EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND ATTITUDE REGARDING PREVENTION OF LEPTOSPIROSIS AMONG AGRICULTURAL WORKERS RESIDING IN SANNIYASIKUPPAM VILLAGE AT PUDUCHERRY

DR.R. Danasu1, Mrs. S. Manimekalai2, G. Indhumathy3

1Principal, Sri Manakula Vinayagar Nursing College, Puducherry- 605 107, India

2HOD, Department of Community Health Nursing, Sri Manakula Vinayagar Nursing College, Puducherry- 605 107, India

3II Year M.Sc., (Nursing), Department of Community Health Nursing, Sri Manakula Vinayagar Nursing College, Puducherry, India

Corresponding Author: Dr.R.Danasu

ABSTRACT

Leptospirosis is a zoonotic disease caused by pathogenic Leptospira bacteria that are excreted in the urine of infected animals, such as rodents, livestock, and domestic pets. It can be acquired by direct contact with an infected animal or by indirect contact with an environment contaminated with the urine of infected animals.

This might occur through ingestion of contaminated food or water, through mucosal surfaces, or skin contact, particularly if there are breaks in the skin. Leptospirosis’ recent estimated worldwide incidence is approximately 1.03 million cases with 58900 associated deaths. In the Americans, annual morbidity rates range from a low of 3.9 per 100,000 population in southern Latin America to a high of 50.7 in the Caribbean in the year 2015. In Tamil Nadu, 2765 cases were reported from Chennai in 2006 from various hospitals. In the recent past, acute renal failure due to leptospirosis with malaria occurred as seroprevalence of 32.9%. Karnataka reported 152 cases with 93 deaths in 2000 - 2004. At present, Andaman Islands has probably the highest incidence rates of leptospirosis in India with a figure ranging from 50 - 65 cases/100,000 per year. The study was conducted for six weeks in that pre test was conducted and structured teaching programme was given on same day of pre test and on seventh day post test was conducted to same agricultural workers. 100 samples were selected using convenient sampling techniques. pre-test was conducted by using tools prepared by the investigator. Followed by that, the Structured Teaching Programme regarding prevention of Leptospirosis among agricultural workers was administered by using Flash Card and a post-test was conducted on the seventh day after the STP.

The finding reveals that out of 100 agricultural workers in Sanniyasikuppam village at Puducherry, in the pre-test (76) 76% of them were having inadequate knowledge, (24) 24% of them were having moderate knowledge and none were having adequate knowledge regarding the prevention of Leptospirosis. And (64) 64% of agricultural workers were having
an unfavorable attitude, (3) 3% were having a favorable attitude, and (33) 33% of them were having an unfavorable attitude regarding the prevention of Leptospirosis.

In post-test (67) 67% of agricultural workers have adequate knowledge and (33) 33% of them had moderate knowledge and none were having inadequate knowledge regarding the prevention of Leptospirosis. And (3) 3% of agricultural workers were having an unfavorable attitude, (51) 51% of them were having a favorable attitude, and (41) 41% of them were having an unfavorable attitude regarding the prevention of leptospirosis.

It also shows that there is a significant association between the knowledge and attitude regarding the prevention of leptospirosis among agricultural workers with their selected demographic variables like age.

INTRODUCTION

Leptospirosis is a zoonotic disease caused by pathogenic Leptospira bacteria that are excreted in the urine of infected animals, such as rodents, livestock, and domestic pets. It can be acquired by direct contact with an infected animal or by indirect contact with an environment contaminated with the urine of infected animals. This might occur through ingestion of contaminated food or water, through mucosal surfaces, or skin contact, particularly if there are breaks in the skin. There is a wide range of animal hosts including rats, other rodents, livestock, and dogs.

According to WHO in the year 2019, 920 leptospirosis cases were reported in Indonesia with 122 deaths caused by the disease. The reported case number is a severe underestimate of leptospirosis occurrence in Indonesia given that the annual morbidity of leptospirosis in the population was recently estimated as 39.2 per 100,000 people. In India, the prevalence of agricultural lands and farmers is high, so they are also at the risk of exposing to Leptospirosis. In this regard, the investigator is interested to do the present study.

Leptospirosis is a zoonotic disease with a worldwide distribution. There is a paucity of available data about the prevalence of this disease in Pondicherry. The aim was to investigate the seropositivity rate of leptospirosis in suspected cases and also to identify the predominant serogroups present by performing a Microscopic Agglutination Test (MAT). The other aim of this study was to compare the results of a commercially available IgM ELISA with that of MAT.

