

# A Study to Assess the Level of Knowledge on Prevention of Leptospirosis among Schoolchildren in Selected School at Puducherry with a View to Develop Information Module

Umamaheswari Ramesh<sup>1</sup>, Kandasamy Renuka<sup>2</sup>

## ABSTRACT

**Background:** Leptospirosis is one of the zoonotic diseases that has a worldwide distribution and is transmitted without any intermediary vertebrate or invertebrate or inanimate vectors directly to humans. It is an infectious disease caused by rats and skunks, opossums, raccoons, foxes, and other vermin spread by a specific form of bacteria called spirochete. Schoolchildren emerge as innovative individuals who plan for their potential position in society. Schoolchildren should have adequate knowledge about leptospirosis for early prevention. The purpose of the study was to assess the level of knowledge on prevention of leptospirosis among schoolchildren in selected school at Puducherry with a view to develop an information module.

**Aims and objectives:** To assess the level of knowledge on prevention of leptospirosis among schoolchildren and to find out the association between the level of knowledge on prevention of leptospirosis among schoolchildren with selected demographic variables.

**Materials and methods:** For this study, a descriptive research design was used. By a simple random sampling procedure, 60 samples of schoolchildren were chosen. The data were collected through a formal information questionnaire on the prevention of leptospirosis.

**Results:** Regarding the level of knowledge of schoolchildren on prevention of leptospirosis, it was found that 1 (1.7%) had adequate knowledge, 18 (30%) had moderately adequate knowledge, and 41 (68.3%) had inadequate knowledge regarding prevention of leptospirosis. There was a significant difference in the level of knowledge on prevention of leptospirosis among schoolchildren.

**Conclusion:** The study was conducted on 60 schoolchildren. This study proves that majority of schoolchildren had inadequate knowledge about prevention of leptospirosis. So, this present study helped the schoolchildren to know about preventive measures of leptospirosis through the information module.

**Keywords:** Informational module, Knowledge, Prevention of leptospirosis, Schoolchildren.

*Pondicherry Journal of Nursing* (2020): 10.5005/jp-journals-10084-12170

## INTRODUCTION

Health is a crucial factor in a happy, contented life. Encouraging people to transition to a healthier lifestyle and appropriate coping mechanisms are main priorities of health promotion. In India, most of them are suffering from different illnesses.<sup>1</sup> One of the most common seasonal disorders is leptospirosis.<sup>2</sup> Leptospirosis is one of the zoonotic diseases that is transmitted globally and spreads directly to human without any intermediary vertebrate or invertebrate or inanimate vectors.<sup>3</sup>

It is an infectious disease caused by rats as well as skunks, opossums, raccoons, foxes, and other vermin spread by a particular type of bacteria called spirochete.<sup>4</sup> This happens internationally but most frequently acquired in the tropics. In urban and rural areas, leptospirosis may occur.<sup>5</sup> In urban areas of developing countries, the environment is contaminated due to numerous factors such as overcrowded slums, inadequate human and animal drainage, and sanitation facilities. Presence of wild dogs, goats, pigs, domestic rats, robbers, bad slaughterhouse conditions, and people walking bare foot leads to the spread of the slaughterhouses.<sup>6</sup> In rural areas, high-risk groups are jobs in rice fields, cane fields, and other agricultural crops and animal husbandry personnel. In addition, workers in sewer mines and military personnel are also at risk.<sup>7</sup> It is transmitted by reservoir when contact with contaminated water or urine, fluid or tissue touch with contaminated animals. The incubation period is normally 10 days and ranges from 4 to 20 days. Symptoms of leptospirosis typically grow unexpectedly

<sup>1</sup>Department of Obstetrics and Gynecological Nursing, Kasturba Gandhi Nursing College, Puducherry, India

<sup>2</sup>Department of Medical Surgical Nursing, Kasturba Gandhi Nursing College, Puducherry, India

**Corresponding Author:** Umamaheswari Ramesh, Department of Obstetrics and Gynecological Nursing, Kasturba Gandhi Nursing College, Puducherry, India, Phone: +91 9965228299, e-mail: umamaheswarir@kgnc.ac.in

**How to cite this article:** Ramesh U, Renuka K. A Study to Assess the Level of Knowledge on Prevention of Leptospirosis among Schoolchildren in Selected School at Puducherry with a View to Develop Information Module. *Pon J Nurs* 2020;13(4):75–77.

