Effect of Educational Guidelines about The First 24 Hours Nursing Interventions for Poisoning on Nurses' Performance and Patients' Health Outcomes

Nora Fares Mohamed[1], Shaimaa Magdy Abdulla[2] and Rasha Fathy Mohamed[3]
(1,2) Lecturer of Medical Surgical Nursing, Faculty of Nursing, Benha University, Egypt and (3) Assistant Professor of Medical Surgical Nursing, Faculty of Nursing, Benha University, Egypt

Abstract

Context: Poisoning is considered as a major cause of morbidity and mortality worldwide as patients admitted to hospital in a critical condition to save their life as soon as possible regardless of the type and quantity of the poison. **Study aim:** To evaluate the effect of educational guidelines about the first 24-hour nursing interventions for poisoning patients on nurses' performance and patient's health outcomes. **Methods:** A quasi-experimental research design (pre/post test) was used. **Setting:** Study was conducted in poisoning control center at Benha university hospital, Qualyubia, Egypt. **Sample**: A convenience sample of (200) patients and (41) nurses were recruited in this study. **Tools:** Four tools were used; **(I)** Self-administered nurses' knowledge questionnaire, **(II)** nurses' practice observational checklist **(III)** nurses' attitude questionnaire**, (IV)** patient' health outcomes assessment questionnaire. **Results:** There was highly statistically significant improvement in total mean score of nurses' knowledge, practice, and attitude regarding care of poisoning patients within the first 24 hours throughout post guidelines implementation observed as $p < 0.001$ and shows that, before guidelines implementation, (48.5%) of patients had poor treatment outcomes. On the other hand, (81%) of them experienced good outcomes after guidelines implementation. **Conclusion:** The educational guidelines effectively improved nurses' knowledge, practices, and attitude as there was highly statistically significant correlation between nurse's total knowledge, practice, and attitude scores post guidelines implementation than before observed with $p \leq 0.001$. In addition, patients experienced improved health outcomes post guidelines than before. **Recommendations:** Periodic in-service training should be provided to nursing staff to enhance their performance and improve patient' care quality.

Keywords: First 24 hours interventions, Health outcomes, Nurses' performance, poisoning patients.

Introduction:

Poisoning is considered as a common reason for emergency department admissions and for prolonged hospitalization as well as being a cause of both morbidity and mortality in many parts of the world. Poisoned persons may be rushing into hospitals in large counts with different toxic substances within various intervals of poisoning which may be immediately or later. Hence, emergency teams should have proper knowledge and skills to perform emergent assessment and care to save victim' life and ensure optimal health outcomes (**Allam et al., 2021).**

Poison is a substance that certainly causes harm or dysfunction of specific organs when entering the human body through ingestion, inhalation, touching, or injection by a variety of medications, chemicals, venoms, or gases. This affects multiple body systems producing numerous and non- specific manifestations. Acute poisoning patients have highly variable clinical presentations that make diagnosis difficult **(Khatab et al., 2024).**

Clinical presentation of acute poisoning includes neuromuscular and cerebral signs such as dizziness, convulsion, delirium and coma. Furthermore, respiratory and cardiovascular signs may appear such as cyanosis, coughing, wheezing, breathlessness, arrhythmia and hypoventilation. In addition, purpura and sweating can also occur. So, Initial interventions should be focused on acute stabilization and supportive care, prevention of poison absorption, use of antidote wherever is indicated, and enhancement of elimination techniques **(Saeed & Hussein, 2022)**.

The toxicology nurse is considered the first staff member who deals with patients who have been poisoned. Therefore, medical staff should be aware of using universal measures to protect themselves during management of those patients followed by emergent interventions such as resuscitation and stabilization, toxic substance diagnosis, therapeutic management involving decontamination, enhanced elimination of absorbed toxins and antidotes. Finally, psychosocial interventions and supportive care must be done under physicians' supervision **(Shehata et al., 2023).**

Initially, emergency nurses should follow the primary assessment approach (ABCD) including airway, breathing, circulation and disability evaluation to maintain a protected airway, adequate ventilation and hemodynamic stability. During initial stabilization nurses are responsible for obtaining proper history and collecting data as possible regarding the nature of the toxic substances, the degree of exposure and the time since exposure through asking the patient or family, obtaining a sample from poisonous substances and performing detailed physical examination **(Mohamed et al., 2023).**

Through correct identification of poisonous substance, the nurse should assist in decontamination procedures such as gastric lavage, administering activated charcoal, whole bowel irrigation or enhanced elimination by using multiple activated charcoals, urine alkalization or extracorporeal elimination. Furthermore, the nurse is responsible for assessing vital signs, fluid and electrolytes, acid –base status, monitoring and treating secondary complication that result from delayed effects of poisoning, making a follow up for end organ damage, and psychosocial support **(Adal et al., 2023).**

Significance of the study

Poisoning has been an increased global health problem world widely in the last few years with high mortality rates as the toxic agents are available all times but differ from place to place globally. According to WHO statistics, in 2022 a mortality rate was 1.4 persons per 100000 populations globally and 2.7 persons per 100000 populations in Africa from unintentional poisoning **(Cinà et al., 2022).**

In Egypt, acute poisoning is a considerable public health issue. The main contributing factors include widespread pesticide use, easy access to cleaning supplies and drugs, and ignorance of the risks associated with common household products especially in rural areas. The mortality rate of unintentional poisoning was significantly higher than other Arabic countries. According to recent estimates of WHO, the overall mortality rate in Egypt was 0.2 per 100,000 inhabitants **(El-Sayed et al., 2023).**

According to the Annual Report of Poisoning Control Center at Benha university hospital, it received about 2164 suspected cases of poisoning in 2023, more than 33% of poisoning cases were drug overdose with a total of 714 cases, followed by the ingestion

of pesticides with a total of 450 cases. The most affected groups were females than males, adolescents, children, and newly married personnel **(Benha University Hospital Statistical Office, 2023).**

Aim of the study: Was to assess how an educational guideline about the first 24-hours nursing interventions for poisoning can have effect on nurses' performance and patients' health outcomes.

Operational definitions:

- **Nurses' performance** refers to knowledge, practice, and attitude
- **Patient' health outcomes** refer to physiological parameters, severity of poisoning, organ failure, and adverse events related to poisoning that ranged from survival to death.

Research Hypotheses:

H1: Nurses' knowledge score regarding the first 24 hours interventions for poisoning patients could be higher after implementation of guidelines than before

H2: Nurses' practice score regarding the first 24 hours interventions for poisoning patients could be higher after implementation of guidelines than before.

H3: Nurses' attitude score regarding care of poisoning patients could be improved after implementation of guidelines than before

H4: Patient' health outcomes could be improved after application of the first 24hours nursing interventions guidelines than before.

Subjects and Method:

Study design: Quasi experimental research design was employed to conduct this study.

Setting: This study was conducted in poisoning control center at Benha university hospital, Qualyubia, Egypt. This center was a part of an emergency department at the 1st floor of hospital and composed of 6 rooms (3 for receiving cases& 3 ICU for poisoning cases).

