



KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING LEPTOSPIROSIS PREVENTION AMONG THE NON-PARAMEDICAL STUDENTS

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ABSTRACT

Leptospira, a genus of pathogenic spirochetes, are the source of the infectious disease leptospirosis, which affects both humans and animals. It is connected to environments with inadequate sanitation and agricultural jobs that need contact with animals or water and is regarded as the most prevalent zoonosis in the world. Adventure travel and "mud run" sports or events that expose competitors to fresh water or soil are putting people at risk more and more.

AIM: To assess the level of knowledge, attitude, and practice regarding leptospirosis prevention among the non-paramedical students.

METHODS AND MATERIALS: A descriptive research design was conducted. 60 samples were selected by convenient sampling technique. Self-structured questionnaires were used to collect data from the participants.

RESULTS: The present study suggested that 26 (43.3%) had inadequate, 19 (31.7%) had moderate and 15 (25%) had adequate knowledge, 25 (41.7%) had adequate, 16 (26.7%) had moderate, 19 (31.7%) had inadequate attitude, 22 (36.7%) had inadequate, 13 (21.7%) had moderate, 25 (41.7%) had adequate practice. The occupation had shown statistically significant association with level of knowledge regarding leptospirosis prevention at $p < 0.05$. This study showed that the majority of respondents had low levels of knowledge, unfavorable attitudes, and poor practices regarding leptospirosis prevention.

CONCLUSION: As a result, leptospirosis prevention knowledge, attitudes, and practices were generally substandard. They might be more likely to get leptospirosis as a result of this discovery.

KEY WORDS: Attitude, Knowledge, Leptospirosis, Non-Paramedical, Practice, Prevention.

INTRODUCTION

"In examining disease, we gain wisdom about anatomy and physiology and biology. In examining the person with disease, we gain wisdom about life."

Leptospirosis is a neglected zoonotic infectious disease caused by spirochetes of genus *Leptospira*, which can be transmitted directly or indirectly through human-to-human transmission is not common^[1]. Being sporadic in nature, it has been reported as the outbreak from developing countries such as Nicaragua, India, Brazil, Thailand, Sri Lanka and from urban areas of developed countries such as USA, France, Japan, Ireland and Germany^[2,3]. Studies have identified that peak incidence of disease occurred during rainy seasons in tropical regions and late summer to early fall in temperate regions, but most of the time outbreak followed periods of excess rainfall^[4]. Besides mentioned climatic factors certain occupation or professions such as farming, butchering, veterinarians and rodent control put individuals at risk for disease. It is estimated that presently one billion of the world's population live in the slum area, which is going to be doubled by 2025 can have a significant impact on the Leptospirosis disease burden^[5,6].

In South East Asia, 447 million people are engaged with agriculture in rural areas of 11 different countries^[7]. Most of the countries sharing similar environmental, cultural and demographic characteristics have reported well number of cases in past few



years, which is again anecdotal just like a tip of the iceberg^[8]. India lacks data on national incidence of Leptospirosis, even though the disease contributes for 12.7% of acute febrile illness^[9].

The most common entry point is through cuts or abrasions in the skin, or through the conjunctiva; infection can also spread through intact skin after prolonged submersion in water, although this usually happens when abrasions are more likely to happen, making it harder to prove. Leptospirosis epidemics have been caused by point water supply pollution, which has been proven to be a source of water-borne transmission^[10]. The mucous membranes of the respiratory system may get infected as a result of inhaling water or aerosols. Animal bites can occasionally result in infection. Rarely has direct transmission between people been proven^[11,12]. Leptospire have, however, been found excreted in human urine months after regaining health. It is believed that *Leptospira* survival after excretion is restricted by the low pH of human urine. There have been reports of sexual activity causing transmission during recovering^[13,18].

The objectives of the present study were

- ❖ To assess level of knowledge, attitude and practice of leptospirosis prevention among the non-paramedical students
- ❖ To find out the association between the level knowledge of leptospirosis prevention among the non-paramedical students with their selected demographic variables.

Material and Methods

The quantitative approach with non-experimental descriptive research design was adopted for the present study. After obtaining an ethical clearance from the institutional ethical committee (IEC) of Saveetha Institute of Medical and Technical Sciences and a formal permission from the selected non paramedical college, the study was conducted. A total of 60 samples who are presently studying in the selected non paramedical college (n=60) and who met the inclusion criteria were recruited as study participants by using Convenience sampling technique. The inclusion criteria for the study, participants, who are available during the study period and who are cooperative and who understand both Tamil and English. During the initial interview, the purpose of the study was explained by the investigator to each of the study participants and a written informed consent was obtained from them. The demographic data and the existing level of knowledge, attitude and practice regarding leptospirosis prevention was exploited by using a self-structured questionnaire and the collected data were tabulated and analyzed by using descriptive and inferential statistics.

