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Nurses' Knowledge and Practices regarding Detaction and Management of Acute Drug Poisoning at Cairo University Hospitals

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Abstract

Background: Detection and management of poisoning constitutes a core emergency nursing competency. Nurse's knowledge and practice play important roles in provision of supportive care to decrease morbidity and mortality secondary to poisonings. **Aim of the study:** to assess nurses' knowledge and practice regarding detection and management of acute drug poisoning. **Research Design:** A descriptive exploratory design was utilized.

Research questions: a) what is the nurses' level of knowledge regarding detection and management of acute drug poisoning **b)** what is the nurses' level of practice regarding detection and management of acute drug poisoning **Setting:** The National Center for Clinical and Environmental Toxicology affiliated to Cairo University Hospitals **Sample:** A convenience sample of 30 nurses with a minimum one year of experience. **Tools of data collection:** Three tools were developed and utilized to collect data pertinent to the current study: **tool 1:** Nurses' sociodemographic data sheet, **tool 2:** Acute drug poisoning nurses' interview questionnaire and **tool 3:** Acute drug poisoning nurses' practice observational checklist. **Results:** All the studied sample (100%) had unsatisfactory knowledge and practice level (<75%) regarding detection and management of acute drug poisoning with a total mean knowledge and practice scores of (36.86 ± 2.046 & 28.20 ± 2.51) respectively. No significant correlations were found between age, years of experience, total knowledge scores and total practice scores. No significant statistical difference was found in the total mean practice scores in relation to socio demographic characteristics. A high significant statistical difference was found in the mean practice scores in relation to qualifications **Conclusion**: critical care and emergency nurses dealing with poisoned patients have inadequate knowledge and practice regarding detection and management of acute drug poisoning **Recommendations**: Replication of this study on a larger sample from different geographical locations in Arab Republic of Egypt, establishment of continuing education programs including evidence based guidelines to improve nurses' knowledge and practice regarding detection and management of acute drug poisoning.

Keywords: Nurses' knowledge, Nurses' practice, acute drug poisoning, detection, management.

Introduction

A cute drug poisoning is one of the life threatening conditions therefore, the critical care and emergency nurses play important roles in their care and management of patients with acute drug poisoning that consists of four elements: initial life support, decontamination, in some cases antidotal therapy and enhanced elimination. the initial life support consists of airway management and correction of circulatory status. Protecting the airway is essential in order to prevent aspiration and respiratory insufficiency due to lowered consciousness. Arrhythmias and hemodynamic compromises are corrected and managed as would be the case with any patient in critical condition (Bohnert, Fudalej & Ilgen, 2010)

Significance of the study

Poisoning is a common cause of morbidity and mortality worldwide**,** with several million episodes reported annually. Acute drug poisonings account for nearly one half of all poisonings reported (Frithsen, Simpson, 2010)

One half million people die each year as a result of various kinds of poisoning (WHO,2011). In Egypt, by reviewing the statistical data of The National Center for Clinical and Environmental Toxicology, Cairo University Hospitals, (2013), it was revealed that the percentages of patients who were admitted for Acute

Drug Poisoning was 51% in the year 2011, 53% in the year 2012 and 54.9% in the year 2013.

It has been observed through work as a clinical instructor in The National Center for Clinical and Environmental Toxicology that many patients are admitted with acute drug poisoning and nurses don't have the ability to early detect poisoning manifestations and to handle these patients or to provide the initial resuscitative measures. This raised the researcher's interest to assess nurses' knowledge and practices regarding detection and early management of this group of patients.

In addition, the current study will be carried out to construct a database about the problem of acute drug poisoning and the role of the nurse in early detection and management. As well obtained data can be utilized by other health professionals in the future plan of care for such group of patients. Also it might generate an alternatives and motivation for further researches into the area of detection and management of acute drug poisoning.

2-Aim of the study

The aim of this study is to assess the nurses' level of knowledge and practice regarding detection and management of acute drug poisoning at Cairo University Hospitals.

3-Research questions

To fulfill the aim of this study, two research questions were formulated:

3.1) What is the nurses' level of knowledge regarding detection and management of acute drug poisoning at Cairo university hospitals?

3.2) What is the nurses' level of practice regarding detection and management of acute drug poisoning at Cairo university hospitals?