**Source of support:** Nil

**Conflict of interest:** None

from 7 to 14 days after exposure to leptospir bacteria. About 90% of leptospirosis infection causes mild symptoms.<sup>8</sup> Fever is often the first symptoms. The fever may cause a temperature up to 40°C (104°F).<sup>9</sup>

The management of leptospirosis is treated based on symptoms of the diseases. Mild leptospirosis is treated by antibiotics like tetracycline or doxycycline, ampicillin, or amoxicillin. Severe leptospirosis is treated by antibiotic like penicillin G, which has long been the drug of choice.<sup>10</sup> It should be administered intravenously at 6 million units daily for 10–14 days. Penicillin G doses 6 million

units daily IV (10–14 days).<sup>11</sup> The median global occurrence of endemic human leptospirosis excluding epidemic cases is 5 per 100,000.

In some places, however, as high as 975 cases per 100,000 have been recorded. The mean global incidence of epidemiological leptospirosis recorded in outbreaks is 14 per 100,000.<sup>12</sup> Most outbreaks of leptospirosis have been recorded in coastal regions of the state of India such as Gujarat, Maharashtra, West Bengal, Odisha, Kerala, Tamil Nadu, Karnataka, and Andaman Islands.<sup>13</sup> Significant risk groups listed include agricultural workers, veterinarians, fishers, animal farm workers, poultry, butchers, lab employees, miners, and others engaged in entertainment and leisure activities.<sup>14</sup>

The prevalence rate reported for leptospirosis is 38.1% from Calicut, 52.7% from the Andaman and Nicobar Islands, and 32.9% from Chennai. Gujarat, Kerala, and Maharashtra have reported more than 100 deaths per year from leptospirosis.<sup>15</sup>

To decrease the morbidity and mortality of leptospirosis, appropriate management guidelines should be enforced.<sup>16–18</sup> Schoolers are developing as innovative people who are planning for their potential position in the society.<sup>19</sup> Schoolchildren should have adequate knowledge about leptospirosis for early prevention.<sup>20</sup> So, in this study we are going to assess the knowledge on prevention of leptospirosis among schoolchildren in selected school at Puducherry with a view to develop information module.

### STATEMENT PROBLEM

A study to assess the level of knowledge on prevention of leptospirosis among schoolchildren in selected school at Puducherry with a view to develop information module.

### AIMS AND OBJECTIVES

- To assess the level of knowledge on prevention of leptospirosis among schoolchildren.
- To find out the association between the level of knowledge on prevention of leptospirosis among schoolchildren with selected demographic variables.

### HYPOTHESES

H1—There is a significant difference in the level of knowledge on prevention of leptospirosis among schoolchildren.

H2—There is a significant association between the level of knowledge on prevention of leptospirosis among schoolchildren with selected demographic variable.

### MATERIALS AND METHODS

For this study, a descriptive research design was used. The population of the study was schoolchildren in Dr Ambedkar Government Higher Secondary school, Kirumambakkam, Puducherry. Total 60 samples of schoolchildren were selected by a simple random sampling method. The data were collected by a structured knowledge questionnaire. The questionnaire consists of demographic variables and questions of multiple choice relating to leptospirosis prevention knowledge. Both descriptive statistics (mean, frequency percentage, and standard deviation) and inferential statistics (paired “t” and Chi-square test) were used to analyze the results.

### MAJOR FINDINGS

Figure 1 shows the level of knowledge of schoolchildren about the prevention of leptospirosis; it indicates that 1 (1.7%) had adequate knowledge, 18 (30%) had moderately adequate knowledge, and 41 (68.3%) had inadequate knowledge of leptospirosis prevention. There was a substantial difference in the level of knowledge about the prevention of leptospirosis among schoolchildren. The stated hypothesis (H1) was therefore accepted.

Table 1 shows that mean and standard deviation of the level of knowledge relating prevention of leptospirosis are 10.7 and 3.557, respectively.

The association between the level of knowledge on prevention of leptospirosis with selected demographic variables of the school-children. By using the Chi-square test, it was evidenced that there was no significant association between age, gender, religion, educational status, monthly income of the family, living area, type of family, structure of house, food habit, water supply, latrine supply, awareness about the leptospirosis, and idea about leptospirosis among the schoolchildren at *p* value <0.05 level. There is no significant difference between the association of level of knowledge on prevention of leptospirosis with selected demographic variables of the schoolchildren. The mentioned hypothesis (H2) was therefore denied.

