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## Nurse's Performance And Adverse Health Effects On Nurses Dealing With Chemotherapeutic Agents

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### ABSTRACT

**Background:** Handle and administer of antineoplastic chemotherapy can cause negative health effect among nurses prepare, and administer antineoplastic chemotherapy. **Aims of the study:** explore the nurse's performance and adverse health effects on nurses dealing with chemotherapeutic Agents. **Design:** A correlation descriptive research design. Setting: This study was conducted at three chemotherapeutic units in oncology Institution in Damietta, Port Said general hospital and EL Tadamon hospital. **Sample:** A Purposive sample of 48 nurses, oncology Institution in Damietta (N=41), Port-said hospitals (N=7) in period of 6 months. **Data collection:** Two tools were used for data collection: A Structured self-administered questionnaire and Nurses' performance observational checklist. **Results:** Only 57.9% of the studied nurses had unsatisfactory level of general knowledge, while 52.3% of them had satisfactory level of practice, with regards to the adverse health effect the results shown that 54.8%, 51.6%, 41.9%, 38.7% and 35.5% s inflammation of the skin, fatigue, loss of weight, ulcers in the mouth and hair loss, headache, loss of appetite, change in nail color and changes in menstrual cycle respectively. **Conclusion:** There are statically significant relation between nurses' level of performance and the occupational health hazards. **Recommendations:** periodic educational and training programs to improve nurses' performance regarding use of chemotherapy and protection from its health hazards are needed.

**Key words:** Nurses' Performance, Chemotherapeutic agents, Adverse effects, Knowledge, Practice.

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## **INTRODUCTION**

Antineoplastic chemotherapy drugs are the crucial treatment for cancer patients. It has a curative effect for cancer patients and also is used to palliative cancer patients discomfort such as pain and dyspnea. Many of chemotherapy are known to be carcinogenic, teratogenic and mutagenic to humans. Antineoplastic chemotherapy has systematic effect of all body cells that can be alter both normal and malignant cell division. The negative effect of normal rapid dividing cells can worsen patients health condition and appear of discomfort symptoms such as anorexia, anemia, alopecia all of that can cause negative effects of patients quality of life and response to treatments. Health care professionals have an important role in the preparation, administration, storage and waste disposal of antineoplastic drugs (Zenciroğlu 2011). In Egypt, the preparation and administration of drugs, including chemotherapeutic drugs, in health institutions are the responsibility of nurses. Thus, they are frequently exposed to the toxic effects of chemotherapy (Waheida et al., 2015). Nurses who are in closer and longer contact with the patient compared to other health care professionals also experience more exposure after chemotherapy during the routine care of the patient.

The number of staff potentially exposed to hazardous effect of the chemotherapy drug was more than 5.5 million. Moreover, the wide spread use and complexity of chemotherapy has raised concerns about the risks to health care workers involved in preparing and administering these drugs and/or caring for patients undergoing treatment (Yuan et al., 2012). Recent studies show the increase in the potential risks due to occupational exposure to these drugs. These may include fatigue, loss of appetite, loss of weight, ulcers in the mouth and hair loss, 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 (Khan et al., 2012).

The potential occupational risks for health care professionals may vary due to differences in the frequency and duration of use and individual vulnerability. 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 (Momeni et al., 2013).

Safety measures are important in handling, administration 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 (Marcus, 2014). 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 (Lawson et al., 2012).

### **Significant of the study:**

Although guidelines for chemotherapy administration exist and are maintained by the Oncology Nursing Society and the American Society of Health System Pharmacists, evidence suggests that work environments are still contaminated with chemotherapeutic drugs due in part to poor nursing compliance (Polovich& Clark, 2012). This suggests that a gap may exist between current practice and what is actually practiced in the clinical setting. Nurse's awareness of hazards of chemotherapy is associated with improvement of protective measures practice (Keat et al., 2013).

The combination of nursing knowledge and skills during dealing with chemotherapy aims to assure safe handling to nurse, patient and environment. Poor performance may cause many health hazards for nurses dealing with chemotherapy such as nausea, vomiting, headache, vertigo, hair loss, abdominal pain, and skin and allergic reactions (Unsar et al., 2016).

