A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND ATTITUDE REGARDING ILL EFFECTS OF PESTICIDES ON HEALTH AMONG SMALL SCALE FARMERS

DR. R. Danasu¹, S. Sakthypriya², A. Sasikala³

¹Principal, Sri Manakula Vinayagar Nursing College, Puducherry-605107, India
²Assistant prof, Department of Community Health Nursing, Sri Manakula Vinayagar Nursing College, Puducherry-605107, India
³PG student in Community Health Nursing, Sri Manakula Vinayagar Nursing College, Puducherry, India

ABSTRACT

Pesticide is any substance used to kill, repel, or control certain forms of plant or animal life that are considered to be pests. Pesticides include herbicides for destroying weeds and other unwanted vegetation, insecticides for controlling a wide variety of insects, fungicides used to prevent the growth of molds and mildew, disinfectants for preventing the spread of bacteria, and compounds used to control mice and rats. There has also been a conscious effort to increase public awareness of the condition and to encourage sufferers to seek medical attention. The study was conducted for six weeks to identify ill effects of pesticide on health among small scale farmers. 60 samples were selected using purposive sampling technique. Knowledge and attitude, a standardized valid scale was used to collect the data regarding ill effects of pesticide on health and the result revealed out of 60 small scale farmers frequency and percentage-wise distribution the level of knowledge pretest as 37 (74%) were having inadequate level, 13 (26%) were having the moderately adequate knowledge and 0 (0%) having the adequate knowledge and level of knowledge in post-test as 32 (64%) of were having the adequate knowledge, 15 (30%) of them having the moderately adequate knowledge, 3 (06%) of them inadequate knowledge. Frequency and percentage-wise distribution the level of attitude pretest as 34 (68%) were having the unfavorable attitude, 16 (32%) were having the favorable attitude and none of them most favorable attitude and level of attitude in post-test as 30 (60%) of where having
the most favorable attitude, 19(38%) of them having the favorable attitude, 01(02%) unfavorable attitude. Thus the study implies that the small scale farmers at risk of developing moderate level of ill effects of pesticide on health.

**Keywords**: Ill effects of pesticide on health, small scale farmers,

### I. INTRODUCTION

Pesticides are one of the vital tools that help farmers grow healthy crops, protecting our food supply against yield losses and damage caused by weeds, disease, and insects. Pesticides are substances to control pests. The term pesticide includes Herbicide, Insecticides Nematicide, Molluscicide, Piscicide, Avicide, Rodenticide, Bactericide, Insect Repellent, Animal Repellent, Antimicrobial, and Fungicide. Crop production products, also known as pesticides, are chemical substances used to control unwanted pests that can harm our food, health, or environment.

Pesticides can cause short-term adverse health effects, called acute effects, as well as chronic adverse effects that can occur months or years after exposure. Examples of acute health effects include stinging eyes, rashes, blisters, blindness, nausea, dizziness, diarrhea, and death. Examples of known chronic effects are cancers, birth defects, reproductive harm, neurological and developmental toxicity, immune toxicity, and disruption of the endocrine system.

The first use of synthetic pesticides was in 1940. Consumption increasing worldwide by 2.26 million tones of active ingredients used in 2001. 25% of the world's production is used in developing countries, where 99% of deaths due to pesticides occur. Insecticides, fungicides, and herbicides are
commonly used for pest control in agriculture. However, insecticides form the highest share in total pesticide use in India. Both total as well as per hectare increase after the year 2009-2010.

In the year 2014-15, pesticide consumption was 0.29 kg/ha, which is roughly 50% higher than use in 2009-10. The recent increase in pesticide use is because of the higher use of herbicides as the cost of manual weed control has risen due to an increase in agricultural wages.

