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ASSESSMENT OF AWARENESS REGARDING LEPTOSPIROSIS AMONG SECONDARY SCHOOL STUDENTS IN VENJARAMOODU, TRIVANDRUM

Community Medicine

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ABSTRACT

Background: Leptospirosis is a zoonotic disease caused by the bacterium Leptospira, which is transmitted to humans through direct contact with water, soil or food contaminated by the urine of infected rodents. In areas affected by floods or poor sanitation, leptospirosis poses a significant public health threat. School children are at high risk of leptospirosis due to their active outdoor play, close interaction with animals and potential exposure to contaminated environments. As they are a key demographic in the community, understanding their level of awareness is essential for developing effective public health interventions. **Methods:** A cross sectional analytical study was conducted among Secondary school students, aged 13-16 years from Government Higher Secondary School, Nellanadu Panchayath. Questionnaires were distributed to 149 students by convenient random sampling. Analysis was done by scoring the responses based on correct answers using MS Excel. Responses to open ended questions were studied and inference was drawn about the source of information and effective educational tool used by students to learn about this disease. **Results:** It was found that 49.7% of the participants have good awareness, 48.3% have moderate awareness and only 2% have poor awareness regarding Leptospirosis. **Conclusion:** It was found that in a high risk district like Trivandrum, only 49.7%. participants had good awareness which is a grim reality. Thus, awareness among this small sample was found to be grossly inadequate. It makes it pertinent to conduct more studies among larger samples across schools in Kerala especially in high risk zones like Alapuzha, Pathanamthita etc in order to understand the gaps and plan strategies to widen their awareness.

KEYWORDS

Leptospirosis, awareness, floods

INTRODUCTION:

Leptospirosis is an emerging zoonotic disease caused by spirochete of the genus Leptospira. It is primarily transmitted to humans through direct or indirect contact with water, soil, or food contaminated by the urine of infected animals, particularly rodents. The disease is prevalent in tropical and subtropical regions, where environmental conditions such as high rainfall, flooding and poor sanitation facilitate its transmission.

According to the World Health Organization (WHO), leptospirosis remains a major public health problem in developing countries including India, where outbreaks often occur during the monsoon season. Despite being a preventable disease, leptospirosis continues to be a significant health burden due to lack of awareness, inadequate preventive measures and delayed diagnosis. The clinical presentation of leptospirosis varies from mild, self-limiting febrile illness to severe, life-threatening complications such as Weil's disease and pulmonary hemorrhagic syndrome. Early recognition and timely intervention are crucial to reduce morbidity and mortality associated with the disease.

School children constitute a particularly vulnerable group because of their outdoor activities, frequent contact with animals and exposure to contaminated environments such as muddy fields and stagnant water. Health education targeting this demographic is vital to reduce transmission and promote preventive behaviors such as wearing protective footwear, avoiding barefoot walking and seeking medical care promptly after exposure.

Understanding the awareness among school children regarding leptospirosis, its mode of transmission, risk factors and preventive measures is essential for planning effective health education strategies. With this background, the present study was undertaken to assess the awareness of leptospirosis among secondary school students in Venjaramoodu, Thiruvananthapuram, Kerala.

METHOD:

A cross sectional analytical study was conducted among Secondary school students, aged 13-16 years from Government Higher Secondary School, Nellanadu Panchayath in Venjaramoodu, Trivandrum. It was conducted in the rainy month of June 2025. Sample size was calculated from the results of the "Sridevi B SS. Knowledge, attitude and practice regarding leptospirosis prevention among the non-paramedical students. EPRA international journal of research & development (IJRD). 2022 oct 3;7(9):1–1."

Sample size was calculated using the formula,

$$n = Z2(1-\alpha/2) \times P(1-P) / d2,$$

where
$P = 56.7\%$, $\alpha = 5\%$, $Z(1-\alpha/2) = 1.96$, $d = 15\%$ of P

So, Sample size, n = 131, Adding a nonresponse rate of 10%, we obtained the Total sample size as 143.

Data was collected using a semi structured questionnaires which were distributed to 149 students by convenient random sampling. There were 17 scored questions with Yes or No responses. There were also 2 questions to find out their source of knowledge regarding the disease & the mode of education they preferred to learn more about it. The total score was 17. The cut-off set was as follows: Score 12-17 = Good awareness, 6- 11 = Moderate awareness, ≤ 5 = Poor awareness.

Responses were scored based on correct answers and analysed using

MS Excel. Responses to open ended questions were studied and inference was drawn about the source of information and effective educational tool used by students to learn about this disease.

