Self-Protective Measures for Farmers Using Pesticides in El-Beleda Village

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ABSTRACT

Farmers can be exposed to pesticides and its toxicity in different routes, especially farmers in developing world they facing the greatest risks from pesticide exposure because most of them cannot read and are not aware of precautions. Pesticides are adverse group of chemicals which have been developed to kill, prevent, or suppress a wide variety of pests. ***Aim***: The study aims to assess health hazards of pesticide's exposure among farmers. ***Subjects & Methods:*** The study was conducted at the agriculture unit, farmland and at home in El-Beleda Village, (Giza Governorate). The sample selected included 200 male farmers. The study started in November 2006 and completed by June 2007, using **two tools**: the 1st for assessing socio-demographic characteristics and the 2nd for assessing knowledge, practices and health status of farmers who use pesticides. ***Results:*** The study revealed that less than two thirds of the sample (64.5 %) have unsatisfactory knowledge about pesticides and there is a highly statistically significant relation between farmer's knowledge and total health hazards, the study showed that more than half (59.0 %) have unsafe practices related to pesticides handling and a highly statistically significant relation between practices and health hazards, the study was detected no one use self protective measures when dealing with pesticides and a highly statistically significant relation between self protective measures and total hazards, also the study showed that a highly statistically significant relation between health habits during spraying and health hazards. ***Recommendation:*** The study recommended an educational program for the farmers about pesticides, their effects on health and availability and use of self protective measure when handling pesticides, as well as periodical checkup for farmers .

LIST OF CONTENT

LIST OF CONTENT (Cont.)

LIST OF ABBREVIATIONS

AAOHN :American Association of Occupational Health Nurse

ARC : Agriculture Research Center

AChe : Acetyl cholinesterase

ACGH : American Conference of Governmental Hygienists

ASRM : American Society for Reproductive Medicine

CAPL : Central Agriculture Pesticides Laboratory

EJF : Environmental Justice Foundation

EPA : Environmental Protection Agency

HCH : Hexachlorocyqhexane

JMPR : Joint Meeting of Pesticide Residue

MOA : Ministry of Agriculture

NCI : National Cancer Institute

NRDC : National Resource Defense Council

OHN : Occupational Health Nurse

OPs : Organophosphates

PC : Pesticide Committee

PPE : Personal Protective Equipment

RPHI : Rural Policy Health Institute

WHO : World Health Organization

LIST OF FIGURES

LIST OF TABLES

LIST OF TABLES (Cont.)

INTRODUCTION

Farming occupation is among the most dangerous occupations in the world with a death rate approximately four times that of all other occupations ***(Hitchcock et al., 2003).*** The farmer's daily activities are exposed to many risks including biological, physical, and chemical agents as well as trauma. However, the use of pesticides is one of the most relevant occupational hazards for farmers in developing nations ***(Hurting & San 2003).***

Farmers are at risk for pesticides exposure during planting, weeding, and cultivation of field crops, this type of exposure is a major preventable occupational hazard for farmers. Whereas, the acute and chronic adverse health effects of pesticides exposure have been well documented in clinical and epidemiological investigations, the identification of factors that predict exposures is lacking ***(Yassin et al., 2002).*** Socio-economical, cultural and environmental factors influence the working and living conditions of farmers. The environment in which rural people work and live, standard of living and nutrition are as important to the availability of health services. In developing countries, a

large number of rural people live below the poverty line. In Egypt, 23 % of people live under poverty line; many of them live in rural communities ***(Ministry of Health and Population, 2001).***

Farmers can be exposed to pesticides and their toxicity in three ways; inhalation, dermal and digestive tract. Pesticides are absorbed through lung, GIT, and sometimes through intact skin and eyes, depending on the situation and they could enter the body by any one or more of these routes ***(WHO, 2004).***

Pesticides use is a complex risk issue with environmental, health, and economic implications. Although, it is difficult to completely imagine the levels and security of today's yields without the use of synthetic pesticides which are an important input in the production of many agricultural commodities, the irrational use of these products has led to serious problems and in some crops, like paddy rice in Asia, the costs of pesticide use are already higher than the benefits ***(Food Association Organization, 1999).***

Today, the health hazards due to effects of pesticides are a matter of global concern. Pesticides are taken for granted in farmer's daily use, and their toxicity is frequently ignored. But careless handling and needless exposure can cause serious health

problems (poisoning, burn, tissue damage & cancer), thus farmers need to be warned of, and protected from, the hazards associated ***(Hazarika, 1998. and Allender, 2001).*** The community health nurse should assume a role in raising the farmer's knowledge regarding to pesticide's health effects, how to be prevented through safe dealing and good health practices and using of self protective measures (***WHO/UNDP. 2004).***

Significance of the Study

Data on the knowledge and behaviors related to agricultural pesticides used by farmers in Egypt are lacking. Pesticides, despite their known toxicity, are widely used in developing countries; farmers in the third world including Egypt would encounters the greatest risks from pesticide exposure because many of them cannot read and are not aware of precautions clearly labeled on pesticides containers ***(WHO, 2000).***

Personal protective equipment (PPE) is often not worn, mixing of pesticide is often done in old drums and farmers predominantly use knapsack sprayer to apply where the farmer is directly exposed. This warrants the farmers of more stringent safety and security measures and education of farmers, their

families and the general public about the health hazards, involved with agricultural chemicals, this may reduce health hazards and help contain costs associated with the exposure ***(Meureen, 2002 & Steven, 2004)*** stated that.

Aim of the Study

The current study aims to assess health hazards of pesticide's exposure among farmers through:

1- Assessing the knowledge of farmers regarding pesticides use.

2- Assessing the practices of farmers regarding pesticides use.

3- Identifying commonly pesticides used.

4-Identifing the commonly health hazards regarding pesticide's exposure.

5-Determining the farmer's health problems.

6- Find out farmer's measures for self protection.

Research Questions

This study was based on answering the following questions:

1-Is there a relationship between knowledge of farmers and the hazards of pesticides?

2-Is there a relationship between practices of farmers and the hazards of pesticides?

3- Is there a relationship between farmer's health condition and exposure to pesticides?