A pesticide is any substance used to kill, repel, or control certain forms of plant or animal life that are considered to be pests. Pesticides include herbicides for destroying weeds and other unwanted vegetation, insecticides for controlling a wide variety of insects, fungicides used to prevent the growth of molds and mildew, disinfectants for preventing the spread of bacteria, and compounds used to control mice and rats. Because of the widespread use of agricultural chemicals in food production, people are exposed to low levels of pesticide residues throughout their diets. Scientists do not yet have a clear understanding of the health effects of these pesticide residues. Results from the Agricultural Health Study, an ongoing study of pesticide exposures in farm families, show that farmers who used agricultural insecticides experienced an increase in headaches, fatigue, insomnia, dizziness, hand tremors, and other neurological symptoms. Evidence suggests that children are particularly susceptible to adverse effects from exposure to pesticides, including neurodevelopmental effects. People may also be exposed to pesticides used in a variety of settings including homes, schools,
hospitals, and workplaces. (Ministry of health, wellness and the environment 2021)

Two centuries ago there were no scientific bases for plant protection activities. Therefore primitive plant protection measures were employed, for example, wheat was soaked in saltwater, use vinegar, ash among others. However, more than 2700 years ago the greeks utilized sulfur as a fungicide while the Chinese in this same period used arsenical compounds as insecticides

**Objectives**

- To assess the level of Knowledge and Attitude regarding ill effects of Pesticides on Health among Small Scale Farmers.
- To evaluate the effectiveness of Structured Teaching Programme regarding ill effects of Pesticides on Health among Small Scale Farmers.
- To correlate the level of Knowledge and Attitude regarding ill effects of Pesticides on Health among Small Scale Farmers.
- To associate the level of Knowledge and Attitude regarding ill effects of Pesticide on Health among Small Scale Farmers with their selected demographic variables

**HYPOTHESIS**

H₁: There is a significant difference before and after administration of the Structured Teaching Programme on the level of knowledge and attitude regarding the ill effects of pesticides on Health among small-scale farmers.
H2: There is a significant correlation between the level of knowledge and attitude regarding the ill effects of pesticides on health among small scale farmers.

H3: There is a significant association in the level of knowledge and attitude of farmers regarding the ill effects of pesticides on health with their selected demographic variables.

II. MATERIALS AND MANAGEMENT

In this study pre experimental study design was used to identify the ill effects of pesticide on health among small scale farmers by using knowledge and attitude scale was used

Based on the sample, total of 60 participants were selected by using purposive sampling technique. Ethical consent was obtained following approval by the institutional Ethics Committee of Sri Manakula Vinayagar Medical College and Hospital, Puducherry.

Data collection tools:

Section-A: Demographic variables consists of demographic characteristics information about the selected background of farmers age, sex, marital status, education, income, type of family, religion, duration of exposure to pesticides, available health resource, source of pesticides.

Section-B: Assessment of knowledge of farmers about health effects of pesticides use and handling techniques (PPE). It consist of structured Questionnaires 20 items, each correct response carries 1 score, and wrong answer carries zero.
SECTION-C: Attitude assessment Scale to assess the tendency of the small scale farmer’s pesticides use. It consists of self-constructed 5 point likert scale use to assess the Attitude assessment Scale to assess the tendency of the small scale farmer’s pesticides use. It contain 5 Positive items with 5 response, the score and response is Strongly agree – 5, Agree - 4, Neutral- 3, Disagree – 2, Strongly disagree – 1. 5 Negative items with 5 response which is reversely scored and response is Strongly

Data collection procedure

The data collection done with the permission to conduct the study was obtained from authorities of the concerned person of V. Manaveli village, Puducherry. 50 small-scale farmers were selected by using purposive sampling techniques and according to the inclusion and exclusion criteria and after introducing and explain the purpose of the study. The tool consists of demographic variables and question variables were administered to respondents data was collected.

II. RESULTS AND DISCUSSION

frequency and percentage wise distribution the level of knowledge pretest as 37 (74%) were having inadequate level, 13(26%) were having the moderately adequate knowledge and 0 (0%) of them having the adequate knowledge and level of knowledge in post –test as 32(64%) of were having the adequate knowledge , 15 (30%) of them having the moderately adequate knowledge , 3(06%)of them inadequate knowledge.
frequency and percentage wise distribution the level of attitude pretest as 34(68%) were having unfavorable attitude, 16 (32%) were having the favorable attitude and none of them most favorable attitude and attitude in post -test 30 (60%) of were having the most favorable attitude , 19(38%)of them having the favorable attitude , 01(02%) unfavorable attitude .
The frequency and percentage wise distribution of demographic variables among small scale farmers show that majority 20 (40%) were in the age group of 41-50 years, 13 (26%) of them belongs to 30-40 years, 13 (26%) of them belongs to 51-60 years, 4(8%) of them belongs to >60 years.