Chi square test was used as the test of significance between two variables. p value of < 0.05 was considered to be statistically significant.

RESULTS AND DISCUSSION:

Mean Age And Gender Distribution

A total of 149 participants were included in this study. The mean age of the participants was 14.26 ± 0.739 years (range: 12–16 years). The age distribution of the respondents followed an approximately normal distribution as depicted in the histogram (Figure 1). With respect to gender distribution, 77 participants (51.68%) were females and 72 participants (48.32%) were males (Figure 2). This indicates that the study population had almost equal representation of both genders.

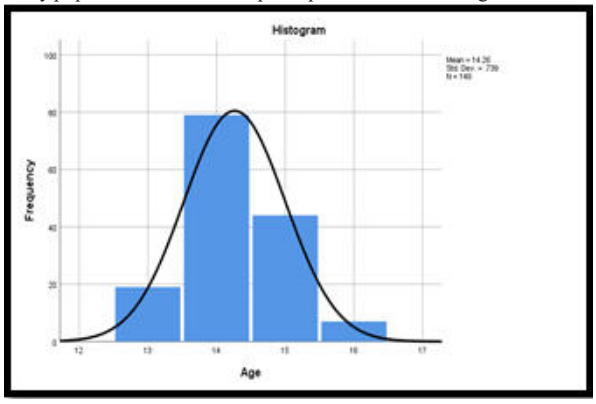

Figure 1. Mean Age= 14.26 ± 0.739 Years

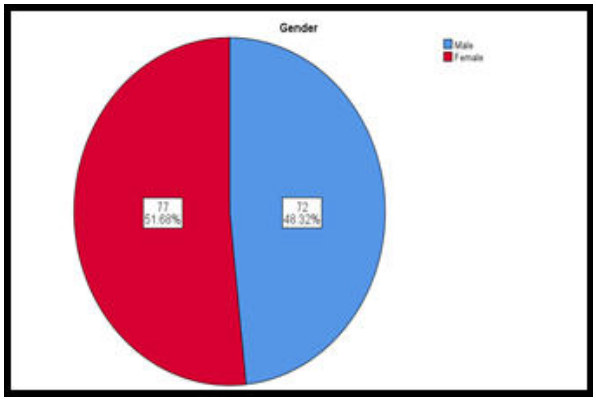

Figure 2. Gender Distribution Among Study Participants

Mean Total Score

The mean awareness score of the respondents was 13.33 ± 2.44, with a maximum possible score of 17. Based on the predefined cut-off values, the participants were categorized into three groups: Good awareness (Score 12-17): 74 participants (49.7%); Moderate awareness (Score 6-11): 72 participants (48.3%); Poor awareness (Score ≤5): 3 participants (2) is 13.33 ± 2.44

Total score= 17
Score 12-17 = Good awareness
Score 6- 11 = Moderate awareness
Score ≤ 5 = Poor awareness

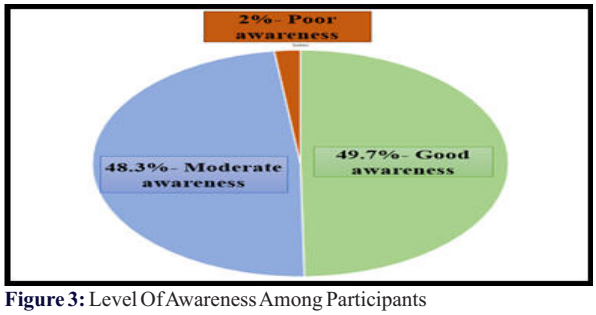

Figure 3: Level Of Awareness Among Participants

Table 1. Showing Cut Off Scores

Category	Frequency	Percentage (%)
Good awareness	74	49.7
Moderate awareness	72	48.3
Poor awareness	3	2

From the responses, we got to know that,

Majority of the participants had heard about the disease, knew it was bacterial, spread by rats, that treatment is available, walking barefoot and rainfall are the associated risks and recognised it as a serious health concern. But it was shocking to find out that 52% of the participants were unaware of the mode of transmission & 63% didn't know that wearing protective clothing can decrease the risk. Also, only a small percentage were aware that prophylaxis is available.

