

Original Research Article

Assessment of the Effectiveness of Planned Teaching on Knowledge Regarding ILL Effects of Pesticide While Spraying and Its Protective Measures among Farm Workers in Selected Rural Area

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ABSTRACT

Health is a dynamic condition resulting from body's constant adjustment and adaptation in response to stress and changes in the environment for maintaining homeostasis. A farmer means a person who is working and raising field crops in the field of agriculture especially in villages. He works to grow different crops and might own or work as laborer on land owned by others. Pesticides are substance or mixture of substances intended for preventing, destroying, repelling, or mitigation any pest. The pesticides effects on the health of farmers may range from acute and delayed. It may be simple irritation of skin and eyes to more sever effects such as affecting the nervous system. A quasi experimental study was conducted to assess the knowledge of farm workers regarding ill effects of pesticides while spraying and its protective measures. Sixty farmworkers were selected by convenient non-probability sampling technique. Study was conducted in selected village, Akola. The data gathered were analyzed and interpreted using both descriptive and inferential statistics. It was observed that 13.33% of the farm workers had poor knowledge, 71.67% had average knowledge, 15% had good knowledge score and no one had excellent knowledge. Planned teaching was administered to the farmworkers and findings showed that planned teaching was effective in the basis of increased in knowledge score (Post-test mean score 17.41 with SD of ± 2.49 higher than pre-test mean score 10.63 with SD of ± 3.35) i.e. 13.33% of farm workers had average knowledge, 81.67% of farm workers had good knowledge & 5 % of farm workers had excellent knowledge.

Key words: - Knowledge, ill effects, pesticides, protective measures, farmworkers.

INTRODUCTION

Health is a dynamic condition resulting from body's constant adjustment and adaptation in response to stress and changes in the environment for maintaining homeostasis. As defined by WHO (World Health Organization), "Health is state of complete physical, mental and social well-being of an individual and not merely the absence of disease or infirmity".^[1]

A farmer means a person who is working and raising field crops in the field of agriculture especially in villages. He works to grow different crops and might own or work as labourer on land owned by others. Pesticides are substance or mixture

of substances intended for preventing, destroying, repelling, or mitigation any pest. The pesticides effects on the health of farmers may range from acute and delayed. It may be simple irritation of skin and eyes to more sever effects such as affecting the nervous system. Disorders which are seen more commonly are mild conditions like irritation of nose, throat, and eyes. Pesticides are used extensively throughout the world.^[2]

Agricultural workers in developing countries are especially at risk due to lack of education on Health and Safety, training and safety systems. Main causes of accidents are due to physical, mechanical, ergonomic, chemical and biological hazards.^[3]

Exposure to pesticides is one of the most important occupational risks among farmers in developing countries. Occupational exposure to pesticides is of great interest in order to identify the hazards of pesticide use and the establishment of safe methods of pesticide handling. Low education levels of the rural population, lack of information and training on pesticide safety, poor spraying technology, and inadequate personal protection during pesticide use have been reported to play a major role in the intoxication scenario. [4]

A study was conducted to assess the knowledge and practices of Ethiopian farmers about pesticide management: implications for human health. A pretested standardized questionnaire was administered. Great majority 174 (99.4%) farmers had ample awareness about pesticide impact on human health. 135 (77.2%) farmers make use of the empty pesticide containers for various household purposes. The most frequent self-reported toxicity symptoms associated with pesticide use were headache (58.8%), salivation and vomiting (38.2%), nausea (36.5%), and sneezing (12.5%). Creating awareness about safe usage of pesticide is extremely vital by special orientation programs. Besides, promoting alternative pest control strategies such as use of bio-pesticides and integrated pest management (IPM) could also be productive. [5]

