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A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING SAFE HANDLING AND ADMINISTRATION OF CHEMO THERAPEUTIC DRUGS AMONG STAFF NURSES INDHIRAJ HOSPITAL PIPARIYA, WAGHODIYA, VADODARA

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ABSTRACT

Background: The nature of chemotherapy drugs makes them harmful to healthy cells and tissues as well as cancerous cells Chronic effects that have been identified in patients given these drugs include cancer, infertility, miscarriage, birth defects, damage to the liver and kidney, bone marrow, the lungs and heart, and hearing impairment. PI are required to assess the exposure hazards of their work with chemotherapy and other hazardous drugs to determine the appropriate precautions and controls to be taken. **Aim:** to find the effectiveness of structured teaching programme on knowledge regarding safe handling and administration of chemo therapeutic drugs among staff nurses**. Materials and Method**: a Pre-experimental one group pretest-posttest design was selected for the study. The primary objective was to evaluate the effectiveness of structured teaching programme on knowledge regarding safe handling and

administration of chemo therapeutic drugs among staff nurses. Non-probability purposive sampling technique was used to select 48 samples are assigned to collect the data. **Result:** The collected data were tabulated and analyzed by using descriptive and inferential statistics. The obtained X2 value is not significant. Hence, the H2 is fails to accept. Result revealed that post- test mean knowledge score was 25.96±2.568 higher than pre-test mean knowledge score 11.98±2.471with mean difference was 13.98. The efficacy wasES examined using paired t test with obtained (t=28.39) at df=47was statistically significant at p<0.01 level. Hence, the H1 is to accept **Conclusion:** According to the results showed that a structured teaching programme was effective in increasing staff nurses' knowledge regarding the safe handling and administration of chemotherapeutic drugs.

Keywords: effectiveness, structured teaching programme, safe handling, administration, chemotherapy, staff

INTRODUCTION:

A malignant tumor has irregular borders and grows faster than a benign tumor. A malignant tumor can also spread to other parts of your body **[1]**.

Cancer is a group of disease characterized by uncontrolled cellular growth with local tissue invasion and systemic metastastasis. Cancer is a term used for disease in which abnormal cells divide without control and are able to invade other tissues. The treatment of cancer with medicine, including Chemotherapy **[2]**.

Chemotherapy is becoming more crucial for the treatment of cancer, especially with its usage as an adjunct to local therapy. Chemotherapy also has a growing role in advanced disease, when the tumour has spread from its original location. Chemotherapy is a crucial treatment option in oncology and will likely stay that way for a long time despite its drawbacks **[3]**. Systemic chemotherapy used to treat cancer frequently has serious side effects **[4]**. According to nurses' perspectives, personal motivation for adhering to safe-handling norms has to be reviewed. In order to improve outcomes and lower the danger of unneeded chemotherapy exposure, chemotherapy delivery techniques must also be evaluated to see which safety obstacles can be reduced or eliminated as well as how treatment volumes may be lowered or organised. Qualitative survey responses exhort organisational leaders to make sure that nursing staff has access to the proper personal protective equipment (PPE) **[5]** knowledge is essential for safe nursing practice, but it becomes increasingly important when a nurse's lack of understanding compromises patient safety or her own safety. Chemotherapy may have unintentionally harmed the oncology work

environment for more than thirty years, according to prior study. In most circumstances, oncology nurses administer chemotherapy at the point of care, acting as both a safety net for both themselves and their patients. There are no enforceable national regulations for companies or employees, despite the grave dangers that contamination poses to healthcare personnel. The current rules for administering chemotherapy are "voluntary" and only offer suggestions. the Occupational Safety and Health Administration is attempting to create guidelines that would. Specific safety guidelines for the administration of chemotherapy have been developed by the Oncology Nursing Society (ONS) and the American Society of Clinical Oncology (ASCO). These criteria mandate the use of an extensive teaching programme by every institution as well as the periodic evaluation of nursing competency.Sadly, the majority of chemotherapy centres demand initial education and training programmes .Institutions giving chemotherapy must do so, given this **[6]**.

Even though there is more awareness and concern about these issues, many nurses in hospital settings continue to disregard the policies and procedures. Improvement in the application of precautionary measures is correlated with nurses' awareness of chemotherapy risks **[7]**.