Subjects: A convenient sample of nurses and patients within period of data collection included in the study who were:

- **(200) adult patients** with acute poisoning distributed into two equal group as following: **control group** included patients who admitted to poisoning center and hospitalized more than 24hours and received routine care by nurses prior to educational guidelines application & **study group** who cared for by nurses who were enrolled in the educational guidelines sessions.
- **(41) nurses** who care of patients with acute poisoning

Tools for data collection: The researchers used four tools which were:

Tool I: Self-administered questionnaire

This tool was developed by researchers based on a thorough review of recent and related literature **(Rageh et al., 2023 & Kronenberger& Ledbetter 2023).** It was in multiple-choice questions format consisting of two parts as follows:

Part (I): Nurses' personal data as**:** Age, gender, marital status, residence, educational level, job description, work area, years of experience, and attendance of training courses related to poisoned patient's care.

Part (II): Nurses' knowledge assessment: It contains (30 questions) to appraise knowledge of nurses toward:

- Definition of poisoning and its types (3questions)
- Routes of poisoning (7 questions)
- Clinical manifestations of poisoning (5 questions)
- Complications of poisoning (5 questions)
- Emergent (1st 24 hours**)** nursing interventions for poisoning patients (10

questions)

Scoring system: Each correct answer given one score and zero score for wrong answer, the total scoring system categorized as:

- Adequate level of knowledge: more than or equal 80% of total score (≥24 score).
- In adequate level of knowledge: Below 80% of total score (< 24 score).

Tool II: Nurses' practice observational checklist: This tool adapted from **(Anat, 2021, Cooper, &Gosnell, 2022 & John, 2023)** and finally designed by researchers in accordance to jury opinion and pilot study. It used to evaluate nurses' skills during care of poisoned patients within the first 24 hours as:

- Initial patients' health assessment (10steps)
- Antidote administration (18 steps)
- Decontamination (20 steps)
- Ryle tube insertion (12 steps)
- Gastric lavage (12 steps)
- Activated charcoal administration (8 steps)
- Oxygen therapy (20 steps)
- CPR for arrest patients (20 steps)

Scoring system

The total practice score was 120 score distributed as one mark for each step correctly done and zero for step that incorrectly done or not done. The total practice score graded as: -

- < 85% represents unsatisfactory practice (<102 score).
- ≥ 85% represents satisfactory practice (≥ 102score).

Tool III: Nurses' attitude toward poisoned patient's questionnaire: It adapted from **(Adal et al., 2023)** consisting of 10 questions that used by researchers to explore nurses' attitude toward emergent interventions for poisoned patients. The 3-point Likert scale responses as agree (3), neutral (2), and disagree (1). **The total attitude score** summed up and converted to a percentage that categorized into two levels:

-**Positive attitude:** More than or equal 65% of total score.

- **Negative attitude**: Less than 65% of total score.

Tool IV: Patient' health outcomes assessment Questionnaire: This questionnaire was designed by the researchers after reviewing recent literature involving two parts as following:

Part one: It concerned with assessing:

- **Patients' personal data** as age, gender, marital status, residence, and level of education.
- **parameters of poising** as mode of poising, Reason of poising Rout of poising, Type of poising, Time of arrived, Status of admission, and Length of hospital stay

Part two: It consisted of four scores to assess patient related health outcomes before and after nursing interventions as follows:

1- Clinical risk score (Moore & Cunningham, 2021): It used to identify patient' who at risk. Scores are based on **Physiological parameters** such as respiration, oxygen saturation, blood pressure, pulse rate, temperature and level of consciousness were assessed using **National Early Warning Score (NEWS).** In which score of 0, 1, 2 or 3 is allocated to each parameter. A higher score means the parameter is further from the normal range that reflects more deterioration in patient's condition. Appropriate clinical responses are given for threshold levels

- **Low risk** (aggregate score 1 to 4)
- **Medium risk** (aggregate score 5 to 6)
- **High risk** (aggregate score of 7 or over).

2- Poisoning Severity Score (PSS): It adopted from (**Persson et al., 1998)** through which poisoning severity grades from (0 - 4)

based on clinical symptoms and signs as: **0: No symptoms** , **1: Minor** and spontaneously resolving symptoms as: mild drowsiness, nausea, vomiting, abdominal pain, **2: Moderate** prolonged symptoms as: moderate drowsiness, confusion, tachycardia, and hypertension **3: Severe** or life-threatening symptoms that require intensive care as: coma, seizures, respiratory depression, cardiac arrest, and **4: Fatal** when poisoning was the direct cause of death.

3- **Treatment outcome and severity of adverse events:** It done by using emergency module of trigger tool that adopted from **(Griffey et al., 2022)** involving: 1) **Poor outcome:** Death or survived with disability, 2) **Good outcome**: Recovered without disability, 3) **Survived**: When the acutely poisoned patient was discharged with disability, 4) **Recovered**: When the acutely poisoned patient was discharged without disability, and 5) **Disability**: Either a physical disability or physiological disability leading to dialysis, respiratory or another organ failure following acute poisoning which was confirmed by laboratory investigations or suspected by clinicians, based on the clinical complaints of patient.

4- Sequential Organ Failure Assessment (SOFA score). It adopted from (**Ibrahim et al., 2018),** which used to evaluate the severity of organ dysfunction among poisoned patients through evaluation of six body systems functions as: respiratory (PaO_2/Pa Co_2 ratio), cardiovascular (Blood pressure and vasopressor use), and hepatic (Bilirubin levels), coagulation (Platelet count), renal (Creatinine levels or urine output), and neurological (Glasgow Coma Scale). Each system scored from 0 (normal function) to 4 (most abnormal) with higher scores indicating severe organ dysfunction with increases mortality rate. The score calculated after 24 hours of admission and every 48 hours thereafter.

The scoring system: Was Mild dysfunction. From 0 to < 8 points**, Moderate dysfunction**: from8 to <16 points, and **severe dysfunction**: from 16–24 points

Validity and reliability of tools:

Tools were evaluated by a panel consisting of five experts from the Medical Surgical Nursing and one professor of critical care medicine, Benha University to ensure their comprehensiveness, clarity and applicability. While Cronbach alpha test was used for tools reliability that resulted in values of 0.78 for tool I, 0.84 for tool II, ٠,٩٧ for tool III. In addition, the reliability of NEWS, PPS, SOFA, Trigger tool was (0.81, 0.851, 0.89, 0.765) indicating good reliability.

Ethical considerations:

Scientific Research Ethics Committee at Benha University's Faculty of Nursing approved the study with code **REC-MSN-P71** to conduct. Also, official endorsement gained from the dean of the nursing faculty and poisoning control center director at Benha University Hospital. The study's aim was clarified to subjects along with freedom to discontinue their participation at any moment without any rationalization. Throughout study phases, researchers ensured privacy, confidentiality and anonymity. Participated nurses provided verbal and written consent.

Pilot study:

Ten percent of the study sample shared in a pilot study (4 nurses &20 patients) to test the tools' applicability, clarity, and the amount of time needed to complete them. After analyzing the data from the pilot study, the required modifications done. Exclusion of subjects who shared this study from actual sample was done later.