### **AIM OF THE STUDY**

The aim of this study was to explore the adverse Health Outcomes and the performance of Nurses Dealing with Chemotherapeutic Agents.

#### **Objectives:**

1. Assess nurse's knowledge about safe handling for chemotherapeutic drugs.
2. Assess nurse's practice when dealing with chemotherapeutic drugs.
3. Assess nurse's attitude when dealing with chemotherapeutic drugs.
4. Explore the adverse effects encounter for nurses dealing with chemotherapeutic drugs.
5. Find out the relationship between nurse performance and the health hazards.

### **Research question**

1. What is the level of knowledge among nurses regarding safe handling of chemotherapeutic agents?
2. What is the level of practice of nurses dealing with chemotherapeutic agents?
3. What is the nurse attitude regarding chemotherapeutic agent?
4. What are the adverse effects encountered by nurses as a result of practice while handling chemotherapy?
5. is are the a relationship between nurse performance and the occupational health hazards?

### **SUBJECTS AND METHODS:-**

A correlation descriptive study design was used. Purposive subject of nurses in oncology Institution in Damietta (N=41) and port-said hospitals (Port Said general hospital and ELTadamon hospital) (N=7) was be included in the study. Total number of the study subject was 48 nurses. The data collection took a period from the beginning of January (2017) to the end of June (2017).

#### **Inclusion criteria of the nurse:**

Nurses in research hospital were worked in oncology department at least six months ago, with different ages and years of experience as well as different qualification.

#### **Tools for data collection**

**Two tools were used to collect data of the presents study as follows:**

##### **Tool (I): A Structured self-administered questionnaire:**

This questionnaire was developed by the researcher based on literature review. It was be composed of five parts.

**Part (1):** Socio-demographic data sheet:

It will be include nurses' demographic data such as (age, sex, level of education, Years of experience, marital status ...etc.)

**Part (2):** Nurses' Knowledge Assessment sheet: used to assess nurse's knowledge about chemotherapy treatment, including four main sections:

A)-Section1: It was composed of (15) questions related to nurse's general knowledge about chemotherapy.

B) - Section 2: it was composed of (5) MCQ questions used to assess knowledge about the nurses' role during preparation of chemotherapeutic agents.

C) - Section 3: it was composed of (6) questions used to assess knowledge of nurse during administration of chemotherapeutic agents.

D) -Section 4: it was used to assess knowledge of nurse during disposal and during handling contaminated excrete of chemotherapeutic agents

**Part (3):** It was used to assess availability of Personal protective equipment and nurses adherence to use the PPE through administer of chemotherapy.

**Part (4):** Nurses' attitude toward chemotherapy. This part adopted from (Khan et al., 2012) to assess nurses' attitude toward chemotherapy administration.

**Part (5):** Nurses' chemotherapy adverse effectssection consisted of six items on exposure related

symptoms: fatigue, weakness, hair loss, loss of appetite, dizziness, mouth sores, skin rashes, allergic reactions and menstrual cycle disorders.

**Tool (II): "A performance Observational Checklist"**

It was utilized by the researcher included items about practical skills for safe handling of chemotherapeutics agents and how nurses' actual practice of protective measures during handling and administration of chemotherapeutic drug, adopted from (Ibrahim, 2011). It composed of two parts.

The first part: Reconstitution phase: it composed of 10 steps related to nurses' practice during preparation before administering chemotherapeutic drugs.

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The second part: Implementation phase: was related to nurses' practice during and after administering chemotherapeutic drugs. It includes 37 steps.

## **(II) OPERATIONAL DESIGN**

The operational design included preparatory phase, content validity, pilot study and fieldwork.

### **The Preparatory Phase**

Two tools developed by the researchers were used in the current study utilized the literature review and their performance regarding handling of chemotherapy and adverse health effect in nurses handling and preparing chemotherapy.

### **2. Content Validity**

The tool was tested for its content validity, comprehensiveness and applicability by 7 experts' (3 assistant professors, 4 lecturers) from the medical surgical nursing department in Ain Shams University who reviewed the tools for clarity, relevance, comprehensiveness, understanding and ease for implementation, according to their opinion modifications were applied.

