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## Research Article

### A STUDY TO ASSESS THE EFFECTIVENESS OF TEACHING MODULE ON PREVENTION OF OCCUPATIONAL HEALTH HAZARDS IN RELATION TO KNOWLEDGE AND PRACTICES OF STAFF NURSES WORKING IN ONCOLOGY DEPARTMENT IN SELECTED HOSPITAL OF PUNE CITY

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#### ABSTRACT

**Background:** Occupational hazards is the any condition of a job that can result in illness or injury endangerment, hazards, jeopardy, peril, risk –a source of danger; a possibility of incurring loss or misfortune. Some are Chemotherapy hazards, Radiations and Poor body mechanics. **Aim:** to assess the effectiveness of teaching module on prevention of occupational health hazards in relation to knowledge and practices of staff nurses working in oncology department in selected hospital of pune city. **Methods:** A quasi experimental study was done on 60 staff nurses, Systematic Random sampling technique was adopted to select the samples, and structured questionnaire was made to assess the problems of staff nurses in selected hospital of Pune city. **Results:** Majority 25(41.7%) of the samples were in the age group of 31-40 years. paired t-test was applied for comparison of pretest and posttest knowledge score and practice score of staff nurses. p value (<0.005) therefore null hypothesis was rejected. **Conclusion:** -There are a myriad of occupational hazards in the nursing profession. They cover a wide range of concerns being aware of the potential problems and seeking a reasonable and attainable solution is the key to creating a safer work environment.

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## INTRODUCTION

WHO in 2012 reported that, the National Safety Council (NSC) Reports those hospital employees are 41% more likely to need time off, due to injury or illness than employees in other industries<sup>[1]</sup>. Occupational hazards are dangers to human health and wellbeing which are associated with specific occupations. While efforts are made to reduce hazards, these hazards remain present in the workplace by nature of the profession. CYTOTOXIC drugs sometimes known as antineoplastic, anticancer or cancer chemotherapy drugs include a wide range of chemical compounds. Because of their ability to kill tumor cell by interfering with cell division, they are extensively used to treat cancer<sup>[2]</sup>. More than 11 million cancer cases diagnosed each year worldwide and expected to rise to 16 million by the year 2020. The rising patient' number leads to an increase in the use of chemotherapy drugs [CDs) and so much more possibility of exposure of the health-care workers to these drugs. The number of staff potentially exposed to hazardous effect of the chemotherapy drug was more than 5.5 million<sup>[3]</sup>. Moreover the wide spread use and complexity of chemotherapy has raised concerns about the risks to health care workers involved in

preparing and administrating these drugs and/or caring for patients undergoing treatment<sup>[4,5]</sup>. Many of these drugs are known to be carcinogenic, teratogenic and mutagenic to humans<sup>[6]</sup>. Recent studies show the increase in the potential risks due to occupational exposure to these drugs. These may include hair loss, headache, acute irritation as well as adverse reproductive outcomes including infertility, spontaneous abortion and congenital malformation. Exposure mainly occurs during preparation and administration in health care practice. Nurses and pharmacists are the main groups that are exposed to these drugs in the ambulatory care and hospital setting<sup>[7]</sup>. Exposure may results from direct contact via skin or mucous membrane as eyes[ e.g. splashes] and inhalation of droplet aerosolization mainly because of inappropriate hygienic behavior such as eating, drinking or smoking during preparation, administration or disposal of CDs in contaminated areas. Less likely routs of exposure include needle stick injuries<sup>[8]</sup>. The potential occupational risks for health care professionals may vary due to differences in the frequency and duration of use and individual vulnerability<sup>[9]</sup>. All hospital staff working with chemotherapy drugs should take protective measures to protect themselves from possible exposure which

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is greatly increase during administration of these drugs, therefore strict safety protocol is required at all times<sup>[10]</sup>.