4-Subjects and Methods

4.1.Research Design:

A descriptive exploratory design was utilized in the current study.

4.2.Setting:

The current study was carried out at The National Center for Clinical and Environmental Toxicology which is affiliated to Cairo university hospitals. It consists of two critical care units and one emergency unit. The first critical care unit (females' unit) is located at the 2nd floor. It consists of six I.C.U rooms; each one contained two beds. The second critical care unit (males' unit) is located at the 3rd floor. It consists also of six I.C.U rooms; each one contains two beds. The emergency unit is located at the ground floor. It consists of two rooms; each one contains two beds. The nurse-patient ratio ranged from 1:2 - 1:3.

4.3.Sample:

A sample of convenience including all nurses working in The National Center for Clinical and Environmental Toxicology who are willing to participate in the study

4.4.Tools:

Three tools for data collections were utilized; it included:

4.4.1 .Tool 1:- Socio-demographic data sheet: It covered data related to age, sex, educational level, and years of experience of nurses in critical care and emergency units.

4.4.2 .Tool 2:- Acute drug poisoning nurses' knowledge interview questionnaire: it was designed by the researchers :-To assess nurses' knowledge about detection and management of acute drug poisoning . It was designed to collect data related to causes of acute drug poisoning, assessment and physical examination, initial nursing management, etc. It consists of 65 questions. Eight domains are included (Basic knowledge (definitions and drug categories), Causes of Poisoning,

Types of poisoning, Drug Antidote, Assessment of the poison, Nursing diagnosis, Signs and Symptoms and Nursing Intervention). One point was given to each right answer and zero to the wrong answer. Scores of less than 75%, (48.75) were considered as having unsatisfactory knowledge level and scores of 75 % -100% were considered as having satisfactory knowledge level.

4.4.2. Tool 3: Acute drug poisoning nurses' practice observational checklist: It was designed to assess nurses' practices related to detection and management of acute drug poisoning. It consists of nine domains (initial assessment and immediate intervention (ABCD), assessment of neurological status, assessment of safety status, assessment of the poison, nursing intervention in ingested poisoning, and nursing intervention in inhaled poisoning, nursing intervention in absorbed poisoning, and nursing intervention in injected poisoning and evaluation/outcomes of the poisoned patient). One point was given to each (Done) performance and zero was given to each (Not Done) performance .The total scores of this sheet are 100%. Those who got scores less than 75%, (37.5) were considered as having unsatisfactory performance level. Scores between 75% - 100% were considered as satisfactory performance level.

4.5. validity and reliability of tools

Content validity was done to identify the degree to which the used tools measured what was supposed to be measured. The developed tools were examined by a panel of three medical and critical care nursing experts to determine whether the included items were clear and suitable to achieve the aim of the current study. As well, tools reliability was calculated using SPSS with a Cronbach's Alpha value of 0.85 for nurses' knowledge interview questionnaire and a value of 0.84 for nurses' practice observational checklist indicating reliability of the developed data collection tools.

4.6. Pilot Study

A pilot study was carried out on 5 nurses, to test feasibility, objectivity, and applicability of the data collection tools. Carrying out the pilot study gave the investigator experience to deal with the included subjects, and to be familiar with the data collection tools. Based on results of the pilot study, no modifications were done and the five nurses of the pilot study were included in the study sample.

5-Protection of Human Rights

An official permission to conduct the study was obtained from the ethical committee and hospital directors. Participation in this study was voluntary. Each involved subject was informed about the purpose, procedure, benefits, and nature of the study, and that he/she had the right to withdraw from the study at any time without any rationale, then written consents were obtained. Subjects were informed that obtained data will not be included at any further researches without a second consent. Confidentiality and anonymity of each subject were ensured through coding of all data and protecting the obtained data. Subjects were reported that obtained data will not affect their annual appraisal.

6-Procedure

The current study was conducted on two phases: the designation phase and implementation phase.

6.1. designation phase:

It was concerned with construction and preparation of different data collection tools. This in addition to obtaining managerial

arrangement to carry out the study, where the investigator prepared formal requests to the directors of The National Center for Clinical and Environmental Toxicology. The purpose and the nature of the study were explained to gain their acceptance and support. This in addition to carrying out the pilot study for a period of two months.