### **Pilot Study**

A pilot study was applied to test the applicability of tools, arrangement items, and estimated time needed for each sheet, the researcher randomly select 10% of staff nurses within the selected criteria, the results of the data obtained from the pilot study helped in modification of the tools; items were corrected or added as needed. Accordingly, modifications were done and the final form was developed. The nurses in the pilot study are excluded from the final subjects of the study.

### **Field work:**

The actual field was started during period from the beginning of January (2017) to the end of June (2017) for data collection. The researcher visited the hospital (three chemotherapeutic units oncology Institution in Damietta and port-said hospitals (port said general hospital and ELTadamon hospital)), three days weekly (at morning and afternoon) shifts (no night shift in this hospital for chemotherapeutic units) to collect the data by using the previous tools. The purpose of the study was explained by the researcher to the oncology nurses who agreed to participate and who had the above

mentioned inclusion criteria in the study. The researcher explained the purpose of the study to the nurses. When nurses agreed, the researcher first meeting with all of the study subjects, and they were given the same instruction. The first phase that was done by the researcher through observation of the studied nurses during actual work. At first, the researcher was observing nurses' practical skills about chemotherapy administration. The time needed to complete the checklist varies ranged between 30-45 mints. Each nurse was observed for 2hours at beginning of each shift for morning shift. Then, the researcher giving them the questionnaire sheet to fill it. This took about 25 to 35 minutes from each nurse. Distribution of the questionnaire sheet was done after the end of morning shift for nurses working at morning shift and was given to the afternoon (evening shift) nurses before starting their work.

### **I. Ethical Considerations:**

The agreement for participation of the subjects was taken after aims of the study have been explained to them. A verbal informed consent was obtained from the nurses to ensure willingness to engage in the study after explaining its purpose. They were informed about their rights to refuse or withdraw at any time with no consequences. The study interventions could not have any harmful effect on participants and they were assured that the information collected would be treated confidentially and used for the research purpose only.

### **II. Statistical design:**

The collected data were categorized, revised, stored, tabulated and analyzed using number and percentage distribution. Statistical analysis was done by computer using Statistical Package of Social Science program (SPSS) package version 16. Proper statistical tests were used to determine whether there was a significant statistical difference between variables of the study.

## **RESULT:**

**Table (1):** shows distribution of the studied nurses according to their demographic characteristics. The study results show that, Mean  $\pm$  SD of age for studies nurses were 28.10 $\pm$ 3.99. About education level, 58.3% had nursing diploma. Concerning to marital status, 85.4% of the studied nurses were married. 45.8% of them had 5<10 years of

experience since graduation. Regarding to years of experience in chemotherapy units, 47.9% of them had 3<5 years of experience.

**Figure (1):** shows Percentage distribution of the studied nurses' knowledge about chemotherapy. 58.3% of the studied nurses had satisfactory level of basic general knowledge during dealing with chemotherapy drugs. While, 73.2% of them had unsatisfactory knowledge about preparation, 55.2% of them had unsatisfactory knowledge about administration of chemotherapy and 61.8% of them had unsatisfactory knowledge about discard.

**Figure (2):** shows percentage distribution of total level of knowledge among the studied nurses dealing with chemotherapy drugs. 57.9% of the studied nurses had unsatisfactory level regarding total scores of knowledge during dealing with chemotherapy drugs.

**Figure (3):** shows percentage distribution of total level of nurses' practice dealing with chemotherapy drugs. 52.3% of the studied nurses had satisfactory level of total scores of practice during dealing with chemotherapy drugs.