Chemotherapy safety protocol are important in handling, administration and as well as patient care after treatment such measure include using good hygiene practices such as avoiding eating, drinking and smoking in area where drugs are prepared, providing washing facilities, also personnel protective equipment should be provided to prevent direct contact with drugs and should be suitable to the wearer and in good condition<sup>[2]</sup>. Moreover the drugs should be available in a form that is ready to administer without additional manipulation and all used supplies should be disposed of in the proper receptacles<sup>[8]</sup>. Safety should also be stressed when handling patients' excrement. Because excreta from treated patient may contain unchanged cytotoxic drugs or active metabolites, so when handling these wastes, staff should wear suitable personnel protective barriers<sup>[9]</sup>. Although there has been an increased awareness and concern regarding these issues, many nurses still don't follow the guidelines and procedures in the hospital settings. Nurse's awareness of hazards of chemotherapy is associated with improvement of protective measures practice<sup>[11]</sup>.

## MATERIAL AND METHODS

A quasi experimental study consisting of two group pre test, post test design was selected by the researcher. The study was divided into three phases. Phase I was administration of pre-test to two groups. Phase II was administering planned teaching using teaching aids, Power Point Presentation. Phase III was administration of post-test to both the groups & compare the effectiveness.

### Settings and Samples

The study was conducted in various wards, OPD'S, ICU at two different hospitals of pune city and 60 practicing nurses at the hospitals who fulfilled the sampling criteria were chosen. Systematic Random Sampling method was used.

### Tool and Technique

A structured questionnaire was administered to assess the knowledge and attitude of nurses regarding selected Occupational Hazards.

### Validity and Reliability

The content validity and reliability score was found to be 0.71 (71%) was obtained from the experts in the field and pilot study was conducted between 1<sup>st</sup> February to 25<sup>th</sup> February 2016.

### Results: Analysis and interpretation of the data was based on the projected objectives of the study.

- To assess existing knowledge and practices of nurses regarding occupational health hazards.
- To find out effectiveness of teaching module on prevention of occupational health hazards.
- To assess factors responsible for occupational health hazards.
- To associate the finding with selected demographic variables.

## Organization of the study findings

### Section I

It deals with the description of samples based on their personal characteristics.

### Section II

It deals with the analysis of data related to knowledge and practice of nurses regarding occupational health hazards.

### Section III

It deals with the analysis of data related to effectiveness of teaching module on prevention of occupational health hazards.

### Section IV

It deals with the analysis of data related to association of knowledge and practices with demographic variables of staff nurses.

### Section I

#### Description of samples based on their personal characteristics

**Table 1** Description of samples based on their personal characteristics of the samples (nurses) in frequency and percentages N=60

Demographic variable	Freq	%
<b>Age</b>		
20-30 years	15	25.0%
31-40 years	25	41.7%
41-50 years	18	30.0%
Above 50 years	2	3.3%
<b>Gender</b>		
Female	58	96.7%
Male	2	3.3%
<b>Marital Status</b>		
Married	47	78.3%
Single	10	16.7%
Widow	3	5.0%
<b>Qualification</b>		
ANM	39	65.0%
GNM	21	35.0%
<b>Total Years of Experience</b>		
below10 years	17	28.3%
11-20 years	27	45.0%
21 -30 years	12	20.0%
Above 31 years	4	6.7%
<b>Department</b>		
OPD	9	15.0%
Ward	35	58.3%
ICU	9	15.0%
Any other	7	11.7%
<b>Daily working Hours</b>		
Less than 6 hours	8	13.3%
8 hours	49	81.7%
12 hours	3	5.0%

Table 1 reveals that 25% of the samples had age 20-30 years, 41.7% of them had age 31-40 years, 30% of them had age 41-50 years and 3.3% of them had age above 50 years.

### Section II: It deals with the analysis of data related to knowledge and practices of nurses regarding occupational health hazards

**Knowledge of nurses regarding occupational health hazards**

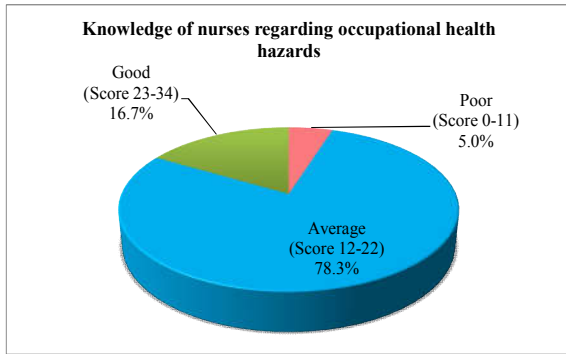


Figure 1

Figure 1 reveals that 78.3% of the nurses had average knowledge (score 12-22), 16.7% of them had good knowledge (score 23-33) and 5% of them had poor knowledge (score 0-11) regarding occupational health hazards.