6.2. Implementation phase:

It was carried out after obtaining official permissions from the research committee and from all nursing staff in the selected units to proceed in the current study. Data were collected over a period of 6 months starting from September 2013 to February 2014. The researcher visited the selected setting on daily basis. Involved nurses were informed individually about the purpose and nature of the study and the researcher obtained written consents from those who accepted to participate in this study. The average number of nurses who answered the questionnaire was 2-3 nurses per day. Answering questions of (tool 1& 2) took about 20-30 minutes from each nurse. Each session lasted about 3- 4 hours. Then the researcher checked each questionnaire after completing the data, to be sure that no missing information were present. Concerning the observation of nurses' practice, it was carried out in the day shifts during their practice of different nursing care skills utilizing tool (3). Participant observation was used so that the nurses did not notice that they were observed during their practice, since the researcher was normally present in the study unit as a clinical instructor. Three nurses were observed in each shift. Each session lasted about 3- 4 hours. Each nurse was observed on three different occasions while performing each procedure of the observation checklist. Obtained data were converted into numeric data, and the average of the three observations was calculated.

7-Results

Table (1) clarifies that most of the studied sample were females, at the age group of 21 - 40 years with a mean age of 35.37 $\pm$ 10.17, married, had diploma nursing education, and work as staff nurses in percentages of (76.7%, 70%,76.7%, 90% & 83.3%) respectively. Concerning years of experience, more than half (56.7%) of the studied sample had (5-10) years of experience. All (100%) of the studied sample did not receive any training courses about nursing managements of patients with poisoning.

Figure (1), all the studied sample (100 %) had unsatisfactory knowledge level (<75%) regarding detection and management of acute drug poisoning.

Table (2) shows that, the involved nurses provided the correct answers in relation to types of poisoning, nursing diagnosis, drug antidote, basic knowledge, signs & symptoms, causes/ pathophysiology of poisoning in percentage of (90%, 77%, 70%, 66%,66% & 57%) respectively, with subtotal mean knowledge scores of (2.20 $\pm$ 0.85, 11.00 $\pm$ 0.79, 4.96 $\pm$ 0.49, 3.33 $\pm$ 0.55, 3.33 $\pm$ 0.55, and 1.77 $\pm$ 0.43) respectively. However, 60% provided incorrect answers in relation to nursing intervention with a subtotal mean knowledge score of 8.76 $\pm$ 0.79 and a total mean knowledge score of 36.86 $\pm$ 2.046, indicating unsatisfactory knowledge level.

Figure (2), all of the studied subjects had unsatisfactory practice level (less than 75%) regarding detection and management of acute drug poisoning.

Table (3) shows that, the most frequently done actions were assessment of the poison, nursing interventions for: ingested poisoning, injected poisoning and inhaled poisoning in percentages of (83%, 80%, 67% & 63%) respectively, with

subtotal mean practice scores of (5.44 ± 0.627, 5.06 ± 0.57, 3.67 ± 0.060 & 4.06 ± 0.253) respectively. However, the most frequently not done actions were assessment of the safety status, initial assessment, and immediate intervention (ABCD), and assessment of neurological status, in percentages of (97%, 67% & 60%) respectively, with subtotal mean practice scores of (0.72 ± 0.176, 6.35 ± 0.75 and 1.70 ± 0.134) respectively and a total mean practice score of 28.20 ± 2.51, indicating unsatisfactory practice level.

Table (4) displays no correlations between ages, years of experience, total knowledge, and total practice scores.

Table (5) shows no significant statistical difference in the mean total knowledge scores in relation to age category, gender, marital status , years of experience, job category and qualifications (t/F : 0.076, 0.330, 0.402, 0.946, 0.393 & 0.768) respectively.

Table (6) displays no significant statistical difference in the mean total practice scores in relation to age category, gender, marital status, years of experience and job category (t/F: 0.583, 0.222, 1.897, 1.066 &.191) respectively. However, the mean practice scores differed significantly in relation to qualifications (t = 1.383 at P ≤ .004).

Table (1): Frequency Distribution of Studied Sample as Regards to Socio-demographic Characteristics (N=30).