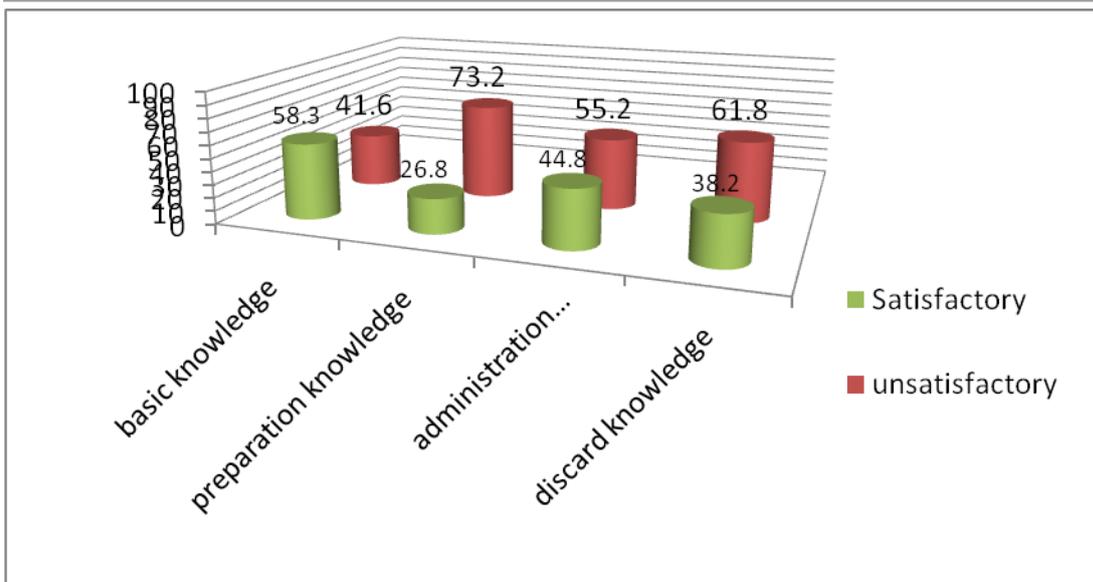
**Table (2):** shows distribution of the studied nurses' attitude during dealing with chemotherapy drugs. 50% of them were strongly disagree giving chemotherapy to patients makes them feel guilty. While, 58.3% agree to inform patients about treatment but it is difficult to help them emotionally and confident in their ability to deal with the complications of chemotherapy, 58.3% strongly agree to make sure that all necessary precautions are taken to ensure that I am not at risk of chemotherapy. Also, 54.2% (Disagree) that chemotherapy prevents communication with patients, 64.6% (Agree) know that when patients are given chemotherapy, they understand as much as they can treatment, 52.1 % (Agree) know enough about chemotherapy to answer patients' questions adequately.

**Table (3):** shows that percentage distribution of signs and symptoms appear on the studied nurses due to dealing with chemotherapy drugs. 54.8% of the studied nurse complaining inflammation of the skin, 51.6% of them complaining exhaustion, 41.9% of them complaining loss of weight, 38.7% of them complaining ulcers in the mouth and blast in the hair, also 35.5% of them complaining headache, loss of appetite, change in nail color and changes in menstrual cycle.

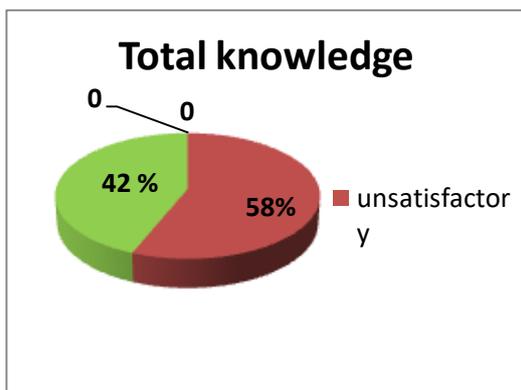
**Table (4):** represent that, there are statistically significant relation between total knowledge, total practice and total attitude at p value < 0.05.

**Table (1):** Socio-demographic characteristics of studied nurses (n=48).

<b>Item</b>	<b>Frequency No=48</b>	<b>Percentage %</b>
<b>Age: Mean ± SD</b>	<b>28.10±3.99</b>	
<b>Min – Max</b>	Min 20- Max 35	
<b>Education:</b>		
Nursing diploma	28	<b>58.3</b>
Nursing technical institute	5	10.4
Health technical institute	15	31.2
<b>Marital Status:</b>		
Single	6	12.5
Married	41	<b>85.4</b>
Widow	1	2.1
<b>Years of experience in chemotherapy unit:</b>		
1<3 years	16	33.3
3<5 years	23	<b>47.9</b>
5 < 10 years	8	16.7
10 and more	1	2.1



**Figure 1:** Percentage distribution of the studied nurses' knowledge about basic chemotherapy knowledge, preparation, administration and discard chemotherapy.