**Practice of nurses regarding occupational health hazards**

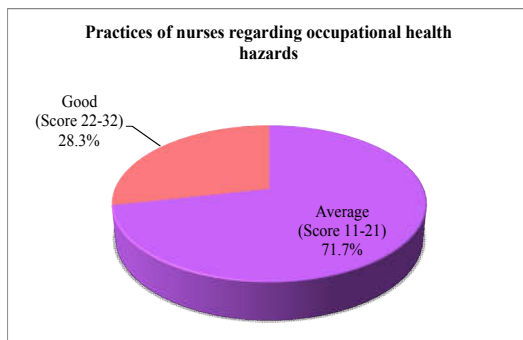


Figure 2

Figure 2 reveals that 71.7% of the nurses had average practices (score 11-21) and 28.3% of them had good practices (score 22-32) regarding occupational health hazards.

**Section III- It deals with the analysis of data related to effectiveness of teaching module on prevention of occupational health hazards**

**Table 2** Effectiveness of teaching module on prevention of occupational health hazards on the knowledge of staff nurses N=60

Knowledge	Pretest		Posttest	
	Frequency	%	Frequency	%
Poor (Score 0-11)	3	5.0%	0	0.0%
Average (Score 12-22)	47	78.3%	24	40.0%
Good (Score 23-34)	10	16.7%	36	60.0%

Table 2 reveals that in pretest, 78.3% of the nurses had average knowledge (score 12-22), 16.7% of them had good knowledge (score 23-33) and 5% of them had poor knowledge (score 0-11) regarding occupational health hazards. In posttest, 60% of the nurses had good knowledge (score 23-33), and 40% of them

**Table 3.** Practices of nurses regarding occupational health hazards N=60

Practices	Pretest	
	Frequency	%
Poor (Score 0-10)	0	0.0%
Average (Score 11-21)	43	71.7%
Good (Score 22-32)	17	28.3%

had average knowledge (score 12-22) regarding occupational health hazards. This indicates that there is remarkable improvement in the knowledge of staff nurses after teaching module.

Table 3 reveals that 71.7% of the nurses had average practices (score 11-21) and 28.3% of them had good practices (score 22-32) regarding occupational health hazards

**Section III- Analysis of data related to effectiveness of teaching module on prevention occupational health hazards Pretest and posttest knowledge of nurses regarding occupational health hazards**

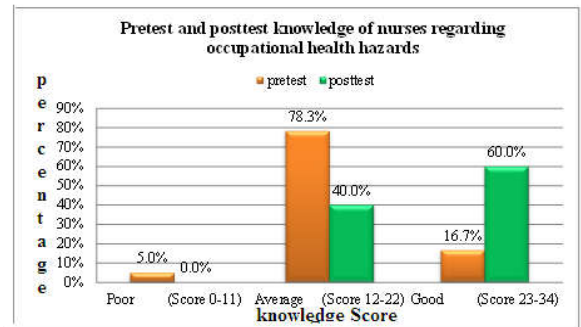


Figure 3

Figure 3 reveals that in pretest, 78.3% of the nurses had average knowledge (score 12-22), 16.7% of them had good knowledge (score 23-33) and 5% of them had poor knowledge (score 0-11) regarding occupational health hazards. In posttest, 60% of the nurses had good knowledge (score 23-33), and 40% of them had average knowledge (score 12-22) regarding occupational health hazards. This indicates that there is remarkable improvement in the knowledge of staff nurses after teaching module.

**Figure 4. Effectiveness of teaching module on prevention of occupational health hazards on the practices of staff nurses**