	No	%
Gender		
Female	23	76.7 %
Male	7	23.3 %
Age (years)		
<30	12	40 %
30-40	9	30 %
41-50	6	20 %
>50	3	10 %
X ± SD	35.37 ± 10.17	
Marital status		
Married	23	76.7 %
Single	7	23.3 %
Qualifications		
Technical Institute	3	10 %
Diploma (3 years)	27	90 %
Job Categories		
Supervisor / Head Nurse	5	16.7 %
Staff nurse	25	83.3 %
Work Experience		
<5	13	43.3 %
5-10	17	56.7 %
Attended Training Courses		
Yes	0	0 %
No	30	100 %

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Figure (1): Percentage Distribution of the studied sample as Regards to Knowledge Level about Detection and Management of Acute Drug Poisoning, (N=30).

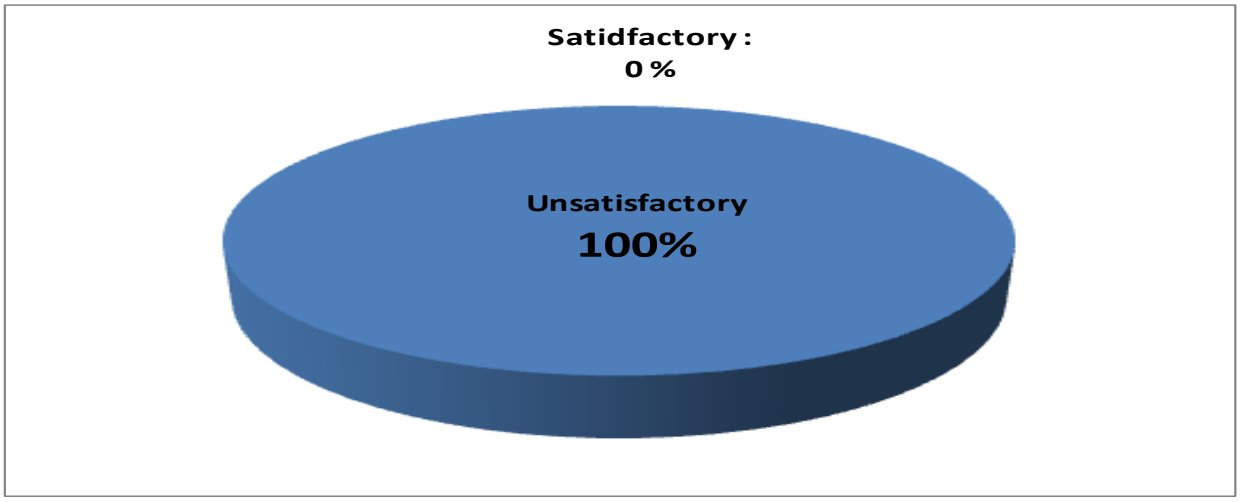

Table (2): Frequency Distribution of the Studied Sample Total & Subtotal Knowledge Scores Regarding Detection and Management of Acute Drug Poisoning (N=30).

Knowledge Assessment Domains	Correct Answer		Incorrect Answer		N	Total %	X±SD
	No.	%	No.	%			
1. Basic knowledge (definitions and drug categories)	20	66	10	34	30	100%	3.33 ± 0.55
2. Types of poisoning	27	90	3	10	30	100%	2.20 ± 0.85
3. Causes & Pathophysiology of poisoning	17	57	13	43	30	100%	1.77 ± 0.43
4. Signs and symptoms	20	66	10	34	30	100%	3.33 ± 0.55
5. Drug antidote	21	70	9	30	30	100%	4.96 ± 0.49
6. Assessment of the poison	15	50	15	50	30	100%	2.96 ± 0.72
7. Nursing diagnosis / Detection	23	77	7	23	30	100%	11.00 ± 0.79
8. Nursing intervention	12	40	18	60	30	100%	8.76 ± 0.79
Total X±SD	36.86 ± 2.046						

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Figure (2): Percentage Distribution of the Studied Sample according to Practices Levels Regarding Detection and Management of Acute Drug Poisoning (N=30).