**Table (2):**Number and percentage distribution of the studied nurses attitude during dealing with chemotherapy drugs (No=48).

Item	Strongly agree		Agree		Disagree		Strongly disagree	
	No	%	No	%	No	%	No	%
I did not feel confident in my ability to deal with emergency chemotherapy	6	12.5	6	12.5	17	35.4	19	39.6
I try to avoid patients with bad side effects of chemotherapy	4	8.3	11	22.9	15	31.2	18	37.5
Giving chemotherapy to patients makes me feel guilty.	0	0.0	6	12.5	18	37.5	24	50.0
It is easy to inform patients about treatment but it is difficult to help them emotionally	0	0.0	28	58.3	13	27.1	7	14.6
Chemotherapy prevents communication with patients.	0	0.0	1	2.1	26	54.2	21	43.8
I know enough about chemotherapy to answer patients' questions adequately	4	8.3	25	52.1	19	39.6	0	0.0
I make sure that all necessary precautions are taken to ensure that I am not at risk of chemotherapy	28	58.3	18	37.5	0	0.0	2	4.2
I always feel that I support patients during chemotherapy	23	47.9	23	47.9	2	4.2	0	0.0
I know that when patients are given chemotherapy, they have the right understand as much as they can for their treatment	10	20.8	31	64.6	7	14.6	0	0.0
I am confident in my ability to deal with the complications of chemotherapy	3	6.2	28	58.3	17	35.4	0	0.0

**Table (3):**Number and percentage distribution of signs and symptoms appears on the studied nurses due to dealing with chemotherapy drugs (No=48).

Variables	Before		After		Did not complaining	
	No	%	No	%	No	%
Rotary	2	6.5	4	12.9	25	80.6
Dizziness	2	6.5	3	9.7	26	83.9
Headache	2	6.5	11	<b>35.5</b>	18	58.1
Loss of appetite	2	6.5	11	<b>35.5</b>	19	61.3
Nausea	0	0.0	5	16.1	26	83.9
Loss of weight	2	6.5	13	<b>41.9</b>	16	51.6
Ulcers in the mouth	0	0.0	12	<b>38.7</b>	19	61.3
Inflammation of the skin	0	0.0	17	<b>54.8</b>	14	45.2
Change in body color	0	0.0	4	12.9	27	87.1
Change in nail color	0	0.0	11	<b>35.5</b>	20	64.5
Fall in hair	0	0.0	6	19.4	25	80.6
Blast in the hair	0	0.0	12	<b>38.7</b>	19	61.3
Swelling in the body	0	0.0	2	6.5	29	93.5
Tingling in the limbs	0	0.0	3	9.7	28	90.3
Shivering in the limbs	0	0.0	4	12.9	27	87.1
Exhaustion	6	19.4	16	<b>51.6</b>	15	48.4
Vaginal bleeding	0	0.0	7	22.6	24	77.4
Changes in menstrual cycle	0	0.0	11	<b>35.5</b>	20	64.5
Repeated miscarriage	0	0.0	8	25.8	23	74.2
Premature birth	0	0.0	2	6.5	29	93.5
Born birth defects	0	0.0	4	12.9	27	87.1

**Table (4):** Relationship between total knowledge, total practice and total attitude among studied nurses dealing with chemotherapy drugs.

Items	Total knowledge				X <sup>2</sup>	p-value
	Unsatisfactory		Satisfactory			
	No	%	No	%		
<b>Total practice:</b>						
Inadequate	18	81.8	14	53.8	4.19	.041*
Adequate	4	18.2	12	46.2		
<b>Total attitude:</b>						
Negative	13	59.1	7	26.9	5.07	.024*
Positive	9	40.9	19	73.1		

## DISCUSSION:

Nurses caring for patients receiving chemotherapy require specialized knowledge in order to ensure safety for both patients life and for their own safety of the jobs (Keat et al., 2013). The main role of nurses in the field of oncology is chemotherapy administration which is sensitive domain in oncology nursing where little negligence or mistake may lead to adverse consequences for patients, staff and environment. Literature reveals that, incidence due to lack of specific knowledge and training of the staff in chemotherapy, prescription, preparation and administration (Waheida et al., 2015).