As for as sex ratio concerned under the small scale farmers show that majority 29 (58%) male, and 21 (42%) of them were in the female.

In marital status wise majority of them 38 (76%) were in married, 8(16%) were in widower, and 3 (6%) were in unmarried ,1(2%) were in the separate.
Educational status shows majority of them 26(52%) were in illiterate, 11 (22%) were in primary school, 8 (19%) were in higher secondary school, 5 (10%) in degree.

As per the family monthly income shows majority of 30 (60%) were in Rs. 5000 - 7000, 13(26%) were in 7000-10,000 and 7 (14%) were in above Rs. 2000-5000 and no Rs..>10000

When type of family is taken into consideration the majority of them 44 (88%) were live in nuclear family, 6 (12%) were live in joint family.

Considering the religion wise majority 39 (78%) were belongs to Hindu, 11 (22%) were belongs to Christian and no Muslim.

With regard to utilization of available health resource the majority of them 28 (56%) were government hospital, 12 (24%) were primary health center, 7 (14%) were private hospital and 3 (6%) were self-medication.

Concerned to have any sources of pesticides information regarding ill effect of pesticide on health of them in 25 (50%) has Media and 13 (26%) were getting the information in Advertisement, 12(24%)has Newspaper/ Magazine’s and no information regarding Poster.
Mean and standard deviation of regarding level of knowledge regarding ill effects of pesticide among small scale farmers at V. Manaveli village.

<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>12.91</td>
<td>3.114</td>
<td>17.225**</td>
</tr>
<tr>
<td>Post-test</td>
<td>28.12</td>
<td>1.287</td>
<td></td>
</tr>
</tbody>
</table>

Data shows that level of knowledge pretest value was 12.91 mean, with standard deviation of 3.114 and the posttest mean value is 28.12 with standard deviation 1.287 and the t value is t =17.225.
Mean and standard deviation of regarding level of attitude regarding ill effects of pesticide among small scale farmers at selected village (N=50)

<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>61.020</td>
<td>6.052</td>
<td>44.143**</td>
</tr>
<tr>
<td>Post-test</td>
<td>98.760</td>
<td>1.021</td>
<td></td>
</tr>
</tbody>
</table>

Data shows that level of attitude pre-test value was 61.020 mean, 6.052 standard deviation, and the level of attitude post-test value was 98.760 mean, 1.021 was standard deviation this shown that paired t value is t=44.143.
Mean and standard deviation of regarding level of knowledge & attitude regarding ill effects of pesticide among small scale farmers at selected village

Correlation between the knowledge and attitude regarding ill effects of pesticide among small scale farmers at V. Manaveli village.

<table>
<thead>
<tr>
<th></th>
<th>knowledge</th>
<th>attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation (r)</td>
<td>1</td>
<td>0.914</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.005</td>
</tr>
<tr>
<td>N</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

reveals the correlation between knowledge and attitude regarding ill effects of pesticide among small scale farmers at V. Manaveli village.

With regard to correlation in knowledge and attitude regarding ill effects of pesticide on health in pre-test the knowledge Pearson correlation (r) value is attitude 0.914 in pre-test value.
IV. CONCLUSION:

This implies that on the content of the study investigator has assessed the knowledge and attitude regarding the ill effect of pesticides on health among small scale farmers the following were drawn the most small scale farmers have inadequate knowledge and attitude regarding the ill effect of pesticides on health. Investigators have given the structured teaching programme through this small scale farmers have gained knowledge and improved the attitude and there is a significant association between the knowledge and attitude regarding the ill effect of pesticide on health among small scale farmers with their selected demographic variables like gender, level of education, religion.

REFERENCE

3. Carol. I leadership role and Management Functions in Nursing Theory and Application , New Delhi: sixth edition Lippincott publication 2010