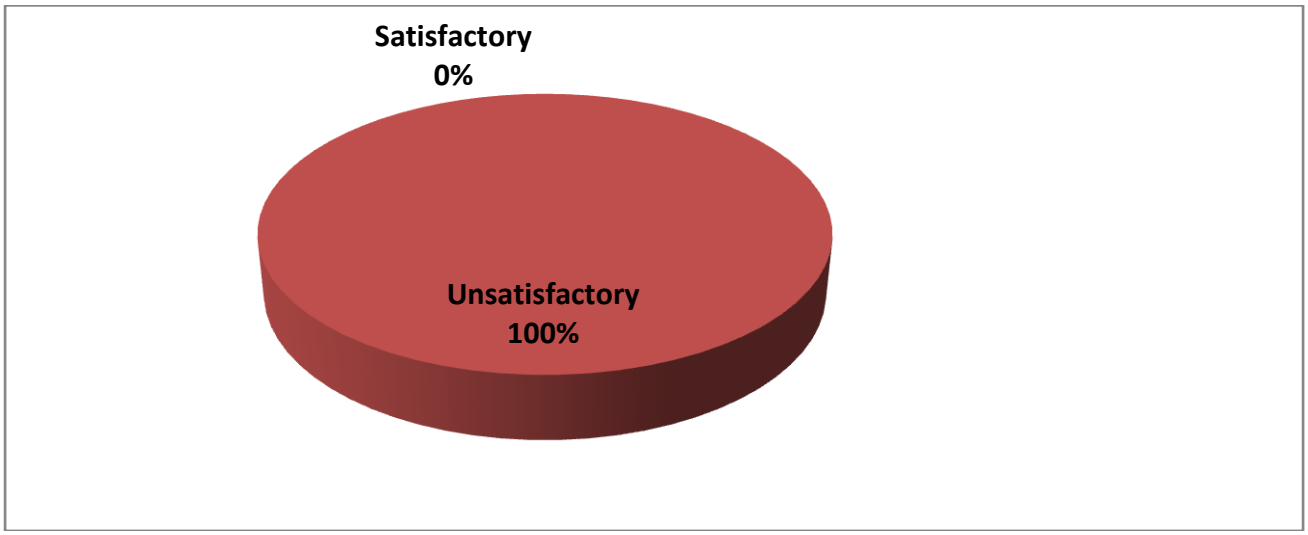

Table (3): Frequency Distribution of the Studied Sample as Regards to Total & Subtotal Practice Scores in relation to Detection and Management of Acute Drug Poisoning (N=30).

Practice Assessment Domain	N=30						Subtotal & total X±SD
	Done		Not Done		Total		
	No.	%	No.	%	N	%	
1. Initial assessment and immediate intervention (ABCD)	16	34	14	67	30	100	6.35 ± 0.75
2. Assessment of neurological	12	40	18	60	30	100	1.70 ± 0.134
3. Assessment of safety status	5	3	25	97	30	100	0.72 ± 0.176
4. Assessment of the poison	26	83	4	17	30	100	5.44 ± 0.627
5. Nursing intervention in ingested poisoning	24	80	6	20	30	100	5.06 ± 0.57
6. Nursing intervention for inhaled poisoning	23	63	17	37	30	100	4.06 ± 0.253
7. Nursing intervention for absorbed poisoning	17	50	13	50	30	100	2.43 ± 0.61
8. Nursing intervention for injected poisoning	18	67	12	34	30	100	3.67 ± 0.060
9. Evaluation / outcomes of the poisoned patient	18	0	12	34	30	100	1.13 ± 0.34
Total X±SD	28.20 ± 2.51						

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Table (4): Correlation between Socio- demographic Characteristics of the Studied Sample, Total Knowledge and Total Practice Scores (N=30).

		Age	Experience	Total	Total Practice
Age	Pearson Sig. (2-tailed)				
Years of Experience	Pearson Sig. (2-tailed)	.259 .168 NS			
Total Knowledge Scores	Pearson Sig. (2-tailed)	.003 .989 NS	.052 .785 NS		
Total Practice Scores	Pearson Sig. (2-tailed)	.070 .714 NS	.116 .541 NS	.035 .855 NS	

NS: Not Significant.