**Pretest and posttest practices of nurses regarding occupational health hazards**

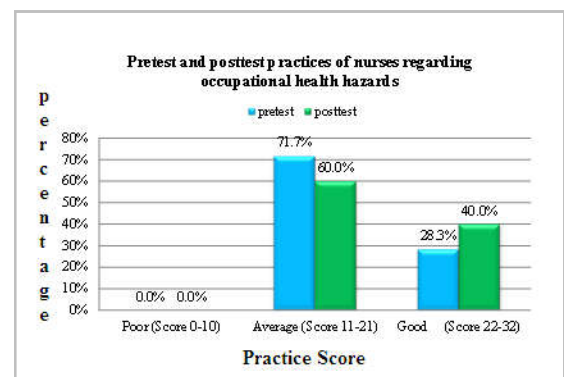


Figure 4

Figure 4 reveals that in pretest, 71.7% of the nurses had average practices (score 11-21) and 28.3% of them had good practices (score 22-32) regarding occupational health hazards. In posttest, 60% of the nurses had average practices (score 11-21) and 40% of them had good practices (score 22-32) regarding occupational health hazards. This indicates that there is remarkable improvement in the practices of staff nurses after teaching module.

**Section IV- Analysis of data related to factors responsible for occupational health hazards**

**Table 4 N=60**

Practices of nurses to prevent occupational health hazards	Never		Rarely		Sometimes		Often		Always	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1 Have you experienced needle stick injury while caring for the patient	29	48.3%	24	40.0%	5	8.3%	0	0.0%	2	3.3%
2 Gloves are worn while dealing with blood and body fluids	5	8.3%	2	3.3%	5	8.3%	5	8.3%	43	71.7%
3 After needle stick injury with ruptures skin, do you encourage bleeding and wash hands with disinfectant hand scrub and water?	4	6.7%	0	0.0%	5	8.3%	6	10.0%	45	75.0%
4 After needle stick injury have you reported to the authorities-in-charge immediately?	0	0.0%	3	5.0%	3	5.0%	5	8.3%	49	81.7%
5 During a radiation exposure, you will not stand when you are pregnant or allow your co-worker when she is pregnant?	4	6.7%	13	21.7%	23	38.3%	14	23.3%	6	10.0%
6 While working at bedside or machine, do you stand close the bed or machine to prevent overstretching?	12	20.0%	2	3.3%	20	33.3%	14	23.3%	12	20.0%
7 While lifting something from the floor level do you lift by squatting position with back erect?	16	26.7%	5	8.3%	18	30.0%	12	20.0%	9	15.0%
8 While transferring a patient have you tried to push the patient away from you instead of pulling the patient near to you?	12	20.0%	3	5.0%	17	28.3%	7	11.7%	21	35.0%

Table 4 reveals that 48.3% of the staff nurses never had experienced needle stick injury while caring for the patient. 71.7% of them always wear Gloves while dealing with blood and body fluids. 75% of them always encourage bleeding and wash hands with disinfectant hand scrub and water after needle stick injury with ruptures skin. 81.7% of them reported to the authorities-in-charge immediately after needle stick injury. 6.7% of them will never and 21.7% of them rarely stand when they are pregnant or allow their co-worker when she is pregnant during a radiation exposure. 20% of them never and 3.3% of them rarely stand close the bed or machine to prevent over stretching while working at bedside or machine. 26.7% of them never and 8.3% of them rarely lift by squatting position with back erect while lifting something from the floor level. 20% of them never and 5% of them rarely tried to push the patient away from them instead of pulling the patient near to them while transferring a patient.

**Table 5 N=60**

Demographic variable	Knowledge			p-value	
	Average	Good	Poor		
Age	20-30 years	12	1	2	0.312
	31-40 years	20	5	0	
	41-50 years	14	3	1	
	Above 50years	1	1	0	
Gender	Female	46	9	3	0.389
	Male	1	1	0	
Marital status	Married	37	8	2	0.196
	Single	9	1	0	
	Widow	1	1	1	
Qualification	ANM	30	6	3	0.681
	GNM	17	4	0	
Total years of experience	Below10 years	15	1	1	0.178
	11-20 years	22	4	1	
	21 -30 years	8	4	0	
	Above 31 years	2	1	1	
Department	OPD	9	0	0	0.148
	Ward	28	4	3	
	ICU	5	4	0	
	Any other	5	2	0	
Daily working hours	Less than 6 hours	5	2	1	0.553
	8 hours	39	8	2	
	12 hours	3	0	0	

**Section V-It deals with the analysis of data related to association of knowledge and practices with demographic variables of staff nurses.**

Association of knowledge and practices with demographic variables of staff nurses was assessed using Fisher’s exact test. The summary of Fisher’s exact test is tabulated below:

**Table 5: Fisher’s exact test for association of knowledge with demographic variables of staff nurses**

Table 5. Reveals that since all the p-values are large, (greater than 0.05), none of the demographic variable was found to have significant association with knowledge of staff nurses.