Fieldwork:

The data collection process took place over six months period from the beginning of June 2024 to the end of November 2025, the previous tools used by the researchers to collect data through visiting the previous mentioned settings two days weekly at morning shift. Four phases were used to carry out the study: assessment, planning, implementation, and evaluation.

- Assessment phase: (pretest) the researchers first introduced themselves and explained the purpose of the study briefly to nurses and patients. Every nurse was met individually to assess his/her personal data and knowledge using (Tool I) as they answered questions by themselves which took about 30minutes. In addition, each nurse' practices were evaluated through direct observation by researchers guided by (Tool II). After that, the researchers asked them about their attitude toward poisoned patients utilizing (Tool III). Researchers obtained personal data and parameters of poisoning patients using (Tool IV Part One). Then, the researcher assessed (control group) after receiving routine care by nurses prior to educational guidelines application. Every patient was assessed for physiological parameters, treatment outcomes, poisoning severity, organ failure utilizing (Tool IV Part Two guided by reviewing patient' records or charts). After educational sessions had been ended, the study group of patients were assessed for their health outcomes using the same tools after care provided by nurses enrolled in educational sessions.

-Planning phase: Based on the data collected during the assessment phase, the researchers reviewed pertinent literature, designed an educational guideline and created an educational booklet with illustrations in simple Arabic language. The number of sessions, their content, different teaching strategies and the instructional media were also determined. The guidelines designed to satisfy nurses' educational needs and to improve health outcomes among poisoning patients in relation to the first 24 hours interventions. Booklet included **theoretic part** that involved information about definition of poisoning, types, routes, clinical presentation for each type, management, possible complications and risks, and emergent nursing interventions for poisoning. While practical part encompassed nursing skills to care of poisoning at 1st 24 hours as initial patient' health assessment, antidote administration, decontamination, Ryle tube insertion, Gastric lavage, Activated charcoal administration, Oxygen therapy, and CPR. Among the teaching strategies used were lectures with simplified information followed by discussions, teaching materials included power point presentations, booklets, and images.

-Implementation phase:

The implementation phase was achieved through educational sessions. It was carried out into three sessions. Time of each session ranged from 30-45 minutes. Nurses were divided into 5 groups each group included 8 nurses. Every session began with an overview of the preceding one's goals and objectives. Taking into account nurses' educational background, the Arabic language was used. In order to increase motivation for the sharing of this, encouragement and reinforcement were employed during the session. Additionally, questions were addressed and feedback was provided. The instructive booklet was introduced to each nurse to reinforce their knowledge and skills.

Session 1: At the start of this first session, the researchers introduced themselves, discussed the educational guidelines and its significance, and elaborated on its goals.

Knowledge about the definition of poisoning, types, complications and management of each type, and emergent nursing interventions were covered.

Session (2): Included how to demonstrate initial patient's health assessment, antidote administration, and decontamination skills.

Session (3): Included how to demonstrate Ryle tube insertion, Gastric lavage, Activated charcoal administration, Oxygen therapy, and CPR skills.

-Evaluation Phase:

It was implemented immediate post guidelines to assess the effect of educational sessions on nurses' performance and poisoning patients' health outcomes using the same tool of pretest.

Statistical analysis of the data:

The statistical package for social science (SPSS), version (21). (SPSS Inc., Chicago, IL was used to collect, code, computerize, tabulate, and analyze the gathered data. Descriptive statistics were applied (e.g., mean, standard deviation, frequency and percentages). The statistical tests were used as Paired (t) test was used to compare mean scores between the same sample at different study phases while Chi square was used for number and percent distribution, and Spearman correlation test (r) was used to define correlation among study variables at different study phases. When $p \leq 0.001$, a level value was regarded to be highly significant, significant when $p \leq 0.05$, and insignificant when $p > 0.05$.

Results:

Table (1) shows the personal data among studied nurses revealing that, 41.5% of them were in the age category from 31-40 yearswith mean 31.77± 6.973. In addition, they were females and married (68.0% 75.6%, respectively). As well as, 63.4% of them lived in rural areas & 48.8% of them had technical nursing institute as level of education in nursing. 78.0% of them worked as bedside nurses and 39.0% were working in the toxicology department. Also, 65.9 % had 5 to ≥ 10 years of experience. More ever, 61.0 %of them do not attend any training courses about poisoning. While 43.7% of them reported the last time for training courses attendance was one year or more.

Table (2) illustrates that, there was highly statistically significant improvement in total mean score of nurses' knowledge regarding care of poisoning patients within the first 24 hours throughout post guidelines implementation observed as $p < 0.001$.

Figure (1) shows that 65.8% of studied nurses had an inadequate level of knowledge pre guidelines implementation that changed to be adequate among 85.4 % of them after guidelines implementation with highly statistically significant differences observed as $p < 0.001$.

Table (3) illustrates that, there were highly statistically significant differences between practice variables pre and post guidelines implementation observed as $p < 0.001$. at the same time, there was highly statistically significant improvement in total mean score of nurses' knowledge regarding care of poisoning patients post guidelines implementation.

Figure (2) shows that 73% of studied nurses had an unsatisfactory level of practice pre guidelines implementation that changed to be satisfactory among 78 % of them after guidelines implementation with highly statistically significant differences observed as $p < 0.001$.

Figure (3) illustrates that 83% of nurses had a negative attitude toward care of poisoning patients within the first 24 hours pre implementation of guidelines. While, it

changed to be positive among 75.6% of them post guidelines implementation with highly statistically significant differences observed as p <0.001.

Table (4) clarifies that there was a positive and significant correlation between total nurses' knowledge, practice, and attitude at pre and immediate post guidelines implementation phases observed with p ≤0.001. Meanwhile, there was no significant correlation between total nurses' knowledge and attitude pre-guidelines implementation observed as p value >0.05.

Table (5) demonstrates the frequency and percentage distribution of poisoning patients' socio demographic features showing that 62 %, 40% of the control and study groups respectively were between the ages of 18 and 30 with mean of (29.130± 8.990 &34.110± 22.247). in addition, 70 %, 74% respectively were females and single (50%,63% respectively). More ever, 57% ,54% of control & study group respectively were urban and had intermediate level of education 62%&69% respectively.

Table (6) illustrates poisoning related data of studied patient groups indicating that,54% and 59% of control and study groups respectively were poisoned accidentally using drugs (72%,79%respectinely) that taken orally with percentage 90% & 92% respectively. Furthermore, 71%, 74% respectively of control and study groups arrived to hospital throughout one hour of ingestion and were conscious 90% and 91%. In addition, duration of hospital stay ranged from one to three days among (70%, 80% of control and study group respectively.

Figure (4) illustrates that prior to educational guidelines, 94% of patients under study had high clinical risk (unstable physiological parameters) Meanwhile, after guidelines implementation 84% of them had low clinical risk (more stable parameters) with highly significant statistical difference as p <0.001.

Table (7) illustrates that (66%, 61% respectively) of control and study group of patients experienced severe poisoning score and organ failure prior to guidelines, which changed to be minor severity and mild organ failure among (81%,86.0% respectively) of them after guidelines with highly significant statistical difference observed as p value ≤ 0.001.

Figure (5) shows that, before guidelines implementation, (48.5%) of patients had poor treatment outcomes. On the other hand, (81%) of patients experienced good treatment outcomes after guidelines implementation.