Table (5): Comparison of Total Mean Knowledge Scores in Relation to Socio demographic of the Studied Sample (N = 30)

Variables	X ± SD	t/F	p/value
Age category			
21 - 30 years	37.08 ± 1.50	0.076	0.973 NS
31- 40	36.66 ± 2.50		
41-50	36.83 ± 1.60		
51 – 60	36.66 ± 4.041		
Gender			
Male	36.77 ± 2.29	0.330	0.744 NS
Female	36.33 ± .577		
Marital Status			
Married	36.78 ± 2.035	0.402	0.691 NS
Single	37.14± 3.559		
Years of Experience			
Less than 5 years	36.46 ± 2.47	0.946	0.352 NS
5-10 years	37.17 ± 1.667		
Job category			
Staff nurse	36.80 ± 1.87	0.393	0.697 NS
Head nurse	37.20 ± 3.033		
Qualifications			

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Diploma	36.96 ± 2.00	0.768	0.449 NS
Technical Institute	36.00 ± 2.64		

*Significant at P ≤ 0.05 NS: Not Significant.

Table (6) Comparison of Total Mean Practice Scores in Relation to Socio demographic of the Studied Sample (N = 30).

Variables	X ± SD	t/F	p/value
Age category			
21 - 30	28.66 ± 2.72	.583	.840 NS
31- 40	28.29 ± 2.76		
41-50	26.83 ± 2.23		
51 – 60	28.77 ± 0.76		
Gender			
Male	28.23 ± 2.56	.222	.826 NS
Female	27.88 ± 2.50		
Marital Status			
Married	27.73 ± 2.47	1.897	.068 NS
Single	29.71 ± 2.17		
Years of Experience			
Less than 5 years	27.64 ± 2.61	1.066	.296 NS
5-10 years	28.62 ± 2.43		
Job category			
Staff nurse	28.24 ± 2.62	.191	.850 NS
Head nurse	28.00 ± 2.13		
Qualifications			
Diploma	28.61 ± 2.29	1.383	.004*
Technical Institute	24.44 ± 0.50		

8-Discussion

The current study revealed that, more than two third of the studied sample was females. This finding is in agreement with that of Abudahi, Fekry & Elwahab, (2012), who conducted a study over 109 nurses at El-Manial University Hospital and 220 nurses at new Kasr El-aini Teaching Hospital, and revealed that, the majority of nurses were females. As well John, Arifulla, Cheriathu & Sreedharan, (2012) carried out a study at a tertiary care hospital at Ajman, and United Arab Imarets, revealed that, the vast majority of respondents were females.

In this regards, Jeanne, (2014) revealed that, nursing in Egypt is primarily a female occupation and very few men are admitted to nursing programs in the university sector. Females continue to dominate the profession and men are still a minority among those who practice nursing. Men comprised 10.2% of the registered nursing personnel in UK (Oxtoby, 2003), and just 5.0% of the registered nurses in the USA (Needleman et al. 2002 and Romem and Anson, 2005), while in Egypt, men comprise 9.22% of the registered nursing personnel (Ministry of Health and Population, 2013).

As well, the current study revealed that more than two thirds of the studied sample was young adults. This finding is agreement with that of John, Arifulla, Cheriathu & Sreedharan, (2012) who found that respondents' ages ranged from 20 to 45 years. In addition, Yaakup, Eng, & Shah, (2014) conducted knowledge and attitude survey amongst nurses in a tertiary care in Malaysia and revealed that, the majority of participants were younger than 40 year of age. According to Erik Erikson's stages of human development, a young adult is generally a person in the age range of 20 to 40.Young adulthood can be considered as the healthiest time of life. Biological function and physical practice reach their peak from 20–35 years of age. Young adulthood is filled with avid quests for intimate relationships and other major commitments involving career and life goals. This refers to the ability of the studied sample to learn and modify their practice through training and continuous education (Kolb, 2008).

This is of special concern especially where the majority of the studied samples had diploma degree. This finding is in agreement with that of Eldakhakhny, Mohamed & Helaly,(2005), who carried out a study at the Emergency Department in Zagazig University Hospital, and revealed that the majority of nurses were diploma nurses. In this regards the nursing syndicate revealed that 240,000 nurses in Egypt are registered at the nursing syndicate, of these 95% are diploma and technical institute nurses (about 228,000) and 5% (about 12,000) are bachelor degree nurses (Egyptian Nursing Syndicate, 2012).

Consequently, the current study revealed that, more than one third of the studied sample had less than five years of experience and the other half had five -ten years of experience. This finding is in concordance with the study of Abudahi, Fekry & Elwahab, (2012), who found that, more than one third of nurses had experience of more than 15 years, however, the least percent of nurses had years of experience ranged from one to less than five years.

