

## A Study to Assess the Knowledge of Nursing Students Regarding Organophosphorous Poisoning and Its Management in Selected Nursing Institutions of Mysuru

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### ABSTRACT

Health and illness underpin our everyday existence. Health allows us to live the full lives and to function as social beings. Today's student nurses are the tomorrow important entity of health team. When a person decides to be a nurse, they make the most important decisions of their lives they choose to dedicate themselves to the care of others. The main aim of this study was to assess the knowledge of Nursing students regarding organophosphorus poisoning and its management in Nursing institutions of Mysuru. A descriptive method was adopted. The samples consist of 60 nursing students selected using nonprobability convenience sampling technique from selected nursing institutions. The data collection tool consists of a personal profile and structured knowledge questionnaire to assess the level of knowledge. The study shows that majority i.e. 46 (76.66%) of the samples were in the age group of 20–22 years, majority i.e. 53 (88.33%) of the samples are female and all the samples i.e. 60(100%) belong to 3rd year GNM nursing students. Maximum number 55 (91.66%) of the samples have clinical exposures to critical and emergency setting and 48 (71.66%) of the samples have attended educational program on management of poisoning. The knowledge score of nursing students ranged from 12 to 26 and mean 17.45 with standard deviation  $\pm 4.01$  and median value 18. Majority 48 (80%) of nursing students had average knowledge regarding organophosphorous poisoning and its management. There was significant association found between level of knowledge of nursing students and their selected personal variables like clinical exposure to critical and emergency setting and attended any education program on management of poisoning.

**Keywords:** knowledge, organophosphorus poisoning, structured knowledge questionnaire

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### INTRODUCTION

Poison is a substance which endangers life by severely affecting one or more vital functions. Not only drugs but other household and industrial chemicals, insecticides, etc... are frequently involved in poisoning. Poisoning implies harmful effects of a chemical on a biological system [1].

Poisoning both intentional and accidental is significant contributor to mortality and morbidity throughout the world. There are

nearly the million poisoning cases per year resulting in 200,000 death, around 15% of people who are poisoned die as a result OP poisoning has been reported at least since 1962. OP poisonings occur most commonly as a suicide attempt in farming areas of developing countries of the world less commonly by accident. Exposure can be from drinking, breathing in the vapors or skin exposure. The principal pharmacological action of all OPCs is the inhibition of acetyl cholinesterase, and

inhibition of this enzyme leads to accumulation of acetylcholine at nerve synapses and neuromuscular junctions, resulting in over-stimulation of acetylcholine receptors. Carbamate poisoning can present similarly [2].

Poisoning affects the patient's condition quickly, and the patient's life can be endangered if there is slight delay in initiating urgent treatment at AED. Decisions on appropriate responses to such as casualties have to be appropriate, swift and evidence based. It requires early management decisions to ensure an optimal outcome while at the same time avoiding unnecessary investigation and intervention. Even though the client may not appear acutely ill, all infected cases should be preserved as if they have a possibly life bullying alcoholism [3].

The importance of pesticides can be understood from the fact that agriculture is the major component of the India economy; it contributes 22% of the nation GTP and is the lively hood of nearly 90% of the countries work force [4].

### **NEED FOR THE STUDY**

Poisons are subtle and relent weapons which we without violence and often, without arousing suspension in all the fields of life like industries medicines and agriculture, a significant number of new compounds have appeared. As new poisons substances OP compounds can produce significant pesticides related illness and dead in developing countries including India. Acute OP poisoning is a medical emergency and the patients are invariably admitted to the hospital through emergency services the poisoning may be suicidal, accidental and homicidal. Accidental OP poisoning may occur through inhalation while spraying pesticides on crops because of the OP compounds are readily available and relatively cheap and have a rapidly lethal

action even in smaller doses; they are widely used as suicidal poisoning [5].

According to WHO 3 million cases of pesticide (mainly op compounds) poisoning occur every year, resulting in an excess of 250,000 deaths of this, about 1 million are accidental and 2 million are suicidal poisoning. As per estimates of National crime bureau of India, suicides by conception of pesticide account for 19.4% and 19.7% of all cases of suicidal poisoning in the year 2006 to 2007, respectively. The incidence has steadily increases in the recent part and has reach a level in the development countries, where it can be called social calamity [5].

Most estimate concerning the extent of acute pesticide poisoning have been based on data from hospital admission which would include only the serious cases. The latest estimate by WHO task group indicates that there may be 1 million serious unintentional poisoning each year and in additional 2 million people hospitalized for suicide attempt with pesticide. These necessary reflects only a function of a real problem. On the basis of survey of self-reported minor poisoning carried out in the Asian region, it is estimated that the would be many as 25 million agriculture workers in the developing world suffering an episode of poisoning each year [6].

In developing countries, it is estimated 5 lakh deaths in self harm every year about 60% are due to OP poisoning. In hospital-based studies of India mortality rates are associated with periodic have been reported to as high as 50% to 70% [7].

A study was conducted to assess the knowledge of staff nurses related to management of poisoning in an emergency department at V.M. Hospital, Tamil Nadu. Ninety two staff nurses were selected. Data were collected by using closed ended questionnaire, which consisted of 24 items

pertaining to knowledge of staff nurses regarding management of poisoning in emergency department. The findings on knowledge on management of poisoning revealed the most (34.78%) of staff nurses had average knowledge. No association ( $p < 0.05$ ) was found between knowledge scores and demographic variables. The study concluded that level of knowledge of staff nurses regarding management of poisoning in ED was inadequate [8].