MATERIALS AND METHODS

The Quantitative research approach is used in this study. Pre-experimental one group pretest-posttest research design was selected for the study. Staff nurses working in Dhiraj Hospital were the sources of data. Nurses working in chemotherapeutic ward and critical care unit in Dhiraj Hospital were the sample population. For this research study sample size was 48. Non probability Purposive sampling technique was used. Staff Nurses who are register according to State or National council of Nursing. Staff Nurses who are working in Chemo Ward and Critical Care Unit., Staff Nurses Who are willing to participate in the study, staff nurses who are present at the time of data collection were included in the following study. Nurses who are not present at the time of data collection, nurses who are Sick. ANM Staff Nurses. Nurses who have attended similar study were excluded from the study. Tool consist two section. Section I: Demographic Data: This section included demographic variables like Age, Gender, Religion, Educational status, Years of experiences, any additional training, Section -II: Questionnaire for assessment tool: This section deals with questionnaire for

assessment of knowledge regarding safe handling and administration of chemotherapeutic drug. It consists of 30 multiple choice questions related to knowledge regarding safe handling and administration of chemotherapeutic drug among staff nurses. After obtaining formal Permission from the Medical Superintendent of Dhiraj Hospital, Piparia, Vadodara, participants were selected based on the criteria of sample selection. The investigator take the consent from each Staff Nurses separately and proceed with the data collection. The investigator ensure that privacy, religion, cultural belief and ethical values were respected during the process of data collection and maintained by the researcher. The period of study is extended for Two weeks, the data were collected from Monday to Saturday between 10am to 4pm. Each day data were collected from available study participants in the Dhiraj hospital. The Nurses were interviewed by using the structured teaching programme. The pretest will be conducted for 30 minutes. The intervention strategy structured teaching programme was implemented on the next day for 1 to 2 hours using power point pictures and power point presentation which is prepared by the researcher after consulting with the specialist. The material was provided to them. After two days of interval, post test was conducted for 30 minutes among the same study participants using the same questionnaire and evaluated the effectiveness of structured teaching programme on safe handling and administration of chemo therapeutic drugs.

RESULTS:

Level of knowledge on safe handling and administration of chemotherapeutic drugs among staff nurses revealed that during the pre-test, 14 (29.2%) of the staff nurses had inadequate knowledge, the majority staff nurses 34 (70.8%) had moderate knowledge depicts that level of knowledge on safe handling and administration of chemotherapeutic drugs among staff nurses revealed that during the posttest 43 (89.6%) of the staff nurses had adequate knowledge, 5 (10.4%) staff nurses had moderate knowledge of the safe handling and administration of chemotherapeutic drugs.

Table 1 shows the frequency and percentage distribution of the staff nurses' demographic factors. According to their age, the Majority staff nurses 33(68.7%) were between the ages of 21-25, followed by 14 (29%) 26-30, and only 1 (2.1%) staff nurses above 30 years of age. Regarding gender of staff nurses, maximum 37(77.1%) were female staff nurses and 11(22.9%) were male staff nurses.

In religion, 47 staff nurses (97.9%) are hindus, while 1 (2.1%) staff nurses are muslims. Regarding the educational status of staff nurses, a maximum of 31 (64.6% of nurses) were GNM-trained, and 17 (35.4%) were B.Sc. trained. The most of staff nurses, 22 (45.8%), had less than two years' experience, 15 (31.3%) had between two and three years' experience, and 11 (22.9%) had more than three years' experience. As per any additional training, all 48(100%) of staff nurses had no any additional training on safe handling and administration of chemotherapeutic drugs.

Table 2 Present that level of knowledge on safe handling and administration of chemotherapeutic drugs among staff nurses revealed that during the pre-test, 14 (29.2%) of the staff nurses had inadequate knowledge, the majority staff nurses 34 (70.8%) had moderate knowledge.

Table 3 depicts that level of knowledge on safe handling and administration of chemotherapeutic drugs among staff nurses revealed that during the pre-test, 14 (29.2%) of the staff nurses had inadequate knowledge, the majority staff nurses 34 (70.8%) had moderate knowledge .depicts that level of knowledge on safe handling and administration of chemotherapeutic drugs among staff nurses revealed that during the posttest 43 (89.6%) of the staff nurses had adequate knowledge, 5 (10.4%) staff nurses had moderate knowledge of the safe handling and administration of chemotherapeutic drugs.

Table 4 depicts the effectiveness of structured teaching programme on knowledge regarding safe handling and administration of chemotherapeutic drugs among staff nurses. Result revealed that post-test mean knowledge score was 25.96±2.568 was higher than pre-test mean knowledge score 11.98±2.471with mean difference was 13.98. The efficacy was examined using paired t test with obtained (t=28.39) at df=47was statistically significant at $p<0.01$ level. The results showed that a structured teaching programme was effective in increasing staff nurses' knowledge regarding the safe handling and administration of chemotherapeutic drugs.

Table 5 depicts the association between post-test knowledge scores regarding safe handling and administration of chemotherapeutic drugs among staff nurses and their selected demographic variables which was tested by chi- square test. Result revealed that age, gender, religion, educational status, years of experience and any additional training were not found significant association at $p<0.05$ with post-

test knowledge scores regarding safe handling and administration of chemotherapeutic drugs among staff nurses.