Table 2. Distribution Of Participants According To Response

S.No.	Question	Yes (with %)	No (with %)
1	Heard about ellipani	129 (86.58%)	20 (13.42%)
2	Transmitted via infected animals/urine	71 (47.65%)	78 (52.35%)
3	Bacterial disease	98 (65.77%)	51 (34.23%)
4	Prophylaxis available	41 (27.52%)	108 (72.48%)
5	Spread by Rats	131 (87.92%)	18 (12.08%)
6	Treatment available	136 (91.28%)	13 (8.72%)
7	Wearing protective clothing to decrease	55 (36.91%)	94 (63.09%)
8	Rainfall, walking barefoot are risks	122 (81.88%)	27 (18.12%)
9	Important to educate on this	138 (92.62%)	11 (7.38%)
10	Climate change affects the spread	112 (75.17%)	37 (24.83%)
11	Programs to control rodents	63 (42.28%)	86 (57.72%)
12	A serious health concern	123 (82.55%)	26 (17.45%)
13	Vaccine available	97 (65.1%)	52 (34.9%)
14	Human to human transmission	103 (69.13%)	46 (30.87%)
15	Will take precautions	126 (84.56%)	23 (15.44%)
16	Want to know more about prevention	117 (78.52%)	32 (21.48%)
17	Jaundice is a common symptom	77 (51.68%)	72 (48.32%)

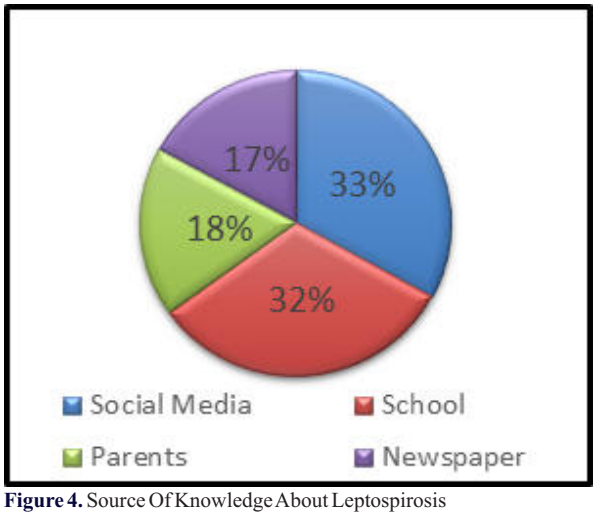

Figure 4. Source Of Knowledge About Leptospirosis

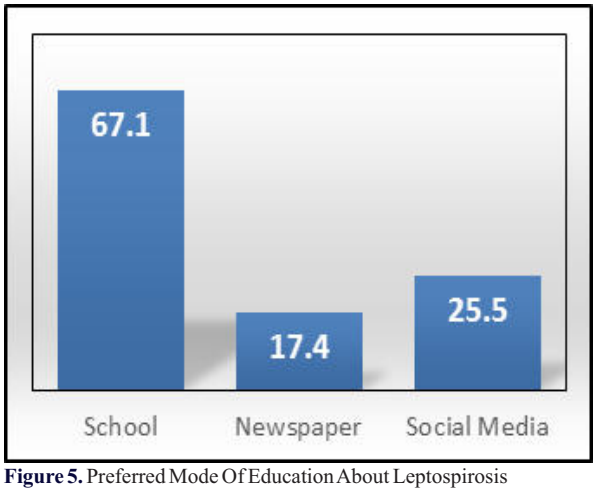

Figure 5. Preferred Mode Of Education About Leptospirosis

Association Between Gender And Knowledge Score

Gender	Good Awareness(in%)	Moderate Awareness (in%)	X^2 value	P-value
Male	36(51.4%)	34(48.6%)		
Female	38(50.0%)	38(50.0%)		
Total	74(50.7%)	72(49.3%)	0.03	0.871

Chi-square= 0.275 df=0.275, p value=0.871

Interpretation : There is no statistically significant association between gender and knowledge score ($p>0.05$). Awareness regarding leptospirosis was similar among both male and female students, indicating that gender did not influence the level of knowledge in this study.

CONCLUSION:

It was found out that only 49.7% participants had good awareness. Given that leptospirosis remains a major public health issue in tropical regions like Kerala, where environmental and behavioral risk factors are prevalent, these findings underscore the need for targeted health education interventions.

Awareness is equivalent to an effective vaccine which if disseminated to every household can eliminate this disease from the grassroot level. Thus, strengthening awareness programs in schools, particularly emphasizing preventive measures such as protective footwear and prompt medical care after exposure is essential to reduce disease burden and prevent future outbreaks. School-based Health Education Programs should be conducted like sessions for students focusing on transmission, risk factors and preventive strategies.

Awareness regarding leptospirosis was found similar between both male and female students, indicating that gender did not influence the level of awareness in this study.

Most of the students learnt about this disease via social media and preferred school as the mode of education to acquire more information.

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