge of mothers regarding dog bite management, this research aims to identify areas where education and awareness are lacking, thereby enabling the creation of more effective public health strategies. Ultimately, this study's findings have the potential to positively impact community health outcomes and reduce the incidence of dog bites among children.

II. METHODS

A descriptive study was adopted to assess the knowledge regarding management of dog bite among mothers of school going children at selected community, Thrissur. The study was conducted in ward 1 and ward 2 of Pananchery Gramapanchayath, Chembuthara, and Thrissur District. The objectives of the study include (1) To assess the level of knowledge regarding the management of dog bite among mothers of school going children. (2) To find out the association between knowledge score of mothers of school going children with their selected socio demographic variables. (3) To develop an information booklet on management of dog bite. The convenient sampling technique was used to enroll the 60 mothers

of school going children to evaluate the knowledge level regarding management of dog bite.

The mothers who are not the mothers of school going children (age between 6-12 years), not present at the time of data collection, cannot read and write Malayalam were excluded from the study. Informed consent was obtained from the mothers.

The data collection proforma consists of 2 sections, first section included data regarding demographic data elicited are age, religion, qualification, marital status, area of residence, type of family, occupation, history of family members having dog bite, any pet dogs in the family, any previous knowledge regarding management of dog. The second section includes structured questionnaire having 25 questions regarding knowledge on management of dog bite. The correct response carried 1 mark and wrong response carried none.

THE INTERPRETATION OF KNOWLEDGE LEVEL

Scoring	Level of knowledge
0-8	Poor knowledge
9-16	Moderate knowledge
17 -25	Good knowledge

The study was approved by the ethical committee of college and permission taken from the administrative department. The tool was developed by the researcher, after a review of recent relevant literature. After obtaining content validity from experts, the study was conducted among mothers of school going children by following the Inclusion and exclusion criteria. Both descriptive and inferential statistics (Frequency, percentage, chi square) was used for analysis of data.

III. RESULTS

SECTION A

DATA ON DEMOGRAPHIC VARIABLES INCLUDES:

- On the basis of age, 12(20%) of sample belonged to the range of 20-30 years, 34(56.7%) of sample belonged to the range of 31-40 years, 14(23.3%) of sample belonged to the range of 41-50 years of age.

- On the basis of religion, 32(53.3%) were Hindu, 17(28.3%) were Christian and 11(18.3%) of sample were Muslim.
- Regarding the educational qualification 15 (25%) were having secondary education, 24(40%) were having higher secondary education, 19(31.7%) were having diploma/graduate, 2(3.3%) were post graduates.
- With respect to the marital status 60(100%) of sample were married.
- The view to area of residence, 19(31.7%) lives in urban area and 41(68.3%) lives in rural area.
- With respect to type of family, 43(71.7%) of sample belonged to nuclear family and 17 (28.3%) of sample belonged to joint sample.
- In the view of occupation, 18(30%) were private employers, 6(10%) were government/semi government employers, 12(20%) were daily wagers and 24(40%) were belonged to other occupation.
- On the basis of history of dog bite, 50(83.3%) of sample have history of dog bite and 10(16.7%) of sample having no history of dog bite.
- In accordance with presence of pet dogs, 47(78.3%) samples having pet dogs and 13(21.7%) is not having pet dogs in their family.
- In perspective of previous knowledge regarding management of dog bite, 31(51.7%) having previous knowledge and 29(48.3%) were not having previous knowledge.

SECTION B

Data on level of knowledge on management of dog bite among mothers of school going children includes:

TABLE 1: FREQUENCY AND PERCENTAGE DISTRIBUTION OF LEVEL OF KNOWLEDGE AMONG MOTHERS OF SCHOOL GOING CHILDREN

Sl.NO	Variables	Frequency	Percentage
1	Inadequate knowledge	42	70%
2	Moderate knowledge	17	28.333%
3	Adequate knowledge	1	1.6%

The table 1 shows the frequency and percentage distribution of level of knowledge among mothers of

school going children. Out of 60 samples 42(70%) mothers are having inadequate knowledge regarding management of dog bite, 17 (28.333%) mothers are having moderate knowledge and 1 (1.6%) mother having adequate knowledge regarding management of dog bite.