RESULTS AND DISCUSSION

SECTION A: DESCRIPTION OF DEMOGRAPHIC DATA OF THE STUDY POPULATION

With regards to age 20 (33.3 %) were between the age group of 13-15 years, with regards to religion 26 (43.3 %) were Hindu, with regards to bread winner 23 (42.7%) were husband, with regards to income 36 (60%) were earning 10000-25000 per month, with regards to family 26 (43.3%) were nuclear family, with regards to work 27(45) were clerical worker and with regards to education 25 (41.6%) were secondary education.

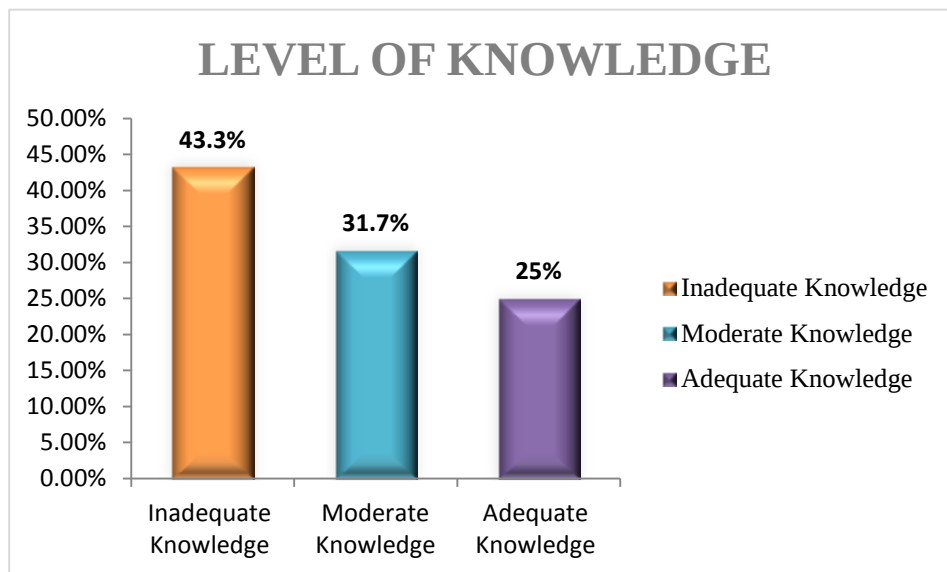
SECTION B: ASSESSMENT OF LEVEL OF KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING LEPTOSPIROSIS PREVENTION AMONG THE NON-PARA MEDICAL STUDENTS

Assessment of Level of Knowledge among the Non-Paramedical Students

The current study identified among our study participants are 26(43.3%) had inadequate knowledge, 19(31.7%) had moderate knowledge and 15(25%) had adequate knowledge regarding prevention of leptospirosis as depicted in (Table 1 and Fig 1).

TABLE 1: Frequency and Percentage Distribution of Level of Knowledge among the Non-Paramedical Students
N=60

Level of Knowledge	Frequency	Percentage
Inadequate (1-5)	26	43.3%
Moderate (5-15)	19	31.7%
Adequate (15-20)	15	25%



A descriptive study was conducted by **Ramesh U, Renuka K. (2020)** aiming to assess the level of knowledge on prevention of leptospirosis among schoolchildren. 60 samples were selected by simple random sampling, the data were collected through a formal information questionnaire on the prevention of leptospirosis. In terms of schoolchildren's understanding of leptospirosis prevention, it was shown that 1 (1.7%) had adequate knowledge, 18 (30%) had fairly adequate information, and 41 (68.3%) had poor knowledge^[14].

A cross-sectional study by **Kipper BH, Stein CE, Castro TH, et al. (2020)** included 270 interviewees out of a total of 5,336 residences. 30 streets out of a total of 230 streets were studied, with a sampling error of 5% and a confidence level of 95%. Two questionnaires were used to collect the data at random: one was distributed to the local community to assess their knowledge of the disease, and the other was distributed to every street in the neighborhood to confirm the neighborhood's risk factors. Regarding knowledge about the disease, 93.33% of respondents stated that they had knowledge about the disease, and 98.89% of the interviewees affirmed that they had never leptospirosis yet and 18.89% knew people affected by the disease^[15].