A cross sectional study was conducted on a 631 farmers in South India to know the relationship between extent of pesticide use and signs and symptoms of illnesses due to exposure. 433 farmers (68.6%) sprayed pesticides themselves directly exposed. More than 75% used moderately or highly hazardous pesticides; 88% used no protection while handling pesticides. About 50% of sprayers mixed different brands. The farmers reported excessive sweating (36.5%), burning/stinging/itching of eyes (35.7%), dry/sore throat (25.5%), and excessive salivation (14.1%), all more prevalent among sprayers. Among men, excessive sweating and eye

and throat problems were significantly associated with exposure. There is a need to raise farmers and authorities awareness to use protective gear when handling pesticides. [6]

A study was conducted in Chandigarh on 30 farmers with contact dermatitis and 20 controls were patch tested with a series of locally used pesticides. Allergic reactions to 1 or more pesticides were seen in 11 patients but none of the controls. Carbamates (maneb, carbofuran, carbaryl) were the most frequent sensitizers (7 patients), followed by organophosphorus compounds like: malathion and oxydemton methyl (4 patients); 2, 4-dichlorophenoxyacetic acid and fenvalerate (3 patients each); streptomycin (2 patients). Irritant reactions to captaf were seen in 4 patients, thiobencarb weedicide in 3 patients, and organophosphorus compound in 3 patients. Pesticides should be patch tested in all farmers with contact dermatitis. [7]

MATERIALS AND METHODS

To accomplish the objectives of the study, a quasi experimental design was adopted. The population of the study included farm workers in rural area, thus 60 farm workers were selected using convenient non probability sampling technique. The study was conducted at Rohankhed village, Maharashtra. Structured teaching programme was used to collect the data which consisted two parts;

Part I:- Dealt with demographic data such as age, education, annual income and year of experience as a farm worker.

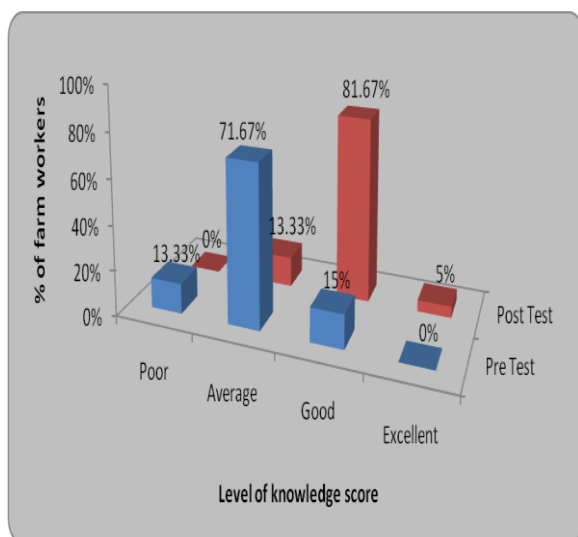
Part II:- Dealt with knowledge questions on pesticide, route of exposure, ill effects and protective measures using structured questions which consisted 28 items. The knowledge level were classified arbitrarily as poor (below 25 %), average (26-50%), good (51-75%) and excellent (76-100 %).

The prepared tool was validated by experts from different faculty. The reliability of tool was $r = 0.787$. The pilot study showed that the study was feasible.

RESULT

Findings related to frequency and percentage wise distribution of farm workers according to their demographic characteristics

It was found that 14 (23.3%) were of the age group of 21-30 years, 16 (26.7%) of 31-40 years, 21 (35%) of 41-50 years and 9 (15%) were of 51-60 years, 12 (20.00%) were educated up to primary school education, 26 (43.3%) up to secondary school, 12 (20.00%) up to higher secondary and 10 (16.7%) were up to graduation and above education, 16 (26.7%) had annual income between 10001-30000 Rs, 18 (30%) had between 30001-50000 Rs and 10 (16.7%) had between 50001-70000 Rs and 16 (26.7%) had annual income >70000Rs, 30 (50%) of them had experience of 1-10 years, 22 (36.7%) had experience of 11-20 years and 8 (13.3%) had experience between 21-30 years.



Findings related to pre-test knowledge score regarding ill effects of pesticides while spraying and its protective measures.

