

**Title:** Chemotherapy knowledge and handling practice of nurses working in oncology Departments.

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**Abstract:**

**Background:** At any age, many antineoplastic agents are known to be teratogenic and mutagenic to humans. Nurses are the main groups that are exposed to these drugs in hospital settings.

Generally, the occupational activities that pose to greatest risk of exposure are the preparation and administration of antineoplastic, cleaning of chemotherapy spills, and handling of patient excreta as well as to assess the change of cytotoxic drug handling practices in wards after a series of pharmacist-based interventions.

The characteristics of the drugs that are used in chemotherapy have given rise to many issues, one of which whether the nurses are competent when working with chemotherapy. So nurses should know how to protect themselves and their patients and their work environment against toxic effects of chemotherapy.

**Aim:** assess the nurse's knowledge regarding the mode of exposure to cytotoxic drugs (CDs) and to identify current patterns of use of personal protective equipment while handling anti-tumor chemotherapeutic agents.

**Significance of study:** This study will enhance and increase the nurse's knowledge and practice regarding exposure to and prevention of cytotoxic drugs (CDs) and the use of personal protective equipment while properly handling antitumor chemotherapeutic agents including all preventive measures. This is support them with some kind of resilience in the face of the cytotoxic drugs.

**Research design and method:** Descriptive study design on 125 nurses, the convenience sample technique will be used to select the study subjects using structured and semi-structured questionnaire. The respondents must have at least 3 months of experience working in oncology department and agree to participate, whose will be selected using a convenience sampling method.

**Sample:** A convenience sample of 125 nurses is voluntarily participated in the study. Software will be used for sample size calculation with response distribution 80 %, the margin of error 5%, and confidence level 95%. Nurses are selected on the basis of the following criteria: Age  $\geq 20$  of both gender, have at least three months of nursing experience in selected units (working in oncology), speak and read English, and agree to participate in the study

**Results:** In this study, the majority of working nurses 90% (n = 125) belong to 30- 39years, 44.68% are female, 93% have a bachelor's degree, 87% have 3-6 years of experience. Less than 60% of nurses have a satisfactory knowledge of professional ethics. The knowledge about the experience variable of the disease and the method of prevention among specific areas; the total score for nurses' adequate perceptions is (91.4%), and all items have high and sufficient percentages ranging from (89.4%- 97.4%). The results also showed we reject the null hypotheses, so the nurse's knowledge of the method of exposure to cytotoxic drugs does not have any positive effect on the patient at 0.05 level of significance. In addition to there is no positive impact on the patient and the nurse for not using personal protective equipment while fully and correctly handling anti-tumor chemotherapy agents?

**Conclusion:** There are no statistically significant relationships between nurses' knowledge of the method of exposure to cytotoxic drugs and the positive effect on the patient, and there are no relationships between the positive impact on the patient and the nurse for not using personal protective equipment while fully and correctly dealing with antitumor chemotherapeutic agents. While, there is a significant correlation between the working nurses' knowledge regarding the nurse's knowledge of the listening materials and the use of personal protection patterns (marital status, taking training courses related to the method of dealing with medications and their dangers in the oncology department), but age and gender were not related to more knowledge of how to use toxic materials and the necessity of wearing personal protective equipment.

**Recommendation:** This study recommends providing opportunities for all nurses in the oncology department to take courses to increase knowledge and experience in the oncology department and use the correct patterns of personal protective equipment in the correct form and in order, in addition to activating the role of the nursing union in laying foundations and instructions for patients in each oncology department about the danger of toxic substances and the necessity of wearing Personal protective equipment.

**Key Words:** Nurses; Chemotherapy; Knowledge; Practice.