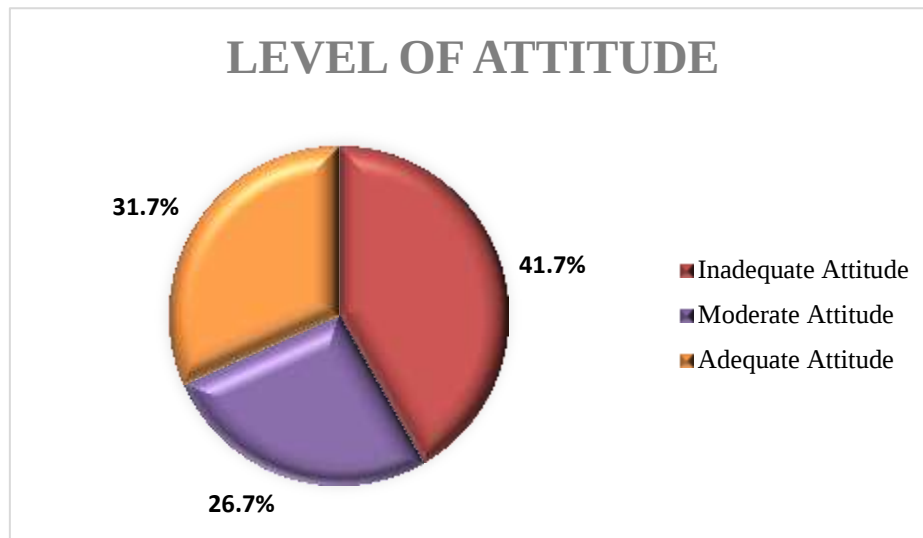
Hence, the level of leptospirosis awareness among students indicated the urgent need for further health education, especially for people with low levels of education.

Assessment of Level of Attitude among the Non-Paramedical Students

The current study identified among our study participants are 25 (41.7%) had inadequate attitude, 16 (26.7%) had moderate attitude and 19 (31.7%) had adequate attitude regarding prevention of leptospirosis as debited in (Table 2 and Fig 2).

TABLE 2: Frequency and Percentage Distribution of Level of Attitude among the Non-Paramedical Students
N=60

Level of Attitude	Frequency	Percentage
Inadequate (1-5)	25	41.7%
Moderate (5-15)	16	26.7%
Adequate (15-20)	19	31.7%

**Figure 2: Level of Attitude among the Non-Paramedical Students**

Azfar ZM, Nazri SMetc. (2018) conducted a cross sectional study involving 321 town serviceworkers namely garbage collector, town cleaner, landscaper and lorry driver or mechanic. Questions on attitude are designed to be answered using a Likert scale. In the present study, it was found that there was a slightly higher proportion of those with satisfactory (about 52%) than unsatisfactory attitude. The important area that was identified as considering higher risk attitude while respondents were not at work were “wearing any type of shoes” and “walking in flood” as only 35.8% and 68.2% gave favorable answers respectively. For attitude at workplace, it was found that high risk attitude during working like drinking habit and PPE usage were quite alarming^[16].

Bakar SM and Rahman HA (2018) conducted a cross-sectional study with 170 students from veterinary medicine (22 students), nursing (57 students), environmental and occupational health (ENVOCH) (57 students), and other fields (97 students). The study's instrument was a questionnaire. The majority of responders from ENVOCH, nursing, and veterinary medicine—42 (73.7%), 18 (81.8%), and 40 (66.7%)—had a moderate attitude regarding leptospirosis. In contrast, 10 (16.7%) students studying veterinary medicine, 3 (13.6%) nursing students, and 5 (8.8%) ENVOCH students showed high attitudes^[17].

Hence, a large proportion of respondents had shown a negative attitude. Positive attitude towards the exposure to the urine or excretion of infected animals, and also water or soil that being contaminated with secretion of the infected animals should practice in waste handling and waste management.

Assessment of Level of Practice among the Non-Paramedical Students

The current study identified among our study participants 25 (41.7%) had inadequate practice, 13 (21.7%) had moderate practice and 22 (36.7%) had adequate practice regarding prevention of leptospirosis as debited in (Table 3 and Fig 3).

TABLE 3: Frequency and Percentage Distribution of Level of Practice among the Non-Paramedical
N=60

Level of Practice	Frequency	Percentage
Inadequate (1-5)	25	41.7%
Moderate (5-15)	13	21.7%
Adequate (15-20)	22	36.7%