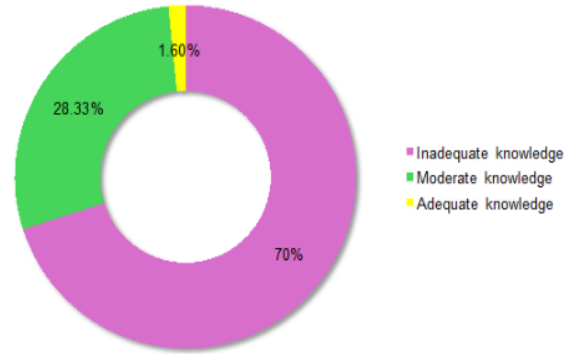


FIGURE 1: PERCENTAGE DISTRIBUTION OF MOTHERS ACCORDING TO THEIR LEVEL OF KNOWLEDGE REGARDING MANAGEMENT OF DOG BITE

SECTION C

Data on association of knowledge on management of dog bite with their selected demographic variables. Chi square calculated value of age, religion, qualification, marital status, area of residence, type of family, occupation, history of dog bite, presence of pet dogs in family, previous knowledge regarding management of dog bite is less than table value, and there is no significant association between the demographic variables and the level of knowledge. Hence H0 is accepted.

IV. DISCUSSION

The discussion is based on the objective of the study, the first objective is to assess the level of knowledge regarding the management of dog bite among the mothers of school going children.

In-depth analysis of the study findings revealed that in the mothers of school going children, 42(70%) were having inadequate levels of knowledge, 17 (28.3%) of them were having moderate knowledge and 1(1.6%) was having adequate knowledge.

The present study findings were supported by a descriptive study that was conducted by Taha SMAM et al. To assess mother's knowledge, attitudes and practices regarding animal bites for their children in

emergency department of Al-Santa Central Hospital, Egypt. The study aimed to assess mothers' knowledge, attitudes and practices regarding animal bites for their children. A convenience sampling selected 300 mothers of children complaining of animal bites. Three instruments were for the data collection namely, knowledge of mothers concerning animal bites, practices reported by mothers related to animal bites and attitudes of mothers toward animal bites. The findings of the study showed that a significant majority of mothers, 92.7%, possessed a low level of knowledge about animal bites, 76.7%, mothers had demonstrated unsatisfactory overall practices, and 77% exhibited a negative attitude toward animal bites.³

The second objective is to find the association between the levels of knowledge regarding management of dog bite among them others of school going children with their selected demographic variables.

The finding of the study revealed that there is no significant association between the knowledge and selected socio-demographic variables such as age, religion, education, marriage, residence, occupation, history of dog bite, presence of pet dogs, and previous knowledge regarding management of dog bite.

The findings of this study were concordant with a quasi-experimental study performed by Sr. Joseena et al. to assess the effectiveness of planned teaching programme on rabies and management of dog bite among students of selected high school, Kottayam district, Kerala in 2024. Quantitative research approach was adopted. Convenient sampling technique was used to select 36 samples. The study results found that post-test mean percentage was 75% which is higher than mean pre-test knowledge 39.6%. The planned teaching programme was effective; there is no association between demographic variables and knowledge regarding rabies and management of dog bite.⁴

As per the third objective to prepare and distribute an information booklet regarding management of dog bite among the general population.

The booklet distribution, a planned teaching, will enhance the knowledge regarding management of dog bite and this was supported by a comprehensive information booklet on Rabies and dog bite management which was developed by the

investigators, encompassing detailed information on the risk factors, clinical features, and evidence-based management strategies for Rabies.

The results of the present study were supported by a descriptive non-experimental study that was conducted by S Hari G et al. To assess the knowledge regarding prevention and management of dog bite among adults residing at selected areas of Pallithottam, Kollam with a view to develop an information booklet. The objectives of the study were to assess the level of knowledge regarding dog bite prevention and management among adults, to find the association between knowledge on dog bite prevention and management among adults and selected socio-demographic variables, and to develop an information booklet for adults regarding prevention and management of dog bite. The study was conducted among 200 adults who were residing at Pallithottam coastal community area, Kollam. The tool used for data collection consisted of a demographic proforma and a structured knowledge questionnaire. The finding of the study showed that 15.5% has good knowledge, 65.5% had average knowledge and 19% had poor knowledge. The study emphasizes the need for targeted educational interventions, such as the developed information booklet, to enhance awareness and knowledge about dog bite prevention and management among adults in the community.⁵

V. CONCLUSION

Dog bites are zoonotic injuries, that is, they transmit disease between animals and humans and can result in infections like rabies or tetanus. The severity of injuries from dog bites varies significantly, from minor wounds to life-threatening trauma, and effective treatment must begin promptly to prevent infection or serious complications.

The results showed that only 1.6% of the population is having adequate knowledge. And the majority of the subjects (70%) have inadequate knowledge. 28.3% of them are having moderate knowledge. The study findings can be used to improve the knowledge regarding management of dog bite in the general population. The findings of the study have several implications in the field of nursing service, education and research.

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