Table (1): Frequency and percentage distribution of the studied Nurses in relation to their personal data (No=41).

Demographic characteristics	No.	%
Age (in years)		
20-30	15	36.6
31- 40	17	41.5
41 -50	9	22.0
Mean ± SD 31.77± 6.973		
Gender		
Male	9	22.0
Female	32	68.0
Marital status		
Single	7	17.0
Married	31	75.6
Divorced	3	7.4
Level of nursing education		
Diploma	7	17.0
Technical nursing institute	20	48.8
Bachelor degree	14	34.2
Job description		
Supervisor	9	22.0
Bed side nurse	32	78.0
Work area		
Emergency	12	29.3
Toxicology	16	39.0
Toxicology intensive care	13	31.7
Years of experience		
<1year	10	24.4
1<5year	4	9.7
5 ≥10year	27	65.9
Mean ± SD 6.87 ± 2.491		
Attendance of training courses about poisoning		
Yes	16	39.0
No	25	61.0
The last time of attending training courses (n=16)		
1-6 months	5	31.3
7-12 months	4	25.0
one year or more	7	43.7

Table (2) Mean and standard deviation of nurses' knowledge score regarding care of poisoning patients within the first 24 hours throughout different study phases (No=41)

Variables	Pre intervention	Post intervention	t (p value)
	X ± SD	X ± SD	
Definition of poisoning and its types	1.097± 0.969	3.902± 1.200	t:12.216 p 0.000**
Routes of poisoning	0.658± 0.728	20634± 0.661	t: 12.815 p 0.000**
Clinical manifestations of poisoning	0.951± 0.893	4.487± 0.596	t:-20.630 p:0.000**
Complications of poisoning	0.439± 0.549	1.658± 0.480	t:-10.292 p :0.000**
Emergent nursing interventions for poisoning patients (within 1st 24 hours)	1.122± 0.927	6.097± 0.830	t:-20.461 p :0.000**
Total mean score of knowledge	**4.268± 2.539**	**18.780± 1.968**	**t :-22.803 p :0.000****

(*) Statistically significant at p<0.0 (**) highly statistically significant at p <0.001.
t 1 (p 1) between pre and immediate post test

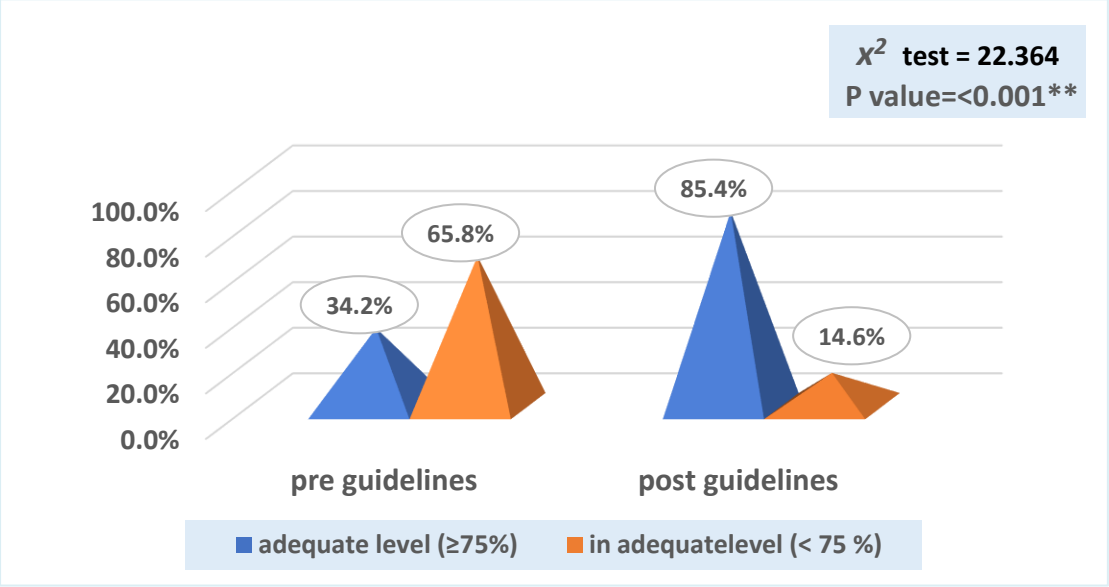

Fig. [1]: Total Knowledge Scores among studied nurses pre/ post guidelines implementation (n=41)

Table (3) Mean and standard deviation of nurses' practices score regarding care of poisoning patients pre, and post guidelines implementation (No=41)

Item	Pre intervention X ± SD	Post intervention X ± SD	T 1(P 1)
1-Patient' health assessment: -			
➢ History taking	2.219±0.419	3.707±0.642	t: 13.391 p :0.000**
➢ Vital Signs	2.219±0.419	3.682±0.471	t: 15.730 p :0.000**
➢ Level of Consciousness	4.414±0.631	7.341±0.794	t: 15.460 p :0.000**
2-Antidote Administration			
➢ Intravenous Canulation	4.609±0.737	9.170±1.159	t: 16.449 p :0.000**
➢ Preparation And Dose Calculation	12.536±1.613	20.000±1.658	t: 16.449 p :0.000**
➢ Infusion	10.926±1.292	19.326±3.022	t: 14.338 p :0.000**
3- Activated Charcoal administration	5.634±0.993	8.321±1.652	t: -6.955 p :0.000**
4- Decontamination			
➢ Skin Decontamination	5.707±1.101	8.487±0.819	t: 7.223 p :0.000**
➢ Eye Decontamination	7.682±0.819	12.439±1.703	t: 16.103 p :0.000**
➢ Induced Emesis	4.390±0.627	7.292±0.955	t: 14.295 p :0.000**
➢ Whole Bowel Irrigation	4.439±0.634	7.219±0.962	t: 14.184 p :0.000**
5- Gastric lavage			
➢ Ryle tube insertion	15.585±2.121	24.975± 3.445	t: 20.182 p :0.000**
➢ Lavage Procedure	11.073±1.311	17.805± 2.413	t: 22.451 p :0.000**
6- Oxygenation	21.024±2.474	33.268±3.556	t: 13.598 p :0.000**
7-C.P. R	15.219±1.423	24.170±3.534	t: 12.376 p :0.000**

(**) highly statistically significant at p<0.001.

t 1(p 1) Difference between mean practice pre and immediately post educational guidelines implementation