Regarding to sociodemographic characteristics of nurses, The current study indicates that the majority of nurses were female their ages ranged from 20- 35 years in productive age, married and in diploma degree and with an experience in the profession of oncology less than 5 years. The finding of present study also indicates that the majority of nurses have inadequate knowledge about safe handling of chemotherapy and reported health care administrator are negligence about preparing training program which improve their knowledge about safe handling and protect their from adverse health effects (Crannell, 2012&Walton et al., 2012).

The overall finding of the study indicated that more than half of studied nurses showed inadequate level of knowledge about chemotherapy, which could be reflect the lack in

their scientific preparation. Overall, the findings of nurses' knowledge assessment reflect the effectiveness of improvement of knowledge regarding safety measure when preparing and administration chemotherapy through formal and informal education program. Nurses' awareness and knowledge about the handling of cytotoxic drugs remains a concern linked to improvement in safety standards. The higher the nurses' knowledge the more they use the safety measures in their practices (Chaudhary and Karn, 2012 & Jacobson et al., 2012 & Keat et al., 2013).

The present study indicated that about half of the studied nurses have unsatisfactory level of nurses' practice during dealing with chemotherapy drugs and negligence about using personal protective equipment. However, during the skill observation process, the researcher observed that the study participants were not following the international standards for chemotherapy preparation and administration. The available guidelines had many gaps as per international standards and were not being properly practiced at the clinical setting. This finding is in line with Khan et al., (2012) study in the same setting, where she found that chemotherapy preparation and administration was not according to international standards, and recommends that chemotherapy should be prepared by trained pharmacist and administered only by trained nursing staff. Also, Waheida et al., (2015) report that the nurses did not comply with recommended safety behavior (rules and regulations) and have poor actual practices of preparation and administration of chemotherapy.

The justification given by them for their weak skills in the above mentioned areas was high work load, under-staffing, and high patient volume, lack of standardized nursing care procedures or no availability of manual book which contain all nursing procedures in oncology unit, lack of facilities and equipment needed for safe handling when preparing and administration of chemotherapeutic agents. About half of studied nurses stated that inadequate time challenges them from using protective measures, less than half of them stated that increased work load and lack of knowledge is a barrier for using protective measures.

The attitude of the oncology nurses towards chemotherapy administration was assessed through the questionnaire. In the present study, statistical analysis has shown that more than half of the staff nurses has positive attitude. Nurses' attitude originates from their culture and religious beliefs. Long-term plans should be developed to correct these beliefs. Many previous researches similar have shown nurses have positive attitude towards chemotherapy. As in study by Chaudhary study (2016) also shown positive

attitude towards chemotherapy among staff nurses. In contrast, Khan et al., (2012) found that the nurses were inadequately prepared to care for cancer patients and consequently, held negative views about the disease and its treatment.

As regarding signs and symptoms appears on the studied nurses that dealing with chemotherapy drugs, In the present study approximately half (54.8%) of the studied nurse complaining inflammation of the skin, approximately half of nurses (51.6%) complaining exhaustion, 41.9% of them complaining loss of weight, about third of the nurses 38.7% of them complaining ulcers in the mouth and blast in the hair, also 35.5% of them complaining headache, loss of appetite, change in nail color and changes in menstrual cycle, most signs and symptoms appears after more than one year after dealing with chemotherapy drugs. All of these adverse effects may violence nurses quality of life.

Unsar et al., (2016) reported that symptoms, such as dizziness and hair loss, in the nurses who administer antineoplastic agents may be the result of applying insufficient safety precautions Constantinidis et al., (2011) found that the most common symptoms in health personnel who administered antineoplastic drugs were dizziness, nausea, headaches (58.8–59.3%), skin irritation (45.9–47.5%) and allergic reactions (14.9–18.6%). In another study, the most frequent symptoms in nurses who prepared antineoplastic drugs were headaches and skin problems (Kyprianou et al., 2010).

