

ASSESSMENT OF IMPACT OF PHARMACIST'S INTERVENTION AMONG FARMERS KNOWLEDGE TOWARDS ORGANOPHOSPHOROUS COMPOUNDS

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Abstract:

Introduction: Pesticide application is widely regarded as the most appealing way of pest control because it requires less labour and produces more per hectare of land than other methods. Improper use of pesticides will be precarious to the farmers. Interventional studies will prop up for better use of such chemical agents of farmers. **Objectives:** to assess the knowledge of farmers regarding Organophosphorous compounds and to determine the impact of pharmacist provided education towards Organophosphorous compounds among farmers. **Materials and methods:** this was a prospective interventional study carried out in selected taluqas of Kalaburagi district. Selection of farmers was based on nonrandom, one to one interview, questionnaire was used to obtain the data and it was close ended questionnaire. **Results:** 1727 farmers comprising of male and female of various age groups were included in this study. Very few farmers (10.31%) have responded correctly regarding route of absorption of OP compounds into the body; large number of farmers (85.19%) has responded incorrectly regarding toxic effects OP compounds. Less number of farmers (12.53%) was aware of emergency contact number in case of OP poisoning. **Conclusion:** our study findings have revealed that farmers had low knowledge regarding OP compounds.

Keywords: pesticide, farmers, organophosphorus compounds, pharmacist

Introduction:

Agriculture is an important economic sector in India. Over 58 per cent of the rural households depend on agriculture as their principal means of livelihood.¹ All over the world; the use of pesticides is considered the most attractive method of controlling pests which involves less labour and characterizes higher output per hectare of land.² Crop pesticides, poisons chemical substances used in certain circumstances to kill specifically targeted pests.³ At global level, it is estimated that hundreds of thousands of people die each year from the consequences of pesticides exposure.⁴ Studies in developing countries of farmer's knowledge and practices have reported low to moderate levels of knowledge about pesticides.⁵ Chemical pesticides are the most effective, short-term control method for a variety of

crop pests and pathogens but their ailing effects on human, animal and environmental health have also been well accepted.⁶ According to World Health Organization (WHO), each year, about 3,000,000 cases of pesticide poisoning and 220,000 deaths are reported in developing countries.⁷ An excessive and improper use of pesticide may cause serious health burdens, including cancer and other chronic health-related problems. Foetal death, birth defects, altered growth, dermatological concerns, acute and chronic neurotoxicity are some health effects linked to pesticide misuse.⁸ Hence, this study was conducted among farmers of selected taluqas of Kalyana Karnataka region, to improve the knowledge of pesticide handling during buying, mixing, spraying, storing, and disposing.

Objectives:

We have included the following objectives to assess the knowledge of farmers regarding Organophosphorous compounds and to determine the impact of pharmacist provided education towards Organophosphorous compounds among farmers.

Materials and methods

This was a prospective interventional study, carried out for a period of eight months in the selected taluqas of Kalaburagi district. The study was initiated after getting the approval from Institutional Ethics Committee. All the demographics of the farmers were collected in self- designed data collection form. Other vital information data related to knowledge of Organophosphorous compounds were collected in suitable self-designed data record form. The relevant data was collected through self-prepared questionnaire which was evaluated and validated. Non randomized sampling method was considered as per our convenience of our study. The questionnaire comprised of 12 knowledge based questions which have to attempt by farmers. The questionnaire was developed by referring various literatures and articles. The questionnaire was of multiple choices each question consisting of four options of which one is right answer and remaining were wrong answers. Each right answer was awarded one mark whereas wrong answer zero. The obtained score of pre-test and post-test were entered into the Microsoft excel sheet 2013 for further analysis. The gap for pre-test and post-test was 15 days. Parametric statistical Student paired “t” test was applied for results.

RESULTS

Details of response given by the farmers for knowledge based questionnaire

Sl. No	Questions	Responses by farmers (n = 1727)	
		PRE TEST %	POST TEST %
1.	“Pesticides are the compounds used in farming against.”	69.02	91.76
2.	“What do you mean by Organophosphates?”	50.31	93.32
3.	What do you mean by pesticide?	68.22	91.18
4.	What do you mean by Accidental OP poisoning?	27.33	63.83
5.	What do you mean by occupational OP poisoning?	31.32	61.24
6.	What do you mean by acute OP poisoning?	26.65	69.11
7.	What do you mean by delayed OP poisoning?	18.27	58.27
8.	“By which routes Organophosphates are absorbed into the body.”	10.31	72.13
9.	“Organophosphates exhibit which type of toxic effects.”	15.11	93.16
10.	“What are the common CNS effects of Organophosphates?”	32.02	92.73
11.	“What will you do if Skin spillage has occurred?”	18.00	84.17
12.	“what is the emergency contact number in case of OP poisoning”	12.53	95.18

Discussion:

Farmers response for Acute poisoning in pre-test was 26.65% whereas in post it was improved to 69.11%; our study findings were resemblance to the study conducted by Endalew M⁹ et al on Acute pesticide poisoning at floriculture works was shown to be 56% in an Ethiopian study.

The response of farmers for delayed OP poisoning; in pre-test 18.27 farmers have responded correctly whereas in post only 58.27 responded correctly even after the intervention. These findings are somewhat contrast to the study conducted by Kangkhetkron¹⁰ T et al

In our pre study, only 10.31% farmers have replied correct answer for the question by which route pesticides are absorbed into the body, but in post there was improvement with 72.13% which were near similar to the study conducted by Endalew M⁹ et al

For the question what will you do in the case pesticide spillage on the body during spray, 18% of farmers responded correctly but in post-test 84.17 have responded the correct answer.

Majority of the farmers in our study were unaware of emergency landline number in case of OP poisoning after intervention they came to know whom to contact. For this we didn't come any previous article to report or compare.

Conclusion:

Our study findings have revealed that majority of the farmers were lacking knowledge in basic aspects like acute, delayed OP poisoning, its hazards and how to handle in emergency situations raised due to OP poisoning cases. But effective interventions, proper training and involvement of public/private collaborations may improve their knowledge.

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