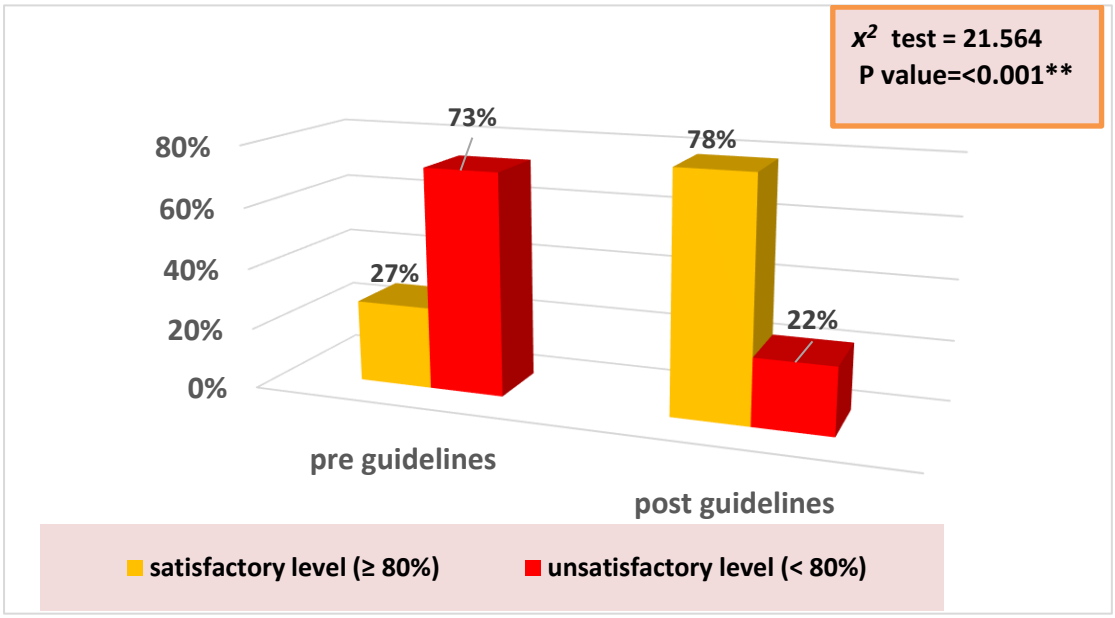

Fig. [2]: Total practice Scores among studied nurses pre/ post guidelines implementation (n=41)

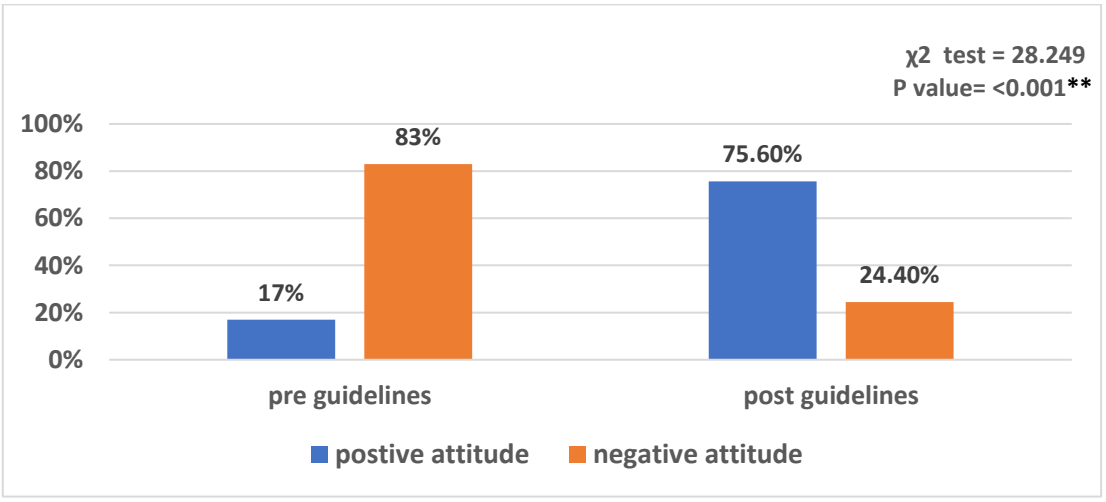

Fig. [3]: Total attitude Scores among studied nurses pre/ post guidelines implementation (n=41)

Table (4): Correlation between total knowledge, practice and attitude among studied nurses throughout study phases (No=41)

Variables	Study periods	Spearman's rho correlation r value	
		r	P value
Knowledge and practice	Pre educational guidelines	0.759	<0.001**
	Immediately post educational guidelines	0.115	<0.001**
Knowledge and attitude	Pre educational guidelines	0.245	0.122 (n.s)
	Immediately post educational guidelines	0.283	<0.001**
Practice and attitude	Pre educational guidelines	0.320	<0.001**
	Immediately post educational guidelines	0.638	<0.001**

n.s not significant p > 0.05 ****Highly significant at p ≤0.001.**

Table (5): Number and percentage distribution of the studied patients based on their socio demographic data (n= 200)

Item	Control group (n=100) Pre guidelines implementation		Study group (n= 100) Post guidelines implementation	
	No.	%	No.	%
Age				
18≤30	62	62.0	40	40.0
31≤ 40	19	19.0	38	38.0
41≤50	15	15.0	13	13.0
51≤60	4	4.0	9	9.0
Mean ± SD	**29.130± 8.990**		**Mean ± SD**	**34.110± 22.247**
Gender				
Male	30	30.0	26	26.0
Female	70	70.0	74	74.0
Marital status				
Single	50	50.0	63	63.0
Married	43	43.0	30	30.0
Divorced	7	7.0	7	7.0
Residence				
Rural	43	43.0	46	46.0
Urban	57	57.0	54	54.0
Level of Education				
Illiterate	20	20.0	18	18.0
Intermediate Certification	62	62.0	69	69.0
Highly educated	18	18.0	13	13.0

Table (6): Frequency distribution of poisoning related data among studied patients (n= 200)

Variables	Control group (n= 100) Pre guidelines implementation		Study group (n= 100) Post guidelines implementation	
	No.	%	No.	%
Mode of poisoning				
Suicidal	46	46.0	41	41.0
Accidental	54	54.0	59	59.0
Type of poisoning				
Pesticide	6	6.0	5	5.0
House holds	22	22.0	16	16.0
drugs	72	72.0	79	79.0
Route of poisoning				
oral	90	90.0	92	92.0
inhalation	2	2.0	0	0
injection	4	4.0	2	2.0
Snake bite	4	4.0	6	6.0
Time of arrival to hospital (after poison intake)				
≤ 1hour	71	71.0	74	74.0
>1hour	29	29.0	26	26.0
Status on admission				
conscious	90	90.0	91	91.0
unconscious	10	10.0	9	9.0
Length of hospital stay				
1≤ 3days	70.0	70.0	80.0	80.0
> 3 days	30.0	30.0	20.0	20.0

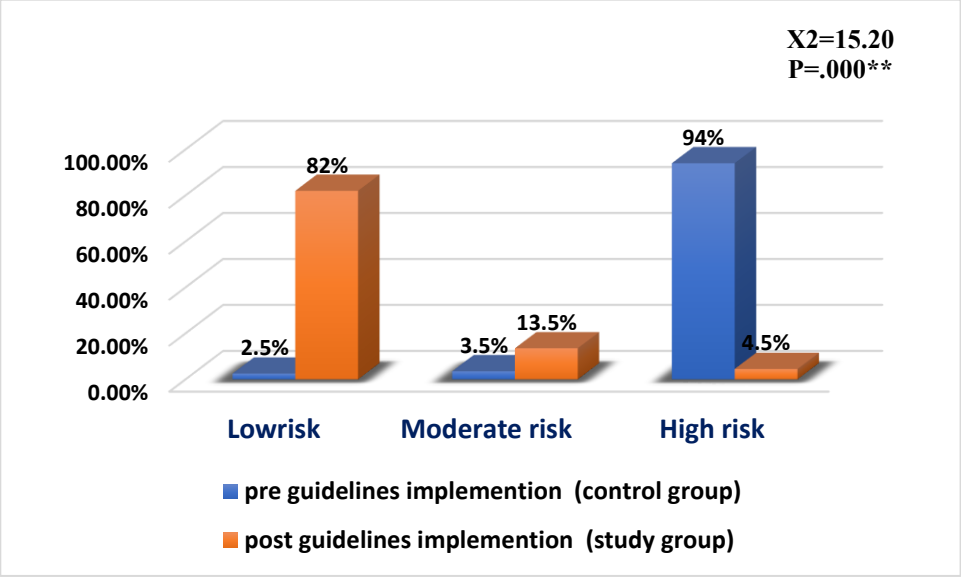

Figure (5): Frequency distribution of clinical deterioration level among the studied patients pre &post guidelines implementation (n= 200)

Table (7): Comparison of patients' health outcomes scores pre &post guidelines implementation (n= 200).

