

## SUMMARY

One of the major problems facing the world today is the environmental pollution. One of the sources of pollution in the area of agriculture is excessive use of pesticides. Despite that pesticide exposure is a major preventable occupational hazard for farmers, large number of farmers in the third world is exposed to increasing amount of pesticides including severely dangerous. Moreover, because of their inherent toxicity and widespread use, pesticides pose a serious threat to public health, particularly to infant and, children. The pesticides triggered a number of environmental and health problems that most Egyptians still somberly remember which may result in poisoning, death, work-related cancer and reproductive impairments.

Pesticide exposure is the most occupational hazards for farmers in developing countries. Most of adverse health effects occur in developing counties, although these countries only account for 25% of worldwide consumption. The main reasons that developing countries have high proportions of adverse health outcome from pesticides are the use of very toxic pesticides that are restricted or banned in the country in which they are working in poor conditions with inadequate protection during storage, handling and application.

The present study aim was to determine the effect of educational health program on self protective measures for farmers using pesticides. The work was directed to answer the hypothesis " by the end of this study, there will be a significant deference between knowledge and practice of the farmers before and after attending

health teaching program. And research question" Are there relationships between knowledge and practice of the study sample and their demographic characteristics?

### ***Research design:-***

Quasi experimental design was used in this study.

#### **Settings:**

The study conducted at El- Safina , El- Hisa village in Tokh by visiting farmers houses and farmland and agriculture units

#### **Material :**

The subjects for this study included two hundred (200) farmers who attended to the above mentioned setting and according to the following criteria:-

- Male farmers
- Age more than 18 years.
- Who use pesticides for at least 5 years.

These numbers represent about 10% out of 2020 farmers working population.

### **Data collection Tools:**

Two tools were designed to collect data to determine the effect of health educational program for farmers using pesticide. Two tools were designed to collect data, pre and post program implementation.

**Questionnaire format:** To collect data about demographic characteristics of the studied farmers, assess their knowledge about pesticide and its health hazards (appendix 1) scoring system of knowledge.

**A:** - Observation sheet was used to assess the farmers practices throughout pesticide process.

**B:** - self report health complains of farmers which indicate the health impact of pesticides exposure. This covered areas as chest pain, tremors, abdominal pain, sore throat and tachycardia or bradycardia.

**C:** - A health educational intervention program according farmers needs.

### **The educational program**

#### **1- First phase:**

This phase included assessment of the knowledge of the farmers about pesticide though using the developed tools as pre-test.

#### **2-Second phase:**

This phase included analysis of the pre-test findings and to detect the farmers' needs to ward pesticide then pesticide educational program was designed.

#### **3-Third phase: (planning &implementation):**

Based on the results from the interviewing questionnaire as well as literature review, and educational health program regarding the pesticide filed or ward, modified by the researcher and revised by the supervisor.

#### **General objectives:-**

By the end of the health educational program for farmers used pesticide the farmers should be able to have adequate knowledge and proper practice.

#### **Specific objectives:-**

By the end of the program, the farmers were able to:-

- Define the concept of pesticide.
- Demonstrated the proper application of pesticides.
- Mention the better regulation of pesticides and better compliance.
- Classify types of risks of pesticide.
- Apply the Protective measures used for preventing and health hazards.

The researcher visited the Agriculture unit in El-Safina Village and El-Hesa village, from 9.00a.m. to 1.00 p.m. for one day/weekly.

The program contains five sessions for each farmers. Each session was taken from 30-45 minutes (AppendixVI). The program was implemented for the studied farmers at suitable time for them to insure that they were exposed to the same learning experience; they received the same program content and used same teaching strategies.

At the beginning of the session, an orientation to the program and its process was presented. Each session started by a summary about what been given through the previous session and the objectives of the new topics, taking into consideration the use of simple language to suite the level of the studied farmers. Discussion, motivation and reinforcement in the form of a copy of the program was given as a gift for each farmer to use it as future reference. All the participants were cooperative with the researcher.

**The study results revealed the following:**

- Studied farmers mean age was  $37.27 \pm 10.77$  years, ranged between 30-<40 years (44%) and 49.5% of them were illiterate.

- As regards occupation, less than two thirds (61 %) of them were farmer only, more than 2/3 % of them are married, more than 1/3% live in family composed of 3-5 persons.
- Nearly three quarters of the farmers were smoking cigarettes with mean  $10.19 \pm 4.26$  cigarettes / day.
- As regard number of working hours in the farm/day, less than half (47.5%) of those were working for more than 10 hrs. More than two thirds (67.5%) it worked in the farmland since 10 to < 15 years.
- More than half (59%) of farmers had Respiratory problems. from less than one fifth (23%) of them seek medical follow up.
- More than half (57%) of studied have knowledge about Organic phosphors, only more than one fifth (29.5%) of them have knowledge about pesticide hazards, less than two thirds have unsatisfactory knowledge about Pesticides enter human body. and less than one third (32.5%) of them reported pesticide enter the body through mouth and 32% mentioned through smelling.
- Majority (96%) of the farmers reported that pesticides are secreted in mother milk, only 20.5% of them mentioned that pesticides accumulate at human body. Also, less than half of the farmers (45%) reported Pesticides accumulated in crops only. Less than one fifth (23%) of farmers mentioned the exposure to pesticides lead to death. And only more than one tenth (11.0) of farmers know that exposure to pesticides lead to cancer.
- The recommended or safe period to return back to the farmland after spraying, about two fifth (42%) of the farmers are returns to the farmland before the recommended period.

- More than half (55 %) of studied farmers treats the side effects of pesticide occur during handling and spray by traditional methods.
- The farmers reason for not visiting to the agricultural unit, were they give them difficult instructions and more than half of them not understand their guidance.
- The observed farmer practice were unsatisfied among mostly of the farmers (88 %) preprogram and improve to satisfactory level among majority of them (93%) post 1 and slightly decline in post 11.
- The current study findings revealed that there is no statistically significant relation was observed between studied farmers total knowledge scores and their age, educational level and occupation pre-post program.
- Statistically significant relation was observed between studied farmer's total knowledge scores and their years post program.
- Statistically significant relation was observed between studied farmer's total practice scores and their age post program.
- Negative statistical significant relation between farmers knowledge related to their practice throughout pesticide process and their age, occupation and education post program.
- Positive statistical significant relationship between attendant HE intervention program and occurrence of pesticide health hazards among the studied sample.

Based on finding of the present study the following recommendations:

- 1- Health education program to all farmers about use of pesticide and protective measure to prevent its health hazards, should conducted in agricultural units.

- 2- Instruction hand book contain all information about pesticides as types, safe dealing, health hazards, and how to dealing with hazards should be given to all farmers.
  
- 3-Pesticides labels should be illustrated containing instructions and precautions in simple way and clarifying those photos through pesticides committee.
  
- 4- Agriculture guidance should visit farmers in his land and instruct him about proper methods of all pesticides process.
  
- 5- Periodic check up for the farmer in rural health units.