**Table6. N=60**

Demographic variable	Practices		p-value	
	Average	Good		
Age	20-30 years	10	5	0.125
	31-40 years	18	7	
	41-50 years	15	3	
	Above 50years	0	2	
Gender	Female	41	17	1.000
	Male	2	0	
Marital status	Married	35	12	0.557
	Single	6	4	
	Widow	2	1	
Qualification	ANM	28	11	1.000
	GNM	15	6	
Total years of experience	below10 years	12	5	0.844
	11-20 years	20	7	
	21 -30 years	9	3	
	Above 31 years	2	2	
Department	OPD	6	3	0.591
	Ward	26	9	
	ICU	5	4	
	Any other	6	1	
Daily working hours	Less than 6 hours	6	2	0.854
	8 hours	34	15	
	12 hours	3	0	

**Table 6: Fisher’s exact test for association of practices with demographic variables of staff nurses**

Table 6. reveals that since all the p-values are large, (greater than 0.05), none of the demographic variable was found to have significant association with practices of staff nurses.

## DISCUSSION

The present study was undertaken to assess the knowledge & practice of staff nurses working in the oncology department. The study shows there is no association between the study & demographical variables.

Abdul ali Shahrashbi conducted a study on “A cross-sectional study using a self-administered questionnaire was distributed amongst oncology nurses in nine specialized cancer centers in Tehran. List of all cytotoxic drugs used in these centers were obtained and the most common ones were classified based on International Agency for Research on Cancer. Ongoing concerns exist regarding the dangers inherent when handling cytotoxics, particularly drugs which are in parenteral formulations. On occasions, nurses and medical doctors have been preparing and administering these drugs in the open spaces of wards in the absence of suitable personal protective equipment (PPE) and safety cabinets. To explore further into the severity of occupational hazards, we conducted our research in order to evaluate the healthcare’s understanding of occupational exposure to cytotoxics and occurrence of any side effects”<sup>(12)</sup>.

## Acknowledgement

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## Reference

1. Global Health Observatory (GHO), World Health Statistics 2012 URL available on: [http://www.who.int/gho/publications/world\\_health\\_statistics/2012/en/](http://www.who.int/gho/publications/world_health_statistics/2012/en/)

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2. HSE's. Safe handling of cytotoxic drugs. 1999. [www.hsebooks.co.uk](http://www.hsebooks.co.uk).
3. Conner T. and Diarmid M. Preventing occupational exposures to antineoplastic drugs in health care settings. *A Cancer Journal for Clinicians* 2006; 56 [I]: 354–65.
4. Crstev S., Perunicic B. *et.al*. Work practice and some adverse health effects in nurses handling antineoplastic drugs. *Occupational safety & health administration. La Medicina del Lavoro* 2003; 94 [5]:432-9.
5. Dranitsaris G., *et.al*. Are health care providers who work with cancer drugs at an increased risk for toxic events? A systemic review and meta analysis. *J Onco Phar Practice* 2005; 11[2]:69-78.
6. Ben-Ami S. *et.al*. The influence of nurses' knowledge, attitudes and health believes on their safe behavior with cytotoxic drugs in Israel. *Cancer nursing* 2001; 24 [1]:192-200.
7. Vollono C.*et.al* Risk perception and self assessment of exposure to antineoplastic agents in a group of nurses and pharmacists. *Giornale Italiano di Medicina de Lavoro ed Ergonomia* 2002; 24 [1]:49-55.
8. Chaudhary R.*et.al*. Chemotherapy knowledge and handling practice of nurses working in a medical university of Nepal. *JCT* 2012; 3[1]: 110-4.
9. Polovich M. Safe handling of hazardous drugs. On line journal of issues in Nursing 2004; 9[5] available <http://www.nursingworld.org/ojin/topic25>.
10. Bergman P. Chemotherapy preparation, administration and disposal. Armonk NY. Bright heart veterinary centers 2003; 1[1].
11. Kosgeroglou N, *et.al*. Turkish nurses' information about and administration of chemotherapy drugs. *Journal of clinical nursing* 2006; 15 [1]:1179-87.
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