Patients' health outcomes	Variables	Control group (n= 100) Pre guidelines implementation		Study group (n= 100) Post guidelines implementation	
		(No.)	%	(No.)	%
Poisoning Severity Score	Non	0	0	7	7.0
	Minor	0	0	81	81.0
	Moderate	25	25.0	12	12.0
	Severe or life threating	66	66.0	0	0
	Fetal or death	9	9.0	0	0
	Mean ± SD	2.8± .5		2.3± .7	t: 5.6 p ≤0.001**
SOFA Score category (Sequential Organ Failure Assessment)	Mild	11	11.0	86	86.0
	Moderate	28	28.0	11	11.0
	Severe	61	61.0	3	3.0
	Mean ± SD	2.43 ± 0.558		1. 93 ± 0.679	t: 3.125 p ≤0.001**

**Highly significant at p ≤0.001.

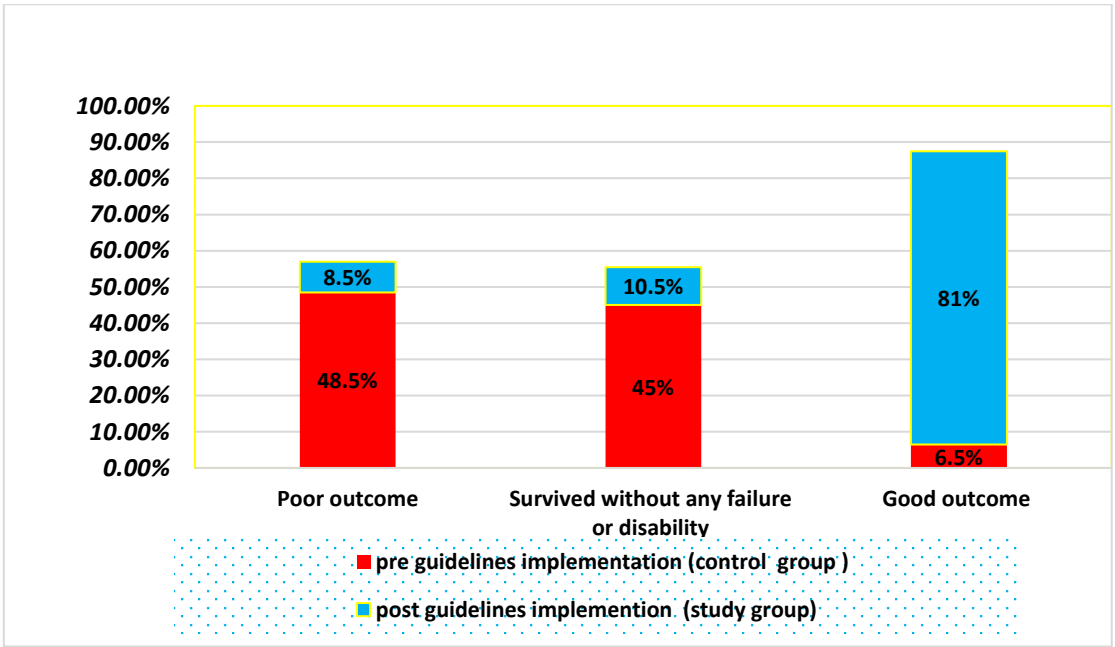

Figure (6): Frequency distribution of treatment outcomes among the studied patients pre &post guidelines implementation pre &post guidelines implementation (n=200).

Discussion:

Poisoning is a major health problem leading to emergency and intensive care unit admission and inducing significant patient morbidity and mortality worldwide. Early diagnosis and immediate effective management improve patient outcomes, saving lives and decreasing mortality **(Salem et al., 2023).** Nurses are generally the first responders in the emergency department for patient with poisoning. Moreover, guidelines are regularly advocated to improve nurse's knowledge and practice for providing care to the patient with poisoning (**Allam et al., 2021).**

Regarding age, the findings of the current study showed that more than two fifth of the studied nurses their age ranged from 31-40 years with mean 31.77± 6.973. This result might be due to being poisoning center considered as a dynamic area of work that requires more qualified and experienced personnel. This finding agreed with **Abdallah, (2018)** who conducted a study to assess nurses' knowledge about initial management for poisoning and found that, the age group of nurses was between 30 years or more. While, study conducted by **Saad et al., (2021)** showed that more than half of studied nurses were young as their age ranged from twenty to less than thirty years old.

Regarding gender, the study revealed that more than two thirds of nursing staff were females. This result was in congruent with **Khatab et al., (2024)** who studied Practice of Nurses Caring for Patients with Acute Poisoning in Emergency Unit post educational guidelines at Poisoning Treatment Centre, Ain Shams University and revealed that nearly most of subjects were female. On the other hand, study done by **Abebe et al., (2019)** revealed that, more than half of nurses were male. **From the researcher point of view** this might be because general concept of nursing profession in Egypt was to be more related to females than males. As well as, studying of nursing in Egyptian universities were exclusive for females only till few years ago.

As regard to marital status, the current study revealed that three quarter of studied nurses were married. **From the researcher's point of view**, this might because most of the studied sample was female and their age was more than 30 years old. This finding is in agreement with study conducted by **Abd El Fatah et al., (2021)** and showed that three quarters of the studied sample was married.

Concerning educational level, the study revealed that nearly half of studied nurses graduated from technical institute and more than three quarter of them acted as bedside nurse, this due to developing nursing profession graduation occurred recently as in the past it was diploma or institute with little numbers of bachelor which reflect their job description so that they acted as bed side nurse. This finding was in agreement with **Saad et al., (2021)** who showed that nearly two third of the studied nurses had technical institute of nursing. On other hand, **Sayed et al, (2015)** studied nursing Management of acute Drug Poisoning at Cairo University Hospitals and reported that the minority of participants had nursing technical institute.

Regarding years of experience of the studied nurses, the present study illustrated that more than two thirds of them had from five to more than ten years of experience. This finding disagreed with **Mohammed et al., (2021)** in their study showing that the highest proportion of studied nurses had experienced more than ten years.

