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KNOWLEDGE AND PRACTICE OF REGISTERED NURSES REGARDING THE CHEMOTHERAPEUTIC DRUG MONITORING PROTOCOL

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ABSTRACT

Chemotherapy is a category of cancer treatment that uses one or more anticancer drugs as part of a standardized chemotherapy regimen. Chemotherapy may be given with a curative intent (which almost always involves combinations of drugs), or it may aim to prolong life or to reduce symptoms as palliative chemotherapy. Chemotherapy is one of the major categories of medical oncology. Chemotherapy safety protocol are important in handling, administration and as well as patient care after treatment, so a study was done to assess the knowledge and practice regarding chemotherapeutic drug monitoring protocol among the registered nurses in a selected hospital of New Delhi. The objectives of the study were to assess the knowledge and practice of registered nurses regarding chemotherapeutic drug monitoring protocol. The population of the study was registered nurses working in selected hospital of New Delhi. Data was collected through structure questionnaire and practice checklist. Analysis of data was done by computing frequency, percentage, mean and median and standard deviation.

INTRODUCTION

Cancer is defined as the unrestrained growth of cells that destroy normal tissue and body parts. The goal of chemotherapy is to inhibit the growth of cancer cells while causing as little effect on normal cells as possible. Cancer is the number one natural cause of death in geriatric feline patients; it accounts for nearly 50 percent of deaths each year.

Importantly, the use of drugs (whether chemotherapy, hormonal therapy or targeted therapy) constitutes "systemic therapy" for cancer in that they are introduced into the bloodstream and are therefore in principle able to address cancer at any anatomic location in the body. Systemic therapy is often used in conjunction with other modalities that constitute "local therapy" (i.e. treatments whose efficacy is confined to the anatomic area where they are applied) for cancer such as radiation therapy, surgery, and/or hyperthermia therapy Chemotherapy drugs can be lifesaving to our patients but dangerous to those who are handling and administrating the drugs. Only personnel who have been trained in administering chemotherapy should be handling the drugs. Each drug will have a list of doses, route of administration, drug interactions, laboratory requirements, etc. As a nurse it is a good idea to research each drug prior to handling it.

A chemotherapeutic plan is best left up to the most experienced oncologist treating the specific cancer patient. The registered nurses start the drug and must keep

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in mind each patient is an individual and we may have to alter our initial treatment plan.

The treatment schedule varies depending on the type of cancer and the chemotherapy drug chosen. In many cases once the initial treatment plan has been concluded the patient will require periodic follow up treatments for the rest of the patient's life. For best therapeutic results we use a drug with a dose that causes minimal toxicity with maximal effectiveness. The most effective dose is often very close to the toxic.

AIM

Because of deficit in knowledge and improper handling and administrating, the drugs can be dangerous to patients and health care professionals. For best therapeutic results, chemotherapy safety protocol are important in handling, administration and as well as patient care after treatment.

NEED OF THE STUDY

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 [1]. 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 [2,3]. 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 are the main groups that are exposed to these drugs in the ambulatory care and hospital setting [4]. Exposure may results from direct contact via skin or mucous membrane as eyes [e.g. splashes] and inhalation of droplet. Less likely routes of exposure include needle stick injuries [5]. The potential occupational risks for health care professionals may vary due to differences in the frequency and duration of use and individual vulnerability [6]. All hospital staff working with chemotherapy drugs should take protective measures to protect themselves from possible exposure which is greatly increase during administration of these drugs, therefore strict safety protocol is required at all times [7]. Chemotherapy safety protocol are important in handling, administration and as well as patient care after treatment. So the need was felt to assess the knowledge and practice regarding chemotherapeutic drug monitoring protocol among the registered nurses in a selected hospital.

IMPLEMENTATION

The study was conducted in December 2017. This was an exploratory study which used a structured self- administered knowledge questionnaire and an observational practice checklist to assess the knowledge and practice regarding chemotherapeutic drug monitoring protocol among the registered nurses in a selected hospital located in New Delhi.