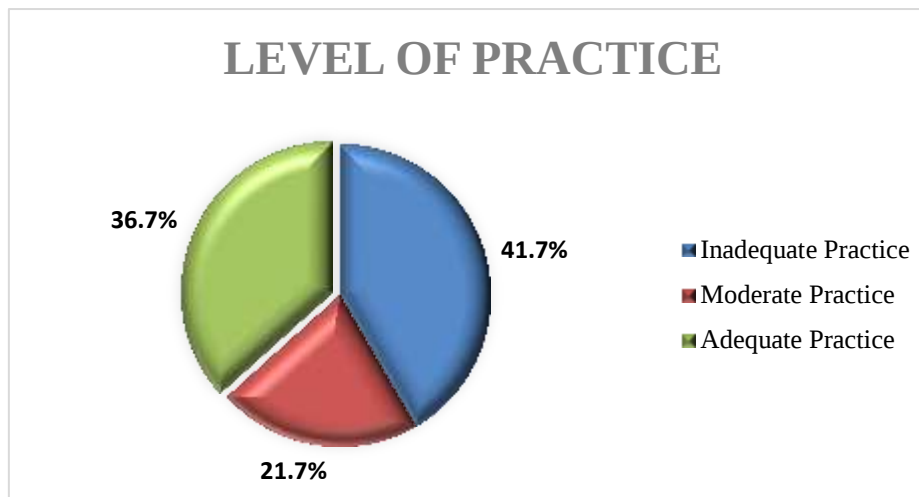


Figure:3 Level of Practice among the Non-Paramedical Students

Bakar SM and Rahman HA (2018) conducted a cross-sectional study with 170 final year students from veterinary medicine (22 students), nursing (57 students), environmental and occupational health (ENVOCH) (57 students), and other fields (97 students). Purposive sampling technique employed and self-structured questionnaire was used. A mean score of 64.32 and standard deviation of 7.70 were used to classify the subjects into three levels (15) namely high level (more than 72), moderate level (57 to 72) and low level (less than 57). Majority of the respondents for all three programmes had moderate practice which were 41 (71.9%), 17 (77.3%) and 44 (73.3%)^[17].

In order to collect 315 respondents, **Abdullah NM and Mohammad WM (2019)** used a cross-sectional study, multistage cluster sampling, and simple random sampling. There are 17 statements in the practice items that represent acceptable and unsatisfactory preventative practices among responders. Practice's average (SD) percentage score was 64.31. (12.19). The bulk of responders (81.3%) generally had poor preventive behavior. In overall, majority of respondents had unacceptable preventive practice (81.3%). Nevertheless, good practice was observed in several items including avoiding to eat or drink while handling waste (93.0%), choosing a clean restaurant (92.4%), and keeping foods in a covered container (91.1%) [19].

The majority of respondents also generally had poor practices for preventing leptospirosis. However, there were still some instances of good behavior when a small majority of respondents avoided eating or drinking while handling garbage.

As a result, leptospirosis prevention knowledge, attitudes, and practices were generally substandard. They might be more likely to get leptospirosis as a result of this discovery. In order to create a focused and well-directed intervention programme on leptospirosis infection, policy makers will need to identify weak areas in their knowledge, attitude, and practice.

SECTION C: ASSOCIATION OF LEVEL OF KNOWLEDGE WITH SELECTED DEMOGRAPHIC VARIABLES OF THE STUDY POPULATION.

The result shows demographic variables such as occupation has significant association with level of knowledge, attitude and practice of leptospirosis at level of $p < 0.05$. Others variables had no association with level of knowledge of leptospirosis prevention.

Bakar SM and Rahman HA (2018) conducted a cross-sectional study with 170 final year students from veterinary medicine (22 students), nursing (57 students), environmental and occupational health (ENVOCH) (57 students), and other fields (97 students). Purposive sampling technique employed and self-structured questionnaire was used to collect data regarding knowledge, attitude and practice about leptospirosis. The study results show that there was a significant association between race and knowledge, also gender and attitude with $p < 0.05$, ($p = 0.008$) and ($p = 0.001$) respectively. Furthermore, there was also an association between attitude and practice ($p < 0.05$). Meanwhile, there was a significant difference on the knowledge between students of ENVOCH with Veterinary Medicine and Nursing with Veterinary Medicine ($p < 0.05$)^[17].

Margaret LaFerla Jenni (2019) conducted cross-sectional study aiming to determine awareness and general attitudes about canine leptospirosis and to identify gaps in veterinarians' knowledge in treatment and prevention among 1058 Arizona veterinary medical association members. A 40-questionnaire, self-administered online survey to 1058 Arizona Veterinary Medical Association members, the results using Pearson's Chi-squared or Fisher's exact test; a P-value < 0.05 was considered statistically significant^[20].



LIMITATIONS

The study has some limitations. The researcher could not generalize the study findings as the sample size is relatively small and limited to 60 clients. Only non-paramedical students were included into the study. Another limitation is selected urban area used for data collection. Psychological well-being among clients can differ based on their cultural differences and background. The current study has only few supportive studies in Indian Population due to paucity of literature.

CONCLUSION

In conclusion, this study showed that the majority of respondents had low levels of knowledge, unfavorable attitudes, and poor practices regarding leptospirosis prevention. However, a significant portion of them still had little understanding of the method of transmission and available defenses. Our findings imply that leptospirosis education initiatives should be done specifically for high-risk populations to reach them and raise their knowledge of the disease. If effective steps are not made to address this issue, the number of cases and fatalities will keep rising. The disease's prevention strategies and therapies should be improved, according to public health professionals, researchers, and policymakers.

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