Regarding attendance of training guidelines, results showed more than three fifth of the studied nurses not attended any training courses. This may be attributed to lack provision of training guidelines and high cost of lectures or work shop. This finding agreed

with **Mohammed et al., (2021)** who stated that most of the studied nurses did not attend training courses. On contrast, **Hussein et al., (2021)** in their study about nurses' performance for organophosphate poisoning care reported that majority of nurses attended training courses regarding poisoning.

In relation to total nurses' knowledge score, the results of this study revealed that, more than two thirds of studied nurses had inadequate level of knowledge pre guidelines implementation that changed to be adequate among majority of them after guidelines implementation with highly statistically significant differences. This may be attributed to the fact that educational guidelines were implemented after identification of nurses' knowledge gaps and they were willing to get more information to be equipped with enough recent knowledge to provide emergent interventions efficiently and prevent further complications.

This finding agreed with **Zaveri, & Chaudhari, (2019)** to assess impact of educational training and workshop on knowledge, attitude, and practice of nursing staff of tertiary care hospitals showing that most of nurses had a good level of knowledge post training workshop implementation. This finding also in congruent with **Mohammed, & Ahmed, (2019**) who conducted study to evaluate effect of nursing guidelines regarding poisoning care in Zagazig university hospital showing that unsatisfactory knowledge level about emergent interventions of poisoning pre guidelines reported among three quarters of the studied nurses which changed post guidelines implementation to be satisfactory among majority of them. In addition, study conducted by **Mohammed et al., (2021)** clarified that two thirds of the studied nurses had poor level of knowledge about poisoning care pre-educational guidelines implementation and there was an obvious improvement in total knowledge score post guidelines. at the same line, **Tassew et al., (2022)** in their study revealed that, majority of nurses had good level of knowledge toward initial care for poisoned victims. This finding agreed with **Abd El Fatah et al., (2021)** who showed that the most of the studied nurses had satisfactory knowledge about supportive care of poisoning post guidelines protocol implementation.

Conversely, study conducted by **Abebe et al., (2019)** showed that, the majority of participated nurses had lack of knowledge regarding protocol of initial management of acute poisoning and required more training. On the same line, studies done by **(Anderson, 2021; Memarian et al., 2021)** revealed that nearly three quarter of nurses equipped with a good knowledge toward acute poisoning management as they were highly qualified and enthusiastic for updating their knowledge to deal with large number of cases daily.

In relation to total nurses' practice scores regarding care of poisoning patients within the first 24 hours, the current study revealed that, nearly three quarter of studied nurses had unsatisfactory level of practice pre guidelines implementation that improved to be satisfactory among more than three quarter of them after guidelines implementation. **From researchers' point of view**, unsatisfactory level of practice prior to sessions may be due to lack of time, workload, and lack of nurses' supervision and evaluation against standards of practice. After that, improvement occurs due to active participation of nurses as they were keener to learn and effective role of educational sessions and teaching media used.

This finding agreed with **Desilva, et al., (2018)** in a pilot randomized controlled study to evaluate the acceptability and feasibility of nurses' interventions for those who attempted

self-poisoning and showed that most of the studied nurses had a competent level to perform immediate care skills effectively post educational intervention than before. At the same line, study done by **Mohamed et al., (2021)** showed that there was a dramatic improvement in nurses' practices after implementing training courses regarding how to care for poisoning cases. Congruently, **saad et al., (2021)** clarified in their study conducted at a poisoning center, Al-Manzala central hospital, Al-Mansura city that more than three quarters of toxicological nurses had acceptable practices toward emergent interventions for poisoning. At the same time, study done recently by (**Tassew et al. 2021; Adal et al., 2023)** confirmed that, more than three fifths of participated nurses had adequate skills on the initial management for acute poisoning patients. On the same sequence, **Khatab et al., (2024**) proved that the most of nurses had satisfactory practical level regarding care for poisoning cases after educational guidelines than before.

On the other hand, study done by **Blanchard et al., (2019)** indicated that the studied sample didn't rely on proper management measures for poisoning cases. In addition, **Mohamed et al., (2023)** revealed that more than two thirds of studied sample of nurses didn't have competent level of practice to provide immediate care with acute poisoning.

In relation to total nurses' attitude score, the current study revealed that nearly majority of nurses had negative attitude toward care of poisoning patient pre implementation of guidelines. This may be the thoughts of nurses that the most of poisoning cases tend to end their life by themselves or suicide attempts for different stressors that might be due to marriage failure or educational failure and depression. While, their attitude changed to be positive among three quarters of them post guidelines implementation with highly statistically significant differences. This may be due to changing in their ideas toward poisoning causes that occurred due to negligence, unintentional households' substance or drugs ingestion, work related poisoning, and food storage mistakes or expiration of its date. So, they became more sympathy and more interested to provide care for those patients.

This finding agreed with **Adal et al., (2023)** who proven in their study that more than two thirds of nurses owned a positive attitude and happy to care of poisoned patients in an emergency department. In addition, this result is congruent with the study conducted by **Al-Jelaify & Al- Homidah, (2021)** who clarified in their study that only more than two fifth of studied sample had a negative attitude toward emergent care of poisoned patients. Meanwhile, after educational sessions, more than half of them had positive attitudes. At the same align, **Mohamed et al., (2021)** in their study showed that about three- fourths of the nurses expressed negative attitudes toward caring for organophosphate poisoning patients prior to educational training courses. Furthermore, this finding supported by **Ali et al., (2023)** who stated in their study that three fifth of studied nurses had positive attitude toward care of Organophosphate Patients

Concerning correlation between total knowledge, practice and attitude, the current study showed that there was a positive and significant correlation between total nurses' knowledge, practice, and attitude among studied nurses. This result is in the same sequence with study done by **Khatun & Jeganathan, (2022),** who stated that toxicological nurses play an essential role in initial assessment and management of cases throughout combination between their knowledge, skills, and attitude to optimize their performance, care quality, and patient'

satisfaction. Also, **Ali et al., (2023)** clarified that there was positive and variation in linear correlation amongst nurses' knowledge, practice, and attitude regarding care of poisoned patients before and after the guidelines implementation. This result was similar with **Mohammed et al., 2021; Hussein et al., (2021)** showed that significant increase in nurses' knowledge level aligned with mark able improvement in practical level regarding caring of poisoned patients post educational guidelines. On the other hand, this finding disagreed with study conducted by **Sayed et al., (2015)** who revealed that no correlation between total score of knowledge and attitude regarding detection and management of acute drug poisoning.

As regards to sociodemographic profile of studied patients, the current study showed that, more than half of control group of patients and two fifths of study group aged from 18 to 30 years old. In addition, more than two thirds of them were females. This findings agreed with **Ragab (2023)** who showed in study conducted at intensive care unit in Menoufia university hospital that, incidence of poisoning was common among female adolescents. In addition, **Morsy et al., (2022)** who conducted study to identify outcomes of drug poisoning among patients revealing that, the most of patients aged from 18 to 29 years old and had secondary school as educational level.

Conversely, **Abdelhamid, (2021)** clarified that three-quarters of patients were men. **From researcher's point of view,** most of females are usually emotional and more sensitive than men. Also, they usually contact with households than men. so, stress and other social factors may contribute to poisoning incidence.