Regarding to correlations between total nurses' knowledge, practice and attitude, there was a statistically significant positive correlation between total nurses' knowledge, total practice and total attitude. This result in the same line with Keat et al., (2013) study, the results of this study indicate a significant improvement of knowledge, attitude and practices among the nurses handling cytotoxic anticancer drugs after a series of interventions. This result in consisted with Khan et al., (2012) who illustrate that, the overall finding of the study indicated that the participants have poor knowledge and skills, however their attitude is good.

## **CONCLUSION:**

Based on the results of the present study, it can be concluded that more than half of studied nurses had unsatisfactory level of knowledge toward chemotherapy drugs and about half of them had satisfactory level of nurses' practice during dealing with chemotherapy drugs. Moreover, more than one third of studied nurses had negative attitude , Also, Occupational exposure from hazardous drugs posed a significant risk to

the studied nurses as symptoms of inflammation of the skin, exhaustion, loss of weight, ulcers in the mouth and blast in the hair, also headache, loss of appetite, change in nail color and changes in menstrual cycle. There are statically significant relation between total knowledge, total reconstitution, total practice and total attitude. Meanwhile, there is no statically significant relation between total knowledge, total implementation and challenges to use protective barriers.

## RECOMMENDATIONS

- Provide in service training to nurses on the proper procedures for handling chemotherapy drugs, wearing PPE, using BSCs, disposing of chemotherapy drugs and spills management.
- Start a medical surveillance program for staff handling chemotherapy drugs.
- Develop workplace procedures book for using and maintaining all equipment.
- Continuous evaluation for nurses' practice and performance feedback on compliance rate of safe handling and administration of chemotherapy to improve their practice.
- Encourage nurses to report all health concerns to their supervisors.

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## أداء الممرضين والآثار الصحية السلبية للممرضين المتعاملين مع أدوية العلاج الكيماوي

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أخصائية تمريض بمستشفى دمياط التخصصي<sup>3</sup>

### الخلاصة

**مقدمة:** أدى الاستخدام الواسع النطاق لأدوية العلاج الكيماوي في علاج السرطان إلى ارتفاع المخاطر الصحية بين الممرضات الاتي يتعاملن مع هذه الأدوية. **الهدف من الدراسة:** استكشاف اداء الممرضات حول التعامل الآمن لأدوية العلاج الكيماوي, تقييم ممارسة الممرضة أثناء التعامل مع العلاج الكيماوي ، سلوك الممرضة تجاه العلاج الكيماوي والآثار السلبية التي قد تواجه الممرضات من التعامل مع العلاج الكيماوي. تصميم البحث: سوف يتم استخدام دراسة ارتباط وصفية. **مكان البحث:** أجريت هذه الدراسة في ثلاث وحدات للعلاج الكيماوي في معهد الأورام في دمياط ومستشفى بورسعيد العام ومستشفى التضامن. **عينة البحث:** 48 ممرضة، (41) من معهد الأورام في دمياط ، و(7) مستشفيات بورسعيد في فترة 6 أشهر. أدوات جمع البيانات: الاداة الاولى استمارة استبيان و استمارة تقييم لملاحظة ممارسات الممرضات. **نتائج الدراسة:** كان 57.9% فقط من الممرضات الخاضعات للدراسة لديهم مستوى غير مرضٍ من المعرفة العامة، فيحين أن 52.3% منهم لديهم مستوى مرضٍ من الممارسة، فيما يتعلق بالتأثيرات الضارة بالصحة أظهرت النتائج أن 54.8% و 51.6% و 41.9% و 38.7% و 35.5% التهاب في الجلد، والتعب، وفقدان الوزن، وقرحة في الفم وفقدان الشعر، والصداع، وفقدان الشهية، وتغير في لون الأظافر والتغيرات في الدورة الشهرية على التوالي. **الخلاصة:** هناك علاقة ذات دلالة إحصائية بين مستوى أداء الممرضات ومخاطر الصحة المهنية. **التوصيات:** هناك حاجة إلى برامج تعليمية وتدريبية دورية لتحسين أداء الممرضات فيما يتعلق باستخدام العلاج الكيماوي والحماية من المخاطر الصحية.

**الكلمات المرشدة:** أداء الممرضات، العلاج الكيماوي، الآثار السلبية، المعرفة، الممارسة .