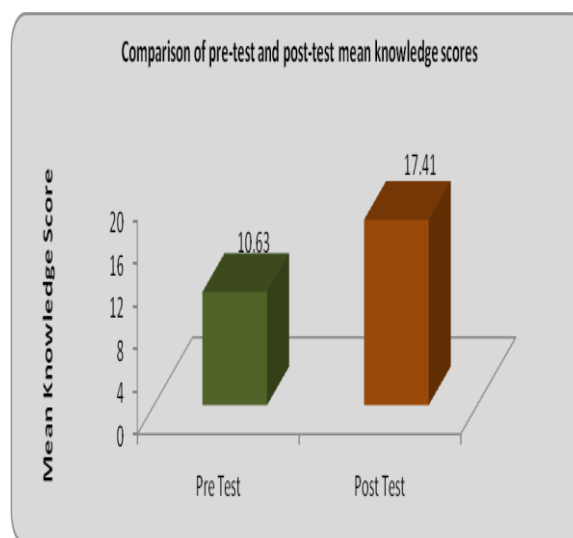
It was found that 8 (13.33%) of the farm workers had poor level of knowledge score, 43(71.67%) had average level of knowledge score, 9 (15%) had good level of knowledge score and no one had excellent level of knowledge score in pre test.

It was found that majority of the farm workers 49(81.67%) had good knowledge,

8(13.33%) had average and 3(5%) had excellent knowledge in post test.

Findings related to difference pre-test and post-test mean knowledge score of farm workers in relation to ill effects of pesticides while spraying and its protective measures.

It was found that post-test mean knowledge score was higher 17.41 with SD of ± 2.49 when compared with pre-test mean knowledge score value which was 10.63 with SD of ± 3.35 .



DISCUSSION

Objectives of the study were 1) to assess the existing knowledge regarding ill effects of pesticides while spraying and its protective measures among farm workers. 2) to evaluate effectiveness of planned teaching on knowledge regarding ill effects of pesticides while spraying and its protective measures among farm workers.

With regards to the first objective of the study, the study result showed that 8 (13.33%) of the farm workers had poor level of knowledge score, 43(71.67%) had average level of knowledge score and 9 (15%) had good level of knowledge score and no one had excellent level of knowledge score. The total mean pre-test knowledge score was 10.63 with SD of ± 3.35 . The study reported that the result regarding level of knowledge regarding ill effects of pesticides while spraying and its protective

measures among farm workers was poor.

With regards to second objective of the study result showed that in pre-test 8 (13.33%) of the farm workers had poor level of knowledge score, 43 (71.67%) had average level of knowledge score and 9 (15%) had good level of knowledge score and no one had excellent level of knowledge score. In post-test majority of the farm workers 49 (81.67%) had good level of knowledge score, 8 (13.33%) had average level of knowledge score and 3 (5%) had excellent level of knowledge score. The study showed that planned teaching was found effective in increasing knowledge of the farm workers regarding ill effects of pesticides while spraying and its protective measures.

To support the above findings there is a cross sectional study which was conducted on a 631 farmers in South India to know the relationship between extent of pesticide use and signs and symptoms of illnesses due to exposure. 433 farmers (68.6%) sprayed pesticides themselves directly exposed. More than 75% used moderately or highly hazardous pesticides; 88% used no protection while handling pesticides. About 50% of sprayers mixed different brands. The farmers reported excessive sweating (36.5%), burning/stinging/itching of eyes (35.7%), dry/sore throat (25.5%), and excessive salivation (14.1%), all more prevalent among sprayers. Among men, excessive sweating and eye and throat problems were significantly associated with exposure. There is a need to raise farmers' and authorities' awareness of the need to use protective gear when handling pesticides. [6]

CONCLUSION

The pre-test and post-test mean knowledge score regarding ill effects of pesticides while spraying and its protective measures among farm workers was 37.97 and 62.20, respectively. The farm workers had poor knowledge regarding ill effects of pesticides while spraying and its protective measures. The planned teaching brought out

improvement in their knowledge regarding ill effects of pesticides while spraying and its protective measures.

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