Intensive care is needed for the patients coming with organophosphorous or acid poisoning and snake bite. So, thereby all the health professionals are in responsible position to give care. Among all these health professionals, nurses play a major role because she is the person to give comprehensive care. Nurses should have adequate knowledge regarding the treatment, especially the first aid, nursing care given to the patient with organophosphorous, acid poisoning and snake bite. So, the researchers want to know the knowledge of Nursing students regarding the organophosphorous poisoning and its management.

**OBJECTIVES**

- (1) To assess the knowledge of nursing students regarding organophosphorous poisoning and its management.
- (2) To find out the association between the knowledge of nursing students regarding organophosphorous poisoning and its management with their selected personal variables.

**METHODOLOGY**

**Research Design**

Research design used in this study is descriptive approach.

**Sampling Technique**

In the present study, convenience sampling technique was adopted.

**Sample and Sample Size**

Sample is a subset of population selected to in a research study. The present study comprises of 60 nursing students pursuing 3rd year GNM course in JSS School of Nursing, Mysuru.

**Data Collection Technique**

Section A: Personal profile to collect the sample personal variables.

Section B: Structured knowledge questionnaire to assess the knowledge of nursing students regarding organophosphorous poisoning and its management.

**RESULTS**

Table 1 shows that majority i.e. 46(76.66%) of the samples were in the age group of 20–22 years, majority i.e. 53(88.33%) of the samples are female and all the samples i.e. 60(100%) belong to 3rd year GNM nursing students. Maximum number 55 (91.66%) of the samples have clinical exposures to critical and emergency setting and 48(71.66%) of the samples have attended educational program on management of poisoning.

*Table 1. Frequency and percentage distribution of subjects according to their selected personal variables. N = 60.*

Sl. no.	Sample characteristics	Frequency (f)	Percentage (%)
1	Age (years)		
	a. 20–22	46	76.66%
	b. 22–24	14	23.33%
2	Gender		
	a. Male	7	11.66%
	b. Female	53	88.33%
3	Educational qualification		
	a. 3rd year gnm	60	100%
4	Previous clinical exposure to critical and emergency setting		
	a. Yes	55	91.66%
	b. No	5	8.33%
5	Attended any educational program on management of poisoning		
	a. Yes	43	71.66%
	b. No	17	28.33%

It is evident from Table 2 that majority 48(80%) of nursing students had average knowledge regarding organophosphorous poisoning and its management.

**Table 2.** Frequency and percentage distribution of level of knowledge of nursing students regarding organophosphorous poisoning and its management.  $n = 60$ .

Level of knowledge	Frequency	Percentage
Poor knowledge (0–10)	0	0%
Average knowledge (11–20)	48	80%
Good knowledge (21–30)	12	20%

The data presented in Table 3 shows that the mean knowledge score is 17.45, ranged from 12-26 with standard deviation of  $\pm 4.01$  and median 18.

**Table 3.** Mean, median, range and standard deviation of knowledge of staff nurses regarding organophosphorous poisoning and its management.  $n=60$ .

Variable	Mean	Median	Range	SD
Knowledge	17.45	18	12-26	$\pm 4.01$

**Table 4.** Findings related to association between the level of knowledge of nursing students regarding organophosphorous poisoning and its management with their selected personal variables.  $n=60$ .

Sl. no.	Sample characteristics	Average knowledge	Good knowledge	Chi-square value
1	Age (years)			
	a. 20–22	32	14	1.8
	b. 22–24	7	7	
2	Gender			
	a. Male	4	3	1.35 <sup>#</sup>
	b. Female	41	12	
3	Previous exposure to emergency and critical setting			
	a. Yes	45	10	4.74 <sup>*#</sup>
	b. No	2	3	
4	Attended any education program on management of poisoning			
	a. Yes	26	17	4.7 <sup>*</sup>
	b. No	5	12	

$X^2_{(1)}=3.84$ , ( $p>0.05$ ),  $p<0.05^*$  \_ significant #Yates correction.

The data presented in Table 4 shows that the computed values to ascertain the

association between the knowledge with selected personal variables of Nursing students studying in selected Nursing institution of Mysuru was found to have no significant association between knowledge level and selected personal variables like gender and age but there was significant association between knowledge and other personal variables like previous clinical exposure to emergency and clinical setting and attended any education program on management of poisoning.

## RECOMMENDATIONS

The following recommendations were made based on the results of the study.

- (1) A comparative study can be conducted on knowledge regarding organophosphorous poisoning and its management among staff nurses, nursing teachers, students and other health care professionals.
- (2) Planned teaching program can be conducted to enhance the knowledge of nursing students regarding organophosphorous poisoning and its management.
- (3) A similar study may be replicated on a large sample for better generalization of results.

## CONCLUSION

The findings of the study show that majority i.e. 46(76.66%) of the samples were in the age group of 20–22 years, majority i.e. 53(88.33%) of the samples are female and all the samples i.e. 60(100%) belong to 3rd year GNM nursing students. Maximum number 55 (91.66%) of the samples have clinical exposures to critical and emergency setting and 48(71.66%) of the samples have attended educational program on management of poisoning. The knowledge score of nursing students ranged from 12 to 26 and mean 17.45 with standard deviation  $\pm 4.01$  and median value 18. Majority 48(80%) of nursing students had average knowledge regarding organ

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