Tools Used: The knowledge questionnaire consisted 20 questions and practice checklist had 16 questions. Both were self- generated and adapted from literature. The questionnaires were pretested by conducting a pilot study. The scoring as for correct '1' score and for wrong as '0' score. The questionnaires covered 1) safety precautions, 2) personal protective equipments 3) Hand washing 4) Disposal of cytotoxic waste.

Study Subjects: 80 registered nurses working in different clinical areas like general ward, Oncology ward, Pediatric ward etc. of Indraprastha Apollo Hospital, New Delhi.

Data Collection: In the study, 80 registered nurses of different clinical units (like general ward, Oncology ward, Pediatric ward etc.) were selected by simple random sampling method. They were interviewed and observed personally. Before the questionnaire was given to the participants, the aims and objectives the study were explained to them. Grading criteria for knowledge questionnaire was Good (score >70%), Average (score 50-70%) and Poor (Score <50%). Grading criteria for Practice checklist was Good (score >70%) and Poor (score <70%).

RESULTS

Figure 1-4 show the distribution of background information of the registered nurses. Out of 80 participants, 34(42.5%) were in the age group of 21-25 years; majority of the registered nurses 77(96.35%) were females; 25 (31.25%) possess diploma in General Nursing and Midwifery; 33(41.25%) had professional experience of 0-1 year, it was found that 21(26.25%) registered nurse were from Oncology ward.

Table 1 and Figure 5 shows the item wise frequency and percentage distribution of knowledge score of registered nurses. Mean knowledge score and standard deviation of registered nurses was 17.25 ±13.93. Out of 80 registered nurses, 24 (30%) had good knowledge, 55 (69%) had average knowledge. One had poor knowledge about chemotherapeutic drug monitoring protocol.

Table 2 and Figure 6 shows the item- wise frequency and percentage of practice checklist score of

registered Nurses. Mean practice score of registered nurses was 17.25±13.93. The practice checklist score depicts that all registered nurses were following good practice.