A total of 110 blood samples from patients suspected of leptospirosis were sent for diagnosis. These samples were subjected to IgM ELISA and the microscopic agglutination test (MAT). MAT was done using a panel of 12 Leptospira serovars. MAT analysis of the 110 samples showed 40 (36%) to be positive. Antibodies were predominantly seen against serogroup Leptospira Icterohemorrhagiae (27%), followed by Pomona (17%), and Pyrogens (12%). IgM ELISA done on this sample showed positivity of 37% compared to MAT. This
study reveals that the MAT test can be standardized in a diagnostic laboratory and used in conjunction with an IgM ELISA.

Leptospirosis is more common among agricultural workers and it is a serious public health problem. Hence researcher selected this study. This Structured educational Programme draws the attention of Agricultural workers very easily and creates the awareness regarding prevention of Leptospirosis. Through this Programme, we can prevent Leptospirosis.

OBJECTIVES:

- To assess the level of Knowledge and Attitude regarding the prevention of Leptospirosis among Agricultural workers.
- To evaluate the effectiveness of Structured Teaching Programme on prevention of Leptospirosis among Agricultural workers.
- To correlate the relationship between the level of Knowledge and Attitude on the prevention of Leptospirosis among agricultural workers.
- To associate the level of Knowledge and Attitude on the prevention of Leptospirosis among agricultural workers with their selected demographic variable.

HYPOTHESIS:

- $H_1$: There is a significant difference in the level of Knowledge and Attitude before and after the Structured Teaching Programme on the prevention of Leptospirosis among agricultural workers.
- $H_2$: There is a significant association in the level of Knowledge and Attitude on the prevention of leptospirosis among agricultural workers with their selected demographic variables.
- $H_3$: There is a significant correlation between the level of knowledge and attitude on the prevention of leptospirosis among agricultural workers.

MATERIALS AND METHODS

In this study, pre-experimental study design was used to assess the knowledge and attitude of agricultural workers regarding prevention of leptospirosis

Based on the sample, total of 100 agricultural workers were selected by using convenient sampling techniques. Ethical consent was obtained following approval by the Institutional Ethical Committee of Sri Manakula Vinayagar Medical College and Hospital, Puducherry.

Data Collection Tools:

Section- A  - Demographic Variables consists of age, sex, religion, type of family, educational background, marital status, monthly income, sources of information, having pet animals, type of agriculture works, type of house, duration of exposure of agricultural works in hours/day, common injury site during agriculture workers, type of livestock's, any chronic
unhealed wound, type of pesticide used to control rodent, any history of diabetes mellitus, type of personal protective equipment used.

**Section – B**- Structured interview questionnaire to assess the knowledge level on prevention of Leptospirosis. It consists of 30 questionnaires it carries correct answer for 1 mark and wrong answer for 0 marks. The maximum score is 30 and the minimum score is 0.

**Section-C** - A five-point Likert scale to assess the attitude on prevention of Leptospirosis. It consists of 14 questionnaires with that 7 positive questions and 7 negative questions. The positive question should be scored in strongly disagree for 1, disagree for 2, neither agree nor disagree for 3, agree for 4, strongly agree for 5 and the negative question should score in strongly disagree for 5, disagree for 4, neither agree nor disagree for 3, agree for 2, strongly agree for 1. The maximum score is 70 and the minimum score is 14.

**Data collection Procedure:**

Formal permission and IEC is obtained from higher official and panchayat thalaivar. 100 Samples were selected based on inclusion criteria through convenient sampling techniques. The researcher introduced herself and explained about the purpose of the study to Agricultural workers and oral consent was obtained. On the first day, pre-test was done on knowledge and attitude by using Self Structured questionnaire and five-point Likert scale. After pretest, on the same day Structured teaching programme was given. On the same day, followed by pre-test, Structured Teaching Programme was provided to the study participants regarding prevention of leptospirosis. On the day 7, post-test was done on knowledge and attitude by using Self Structured questionnaire and five-point likert scale respectively. Data analysis and result.