In this regards, Rutto, Mwaura, Chepchirchir, & Odero, (2012) conducted a study about nurses' knowledge, attitude and practice on the initial management of acute poisoning among adult casualties, and revealed that, nurses with years of experience ranging from five - nine years had higher mean scores than those with experience below five years and above ten years. As well, in agreement with results of

the current study was that of John, Arifulla, Cheriathu & Sreedharan, (2012) who found that, nurses' years of experience ranged from one to eighteen years.

The current study also revealed that inspite of having unsatisfactory knowledge level (in general) regarding detection and management of acute drug poisoning, the studied nurses provided the right answer in relation to types of poisoning, nursing diagnosis, drug antidote, and basic knowledge regarding definition, and signs & symptoms of acute drug poisoning. However, knowledge deficit were found in areas related to causes of poisoning, assessment of the poison and nursing interventions for detection and management of acute drug poisoning. These findings are in agreement with that of Hammam, Abd-ElGhany, Ibrahim & Mahmoud, (2000) who studied "assessment of nurses' knowledge about accidents' prevention among elderly in Assiut governorate, and revealed lack of nurses' knowledge about acute drug poisoning as a cause of accidents. Also a study conducted by Hanafi, Hayatshahi & Gholami, (2012) about Knowledge, attitudes and practice of nurse regarding adverse drug reaction reporting, and revealed that, the majority of nurses had never reported adverse drug reactions.

Consequently, Vargas & Soares, (2014) conducted a study about patterns of alcohol use and related issues: analysis of nurses' knowledge, and revealed that, the largest deficit of knowledge was in the recognition of complications of alcohol use, suggesting that continuing education courses should emphasize these aspects, since complications are important aspects of nursing practice. As well, Eldakhakhny, Mohamed & Helaly,(2005) revealed that, the majority of nurses had poor knowledge about the importance of instruction about poisoning prevention. In addition, Abidi, Ahmad, Gupta, Rizvi & Singh (2014) evaluated knowledge, attitude and practice of pharmaco-vigilance and adverse drug reaction reporting among the prescribers and nurses in a tertiary care teaching hospital of Northern India, and revealed overall lack of knowledge about pharmaco-vigilance and adverse drug reaction reporting.

Also, Radhakrishna, Nagarajan, Vijayanandhan & Ponniah, (2014) studied Knowledge, attitude and practice towards disposal of medicines: a qualitative study among health care professionals in South India, and revealed lack of knowledge about, awareness of improper disposal of medicines and its consequences suggesting a need for information, education, training and legislation. However, Rehan, Sah & Chopra, (2012) had a contradictory finding where he compared knowledge, attitude and practices of resident doctors and nurses on adverse drug reaction monitoring and reporting and revealed that, resident doctors and nurses had adequate knowledge. As well, Das, Chinchansur & Mohanty, (2014) studied adverse drug reaction monitoring, reporting and importance among experienced doctors, interns and nursing staff in a tertiary care centre, and revealed that, about half of the studied nurses had adequate knowledge.

Low nurses' level of knowledge in the current study "from the researcher's point of view" may be related to lack of training, absence of continuous supervision and evaluation. Also, it may be due to unavailability of hospital policy or standard guidelines for detection and management of acute drug poisoning and absence of multidisciplinary team (Nurses- Physician- Pharmacist) cooperation when dealing with cases of acute drug poisoning. Other reasons may be related to work overload, lack of nurses' incentives to improve their knowledge and lack of the desire to update knowledge especially among those who are working in ICUs and emergency units for several years.

The current study also revealed that inspite of having unsatisfactory practice level (in general) regarding detection and management of acute drug poisoning. The

studied sample carried out certain actions such as assessment of the poison (time of exposure, the amount of substance involved and the duration of exposure), nursing intervention for ingested poisoning (administer activated charcoal, drug antidote, and water, or milk in cases of corrosives), nursing intervention for injected poisoning (assess for the type and amount of the material/drug injected and didn't administer high flow oxygen) and nursing intervention for inhaled poisoning (initiate cardiopulmonary resuscitation if required and administer 100% oxygen, Prevent chilling by wraping the patient in blankets, loosen all tight clothes and keep the patient as quit as possible). However, they didn't assess the patient's safety status, didn't make initial assessment and didn't assess the patient's neurological status. This low practice levels "from the researcher point of view", may be related to low knowledge level and loss of continuous education and training courses.