### CONCLUSION

The study was conducted on 60 schoolchildren. This study proves that majority of schoolchildren had inadequate knowledge about prevention of leptospirosis. So, this present study helped the schoolchildren to know about causes, signs and symptoms,

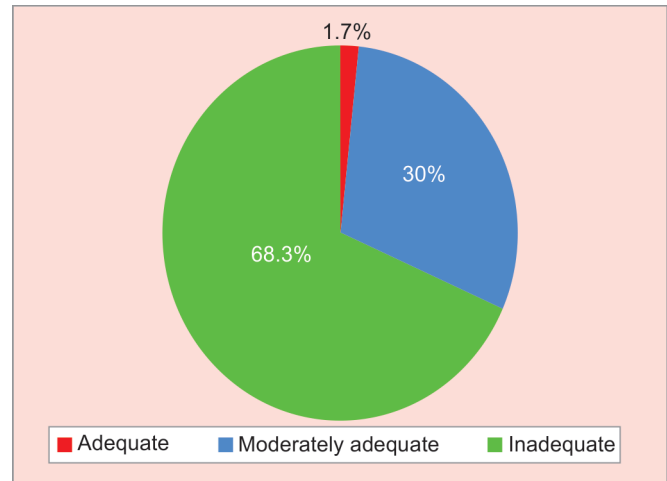


Fig. 1: Distribution of level of knowledge on prevention of leptospirosis among schoolchildren

Table 1: Mean and standard deviation of the level of knowledge regarding prevention of leptospirosis

| S. no. | Level of knowledge on prevention of leptospirosis | Mean | Standard deviation |
|--------|---|------|--------------------|
| 1      | Adequate (19–25)                                  | 10.7 | 3.557              |
| 2      | Moderately adequate (13–18)                       |      |                    |
| 3      | Inadequate (<13)                                  |      |                    |

laboratory diagnosis, management and control, and preventive measures of leptospirosis through the information module. So, health education for schoolchildren regarding prevention of leptospirosis emphasizes for the early prevention of leptospirosis.

## REFERENCES

1. Basavanhappa BT. Textbook of Community Health Nursing. New Delhi: Jaypee Brothers Publication; 2008. pp. 391–392.
2. Park K. Textbook of Prevention and Social Medicine. 21st ed., M/S Banarsides Bhanot Publishers; 2017. 309–310.
3. Leptospirosis Worldwide 1999. Weekly Epidemiol Rec 1999;74: 237–242.
4. Nordqvist C. Leptospirosis - what you need to you. Medical News Today 2018;9:237.
5. Faine S. Guidelines for the control of leptospirosis. WHO Offsets Publication? 1982;67:1–171.
6. Shekatkar SB, Harish BN, Menezes GA, et al. Clinical and serological evaluation of leptospirosis in Puducherry, India. J Infect Develop Count 2010;4(3):139–143. DOI: 10.3855/jidc.384.
7. Vimala G, Josephine Rani AM, Raja Gopal V. Leptospirosis in Vellore: A clinical and serological study. Int J Microbiol 2014;5:643940. DOI: 10.1155/2014/643940.
8. <https://www.wikipedia.com>.
9. Neha Pathak MD. Leptospirosis. WebMD Medical Reference. 2017.
10. Naveen G. Leptospirosis - an overview. Nurs J India 2005. 53.
11. Watt G, Linda Tuazon M, Santiago E, Padre L, Calubaquib C, Ranoa C, et al. Placebo controlled trial of intravenous penicillin for severe and late leptospirosis. Lancet 1988;1(8583):433–453. DOI: 10.1016/S0140-6736(88)91230-5.
12. Murugan S. Atypical presentation of multiorgan failure leptospirosis (Weil's diseases) without fever. Indian J Clin Pract 2014;24:948–950.
13. Himani D, Suman MK, Mane BG. Epidemiology of leptospirosis: an Indian prospective. J Food Borne Zoonot Disea 2013;1(1):6–13.
14. Human Leptospirosis: Guidance for Diagnosis, Surveillance and Control. WHO Library Cataloguing-In-Publication Data. World Health Organization. 2003.
15. Shivakumar S. Leptospirosis-Indian Data. Research Gate Publication; 2013.
16. Shivakumar S. Leptospirosis—current scenario in India. API Medicine Update 2008;18:799–809.
17. Shanthi B, Kannan I, Premavathi RK, Shantha S. Study on incidence of leptospirosis by serodiagnosis in rural population. Int J Pharmaceut Clin Res 2016;8(3):189–192.
18. Sharma SK. Textbook of Nursing Research and Bio-Statistics. 1st ed., New Delhi: Reed Elsevier India Private Limited; 2005. pp. 102–124.
19. Polit. Principles & Methods of Nursing Research. 6th ed., Philadelphia: Lippincott Company; 1996.
20. Basavanhappa BT. Textbook of Nursing Research. 2nd ed., New Delhi: Jaypee Brothers Publication; 2007.