Table 1: Frequency and percentage distribution of demographic variables (N=48)

S. No	Demographic Variables	Frequency (f)	Percentage (%)
1	Age in years		
	a. 21 – 25 years	33	68.7
	b. 26 – 30 years	14	29.2
	c. > 30 years	1	2.1
2	Gender		
	a. Male	11	22.9
	b. Female	37	77.1
3	Religion		
	a. Hindu	47	97.9
	b. Christian	0	0
	c. Muslim	1	2.1
	d. Others	0	0
4	Educational status		
	a. GNM	31	64.6
	b. B. Sc Nursing	17	35.4
5	Years of experience		
	a. < 2 years	22	45.8
	b. 2 – 3 years	15	31.3
	c. > 3 years	11	22.9
6	Any additional training		
	a. Yes	0	0
	b. No	48	100

Table 2: Distribution of level of knowledge on safe handling and administration ofchemotherapeutic drugs among staff nurses before structured teaching programme (N=48)

Level of knowledge	Pre-test	
	F (Frequency)	% (Percentage)
Inadequate knowledge	14	29.2
Moderate knowledge	34	70.8
Adequate knowledge	0	0

Table 3: Distribution of level of knowledge on safe handling and administration of chemotherapeutic drugs among staff nurses before and after structured teaching programme (N=48)

Level of knowledge	Pre-test		Post-test	
	F (Frequency)	% (Percentage)	F (Frequency)	% (Percentage)
Inadequate knowledge	14	29.2	0	0
Moderate knowledge	34	70.8	5	10.4
Adequate knowledge	0	0	43	89.6

Table 4: using paired (t) test for Effectiveness of structured teaching programme regarding safe handling and administration of chemotherapeutic drugs among staff nurses (N=48)

Comparison	Mean	SD	Mean Difference	t test value	df	p value
Pre-test	11.98	2.471	13.98	28.39	47	0.001*
Post-test	25.96	2.568				

*P<0.05 level of significance; NS-Non significant

Table 5: Association between post-test knowledge scores regarding safe handling and administration of chemotherapeutic drugs among staff nurses and their selected demographic variables (N=48)

S. No	Demographic variables	Post-test knowledge		□2 value	df	p value
		Moderate	Adequate			
1	Age in years			2.607	2	0.272NS
	a. 21 – 25 years	2	31			
	b. 26 – 30 years	3	11			
	c. > 30 years	0	1			
2	Gender			0.027	1	0.870NS
	a. Male	1	10			
	b. Female	4	33			
3	Religion			0.119	1	0.730NS
	a. Hindu	5	42			
	b. Christian	0	1			
	c. Muslim	--	--			
	d. Others	--	--			
4	Educational Status			1.475	1	0.225NS
	a. GNM	2	29			
	b. B. Sc Nursing	3	14			
5	Years of experience			1.660	2	0.436NS
	a. < 2 years	1	21			
	b. 2 – 3 years	2	13			
	c. > 3 years	2	9			
6	Any additional training			NA	NA	NA
	a. Yes	--	-- 43			
	b. No	5				

*P<0.05 level of significance ; NS-Non significant

DISCUSSION:

The Quantitative research approach is used in this study. Pre-experimental one group pretest posttest design was selected for the study. Population was nurses working in chemotherapeutic ward and critical care unit in Dhiraj Hospital. Sample Size For this research study sample size is

Sampling Technique Non probability Purposive sampling technique used. The tool

is prepared by the investigator for demographic data collection and Questionnaire for assessment tool for assessment of knowledge regarding safe handling and administration of chemotherapeutic drug. Tool consist two section. Demographic Data This section included demographic variables like Age, Gender, Religion, Educational status, Years of experiences, Any additional training and Questionnaire for assessment tool this section deals with questionnaire for assessment of knowledge regarding safe handling and administration of chemotherapeutic drug. It consists of 30 multiple choice questions related to knowledge regarding safe handling and administration of chemotherapeutic drug among staff nurses. Tables and diagrams were used to represent the demographic characteristics, and knowledge regarding safe handling and administration of chemotherapeutic drug level of knowledge on safe handling and administration of chemotherapeutic drugs among staff nurses revealed that during the pre- test, 14 (29.2%) of the staff nurses had inadequate knowledge, the majority staff nurses 34 (70.8%) had moderate knowledge . level of knowledge on safe handling and administration of chemotherapeutic drugs among staff nurses revealed that during the posttest 43 (89.6%) of the staff nurses had adequate knowledge, 5 (10.4%) staff nurses had moderate knowledge of the safe handling and administration of chemotherapeutic drugs. The calculated‘t’ value 28.39 is greater than table value. Hence, H1 Accepted for assessment of knowledge regarding safe handling and administration of chemotherapeutic drug among staff nurses.

CONCLUSION:

This study presents the conclusion drawn, implication, limitation and recommendation of the present study, the focus of this study was to assess effectiveness of safe handling and administration of chemotherapeutic drug among staff nurses. The study undertaken to assess effectiveness of safe handling and administration of chemotherapeutic drug among staff nurses with non-probability purposive sampling technique was used to draw the sample. The size of sample 48 and selection of sample was done according to inclusion criteria. In the analysis used both descriptive and inferential statistics.

Conflict of Interest: The authors declare that there is no any conflict of interest

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