Figure 1. Age of Registered Nurses

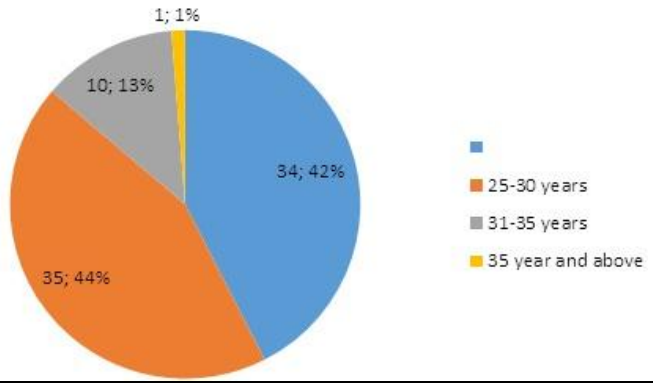

Figure 2. Professional Experience of Registered Nurses

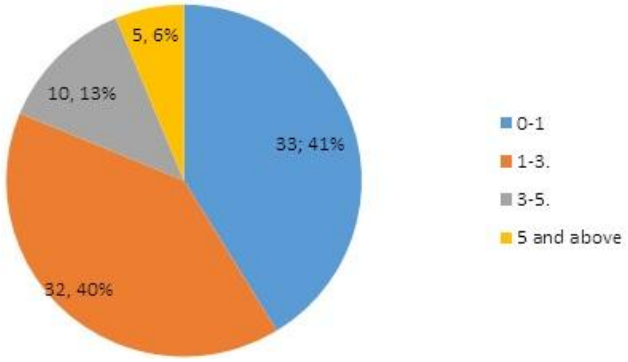

Figure 3. Clinical Area of Registered Nurses

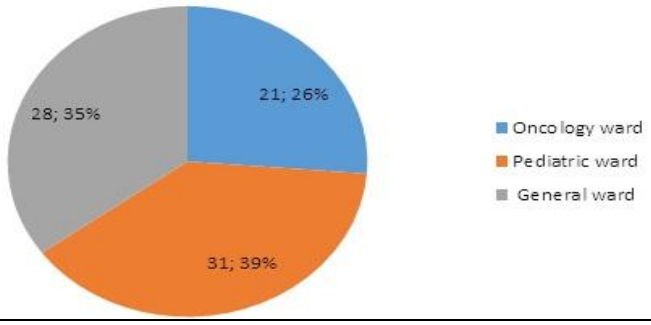

Figure 4. In-Service Education Last Attended

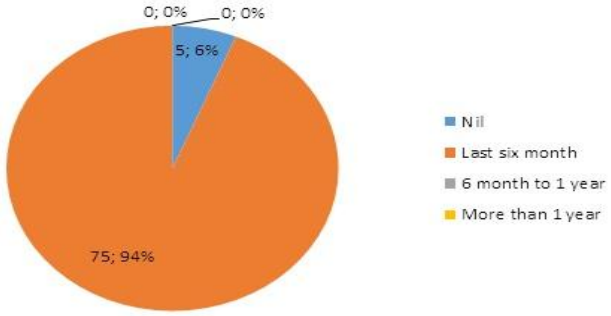

Figure 5. Line Graph Showing Mean, Median and Standard Deviation of Knowledge Score

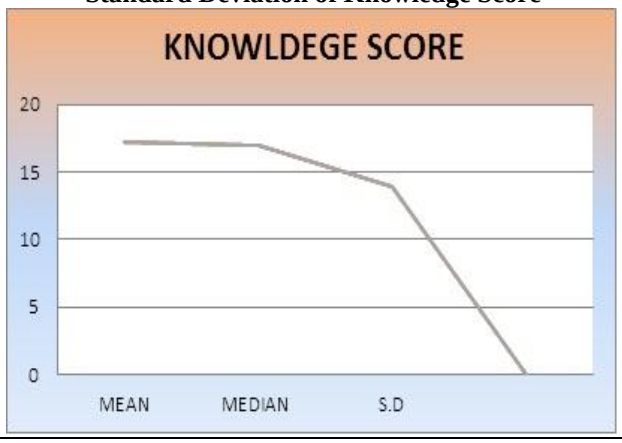

Figure 6. Line Graph Showing Mean, Median and Standard Deviation of Practice Score

Table 1. Frequency and Percentage Distribution of Knowledge Score Of Registered Nurses

Knowledge	Frequency (f)	Percentage (%)
Poor knowledge	1	1.25
Average knowledge	55	68.75
Good knowledge	24	30

Table 2. Frequency and Percentage Distribution of Practice Score of Registered Nurses

Practice Checklist	Frequency (f)	Percentage (%)
Poor practice	0	0
Average practice	0	0
Good practice	80	100

DISCUSSION AND CONCLUSION

The study was conducted with an aim to assess the level of knowledge and practice of registered nurses as well as to identify the areas which were needed to improve in their knowledge and practice skills and reduce the chances of errors and health issues. Majority of registered nurses had good knowledge and all were following good practices. A similar study conducted by Kosgeroglu N., et al., (2008) depicts that the ratio for nurse's usage of the safety cabinet during the preparation of chemotherapeutic drugs was very low at 14.2%. Only 7.4% of nurses had received in-service education about chemotherapeutics. The study revealed that the hospital should be required to provide sufficient equipment and to give this precedence in hospital policies [8]. In another study by Polovich and Clark‟s study (2012), nurses reported high levels of exposure knowledge, self-efficacy for the use of PPE, and perceived risk of harm from chemotherapy exposure. A study conducted by Magda M. Mohsen and Manal E. Fareed concluded that before educating the oncology nurses, the chemotherapy safety protocol, their knowledge and practice were not satisfactory. But enrichment of these nurses by the safety protocol seemed to have positive effect on improving their knowledge and practice. Also this study showed the necessity of improving the work environment especially for as a method to provide a protection for the health care workers especially oncology nurses who are involved in handling and administration of chemotherapy[10].Despite these outcomes, the total use of safety precautions for their population was quite low (an average of 1.9 in a range of 1 to 5). These findings are similar to the responses of registered nurses surveyed for the purposes of this project [9,10].

In closing, knowledge and practice of registered nurses regarding chemotherapeutic drug monitoring protocol is average. Recommendations to refine the shortfall include continuing nursing education program on chemotherapeutic drug monitoring protocol and nursing audit on safety practices.

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