**RESULTS AND DISCUSSION**

Frequency and percentage-wise distribution on level of knowledge regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village. (N=100)

<table>
<thead>
<tr>
<th>SCORING INTERPRETATION</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Inadequate</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Moderate</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Adequate</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The overall knowledge level of agricultural workers regarding the prevention of leptospirosis, before and after conducting a structured teaching Programme. Among agricultural workers 76 (76%) having an inadequate level of knowledge, 24 (24%) were
having moderate knowledge and none of them have adequate knowledge before the structured teaching Programme. And in after conducting the structured teaching Programme 67 (67%) were having adequate knowledge and 33 (33%) of having a moderate level of knowledge and none of them were having inadequate knowledge. It is a very important point here that none had high knowledge before giving the structured teaching Programme and improved the level of an average knowledge after structured teaching Programme. This indicates the effectiveness of a structured teaching Programme.
Figure 4: Percentage-wise distribution on level of knowledge regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village.

(requency and percentage-wise distribution of level of attitude regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village.

(N=100)

<table>
<thead>
<tr>
<th>SCORING INTERPRETATION</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Unfavourable</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>Favourable</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Most Favourable</td>
<td>33</td>
<td>33</td>
</tr>
</tbody>
</table>

The overall attitude level of agricultural workers regarding prevention of leptospirosis, before and after structured teaching Programme. Among agricultural workers were 64(964%) were having unfavorable attitudes 3 (3%) were having the favorable attitude and 33 (33%) were having the most favorable attitude. And in post-test attitude 3 (3%) were having the unfavorable attitude, 51 (51%) were having a favorable attitude and 46 (46%) were having the most favorable attitude. It is very important to point here that only a few members are having an unfavorable attitude after a structured teaching Programme. This indicates the effectiveness of a structured teaching Programme.
Figure 5: Percentage-wise distribution of level of attitude regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village.

Mean and standard deviation of regarding level of knowledge regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village (N=100)

<table>
<thead>
<tr>
<th></th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
<th>‘t’ test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>8.25</td>
<td>3.066</td>
<td></td>
</tr>
<tr>
<td>Post-test</td>
<td>28.92</td>
<td>1.701</td>
<td>54.844**</td>
</tr>
</tbody>
</table>

The level of knowledge regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village with mean and standard deviation pre-test and post-test on statistical analysis, it reveals in pre-test mean value is 8.25 and the standard deviation is 3.066 and in post-test, the mean value 28.92 and the standard deviation is 1.701. the overall "t" test is 54.844 and it shows high significance.
Mean and standard deviation on level of attitude regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village.

\[ (N=100) \]

<table>
<thead>
<tr>
<th></th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
<th>‘t’ test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>21.55</td>
<td>5.115</td>
<td></td>
</tr>
<tr>
<td>Post-test</td>
<td>63.31</td>
<td>5.112</td>
<td>27.110**</td>
</tr>
</tbody>
</table>

The level of attitude with mean and standard deviation in pre and post-test regarding the structured teaching Programme on prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village in the range on statistical analysis, it reveals in pre-test the mean value is 41.55 and standard deviation. In the post-test, the mean value is 63.31 and the standard deviation 5.112. the overall "t" test is 27.110 and it shows high significance.

Figure 6: Mean and standard deviation on level of knowledge and attitude regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village
Correlation between the knowledge and attitude regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village.

(N=100)

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Pearson Correlation (r)</th>
<th>1</th>
<th>0.166</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.099</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Pearson Correlation (r)</th>
<th>0.166</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.099</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

The post-test level of knowledge and attitude regarding prevention of leptospirosis among agricultural workers has positively correlated with the value of (0.166).
Association between the selected demographic variables with the post-test level of knowledge regarding prevention of Leptospirosis among Agricultural workers residing in Sanniyasikuppam village. \( (N=100) \)

It is concluded that \( p < 0.05 \). so, there is a significant association between age with a post-test level of knowledge regarding the prevention of leptospirosis among agricultural workers in Sanniyasikuppam village, and other than that no other variables are associated with the post-test level of knowledge.

CONCLUSION:

This implies that on the content of the study investigator has assessed the knowledge and attitude regarding prevention of leptospirosis among agricultural workers the following was drawn the most of the agricultural workers have inadequate knowledge regarding prevention of leptospirosis. Investigators have given the Structured Teaching Programme through this agricultural worker gained knowledge and improve attitude and there is a significant association between the knowledge and attitude regarding prevention of leptospirosis with their selected demographic variables like age.

**BIBLIOGRAPHY**

**Book reference:**


**Internet reference:**

- [https://www.ijcrr.com/abstract.php?article_id=120](https://www.ijcrr.com/abstract.php?article_id=120)
- [https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0008309](https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0008309)

**Journal reference:**