In agreement with the current study's findings was that of Eldakhakhny, Mohamed & Helaly,(2005) who revealed that the majority of nurses did not assess the central nervous system (CNS) function at all, and did not provide health care instructions regarding acute drug poisoning. As well, Hanafi, Hayatshahi & Gholami, (2012) revealed that, the majority of nurses had never reported adverse drug reactions. Also Rehan, Sah & Chopra, (2012) reported the need to improve resident doctors' and nurses' practices regarding adverse drug reactions.

In this regards, Rutto, Mwaura, Chepchirchir & Odero (2012) revealed that nurses managing poisoned casualties sometimes fail to assess, make appropriate diagnosis, plan, intervene and evaluate accordingly, and sometimes failed to check patients' respiration rate and rhythm, pulse rate, recognize distressed patients, take appropriate patients' history and perform evidence based interventions. Nurses' lack of practice was attributed to lack of attending training courses, lack of continuous education, and nursing shortage. However John, Arifulla, Cheriathu & Sreedharan, (2012) had contradicting findings where most of the studied nurses had observed adverse drug reactions during their nursing practice, and reported data to the concerned doctors.

The current study revealed no correlations between age, years of experience, total knowledge scores, and total practice scores regarding detection and management of acute drug poisoning. This finding is supported by that of Eldakhakhny, Mohamed & Helaly,(2005) who revealed a non-significant correlation between nurses' qualification, years of experience and total practice scores. Conversely, Rutto, Mwaura, Chepchirchir & Odero (2012) revealed that socio demographic of nurses such as level of education, gender, age, years of experience and lack of attending training courses impacted the initial management of acute poisoning in diverse ways. However, higher level of nursing education, experience, giving training courses regarding emergency care enhanced the knowledge and practice of nurses regarding initial management of poisoning.

Unexpectedly, the current study revealed that there is a high significant statistical difference in the mean practice scores in relation to qualifications. Diploma nurses' mean practice scores were higher as compared to technical institute nurses, indicating high significant statistical difference. This from the researcher's point of view could be related to having approximately two thirds of diploma nurses in the current study with years of experience ranged from five -ten years. This could be the cause of frequent contact with different poisoned patients which can enhance their manual skills, and so, increase their experience.

However, Rutto, Mwaura, Chepchirchir & Odero (2012) revealed a contradicting finding, where nurses with higher professional qualifications had higher

mean scores as compared to ones with lower professional qualifications and the majority of nurses needed training on the management of acute poisoning. So, a special emphasis is required to improve critical care and emergency nurses' knowledge and practice regarding detection and management of acute drug poisoning.

9-Conclusion

Based on the finding of the current study; it can be concluded that critical Care and emergency nurses in the current study have inadequate knowledge and practice scores regarding detection and management of acute drug poisoning. These finding are challenging to the practice of nursing in the area of detection and management of acute drug poisoning where nurses are required to have evidence based knowledge and practice which enable nurses to provide life saving interventions to prevent complications of acute drug poisoning. Inspite of having (in general) unsatisfactory knowledge and practice, nurses were found to have satisfactory knowledge and practice regarding certain aspects of care for patients with acute drug poisoning. So, there is a need to emphasize and enhance what nurses know and can do and provide them with the required knowledge and skills necessary for detection and management of patients with acute drug poisoning.

10-Recommendation

Based on findings of the current study, the followings are recommended:

- Strict observation of nurses' practice in relation to detection and management of acute drug poisoning.
- Availability of log book to document nurses' practice of procedures required for detection and management of acute drug poisoning.
- Conduction of periodic training sessions to improve nurses' practices about detection and management of acute drug poisoning.
- Availability of written guidelines, booklets, and posters about detection and management of different cases with acute drug poisoning.
- Establishment of continuing educational programs including evidence based guidelines to improve nurses' knowledge and practice regarding detection and management of acute drug poisoning.

- Nursing curriculum must include theoretical and practical sessions about acute drug poisoning for different nursing categories (diploma – technical-bachelor).

- <u>Recommendations for further researches:</u>
  - Replication of the study on a larger probability sample from different geographical locations in Egypt.
  - Study the impact of a designed nursing intervention protocol about detection and management of acute drug poisoning on patients' outcome .

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