As regards to poisoning related data, more than three quarters of patients were drugs related poisoning and the most of them taken it orally. In addition, more than two thirds of patients arrived to hospital within one hour of poison intake and most of them were conscious. This finding is consistent with **Aher &Shingade (2023)** who stated that majority of patients were conscious after drug over dose that taken orally and received care within the first hour of their admission that considered as golden time for survival. On contrast, study done by **Teym et al., (2024)** showed that more than half of patients who took the poison orally at home were unconscious when admitted to hospital.

As regards to hospital stay, more than two thirds of control group and four fifth of study group hospitalized for one to three days. That may be contributed to physiological responses to poisonous substances according to its dose and severity. At the same line, study constructed by **Morsy et al., (2022)** showed that three quarters of patients received care for 2 days until stability.

Concerning patients' health outcomes, more than four fifths of studied sample had experienced low clinical risk and good treatment outcomes after guidelines implementation. This results in agreement with **Rageh et al., (2023)** who revealed that early pharmacological interventions could improve poisoning patient' physiological parameters with decreased level of clinical risks and effective prognosis later. In contrast, **Waktola et al., (2023)** showed that the majority of cases had severe hemodynamic complications with increased mortality rates in spite of early detection and management provided by clinical staff.

As regards to poisoning severity and organ failure score, nearly two thirds of studied patients experienced severe poisoning score and organ failure before guidelines implementation which changed to be minor

and mild later among more than four fifth of them. This may be attributed to the difference of poisoning type the time passed from exposure to arrival to the hospital, availability of experienced staff and life-saving measures. So that, more educated staff became more skillful to care of cases than before this finding is in congruent with **Reda et al., (2023)** who clarified that vast majority of patients experienced improved health condition and minor organ dysfunction after interventions than before. In addition, **Moussa et al., (2023)** showed that more than half of patients had severe poisoning score and organ failure prior to immediate nursing and medical interventions, then it improved to be mild after that. Conversely, **Morsy et al., (2022)** indicated that the majority of sample had mild organ failure and improved lab investigations with normal vital signs after immediate care provided.

Conclusion:

The educational guidelines effectively improved nurses' knowledge, practices, and attitude regarding the first 24-hour nursing interventions as there was highly statistically significant correlation between nurse's total knowledge, practice, and attitude scores post guidelines implementation than before observed with $p \leq 0.001$. In addition patients' experienced low levels of clinical deterioration, poisoning severity, organ failure, and adverse events post guidelines than before that responded research hypotheses.

Recommendations:

-Periodic in-service training guidelines and regular lectures should be provided to nursing staff in order to keep them of updating knowledge and practice regarding acute care of poisoning.

- Provision of continuing education guidelines in order to update nurses' knowledge and enhance their practices regarding emergency management guidelines of poisoning.

- Designing and distributing Arabic booklets regarding emergency management guideline of poisoning to all nurses who are working at Poison Control Center at different health care settings.

- Periodical follow-up for the level of nurses' knowledge and their practices regarding care of poisoned patients to detect the points of strength and weakness to act on.

- On-going and regular in-service training regarding basic procedures which applied for poisoning patients

- The study can be repeated on a large random sample in different settings for generalization of the findings.

References:

Abd El Fatah, N., Mohamed, A., Rabea B., & Abd El Aziz, A. (2021). Effect of Guidelines Protocol for Nurses' Performance Regarding Care Provided toward Poisoned Pre-school Age Children. Journal of Nursing Science Benha University, 2(2): 471-484. https:// doi.org/10.21608/jnsbu.2021.194585

Abdallah, D. (2018). Assessment of Nurses Knowledge Regarding Initial Management of Poisoning in Alamal National Hospital, Sudan. Shendi University journal of applied science, 3 (1):54-60. https://journals.ush.edu.sd/applied/english/

Abdelhamid, W. (2021). Evaluation of Severity of Poisoning Exposures among Patients Presented to Poison Control Center, Ain Shams University Hospitals. Ain Shams Journal of Forensic Medicine and Clinical Toxicology, 36(1):106-122. 10.21608/ajfm.2021.139281

Abebe, M., Kassaw, W. & Shewangashaw, N. (2019). Assessment of knowledge and practice of nurses on initial management of acute poisoning in Dessie referral hospital Amhara region, Ethiopia, The Biomed

Central Journal,18 (60):1-9. https://doi.org/10.1186/s12912- 019-0387-2

Abo El-Ata, A., Hassan, S. & Abdu ElKader, H. (2021). Critical Care Nurses'knowledge And Practices About Toxicological Emergencies. Port Said Scientific Journal of Nursing, 8(3): 68-83.http://dx.doi.org/10.21608/pssjn.2021. 75367.1108MO

Adal O, Hiamanot Y, Zakir A, Regassa R, Gashaw A. (2023). Knowledge, Attitude, and Practice of Nurses Toward the Initial Managements of Acute Poisoning in Public Hospitals of Bahir Dar City, Northwest Ethiopia Cross-Sectional Study. Sage Open Nursing Journal. 16;9:23779608231157307. 10.1177/23779608231157307

Aher, A.& Shingade, P. (2023). Clinical profile and in hospital outcome of acute poisoning cases admitted in tertiary care hospital: A prospective observational study. Vidarbha Journal of Internal Medicine, 33(1);3-9.10.25259/VJIM_33_2022

Ali, A., Mahmoud, B.& Elsayed, E. (2023). Critical Care Nurses' Performance Regarding Care of Patients with Organophosphate Poisoning in Poisoning Centers, Eur. Chem. Bull'; 12(4):992-1006

Al-Jelaify, M. & AlHomidah, S. (2021). The Individualized Management Approach for Acute Poisoning. Advances in pharmacological and pharmaceutical sciences, 2021, 9926682. https://doi.org/10.1155/2021/9926682

Allam, A., Mohammed, M., Abd-elaziz, L., Nagy, A. &Al-Metyazidy, A. (2021). Effect of Emergent Nursing Educational Program on Nurses Performance for patient with acute poisoning. Tanta Scientific Nursing Journal, 21(2): 224-250. https://doi.org/10.21608/tsnj.2021.190786

Anat, J. (2021). Review on gastric lavage in the management of ingested poisoning. European journal of pharmaceutical and medical research; 5 (10): 167-171. https://www.ejpmr.com/home/abstract_id/4284

Anderson, M. (2021). Initial management of suspected poisoning among young people and children. Pediatrics and Child Health, 31(10): 382–387. https://doi.org/10.1016/j.paed.2021.07.003

Benha university hospital statistical office. (2023). annual report of poisoning control center. Benha city, Qualubia governorate, Egypt.

Blanchard, J., Feltes, M., Kim,Y., Pousson, A.& Douglass, K. (2019). Experience of Indian emergency physicians in management of acute poisonings. Toxicology Communications. 3(1):54-60. https://doi.org/10. 1080/24734306. 2019.16357 25

Cinà, A., Torcinovich, A. & Pelillo, M. (2022). A black-box adversarial attack for poisoning clustering. Pattern Recognition Academic Journal, 122(1): 108306-108306. https://doi.org/10.1016/j.patcog.2021.108306

Cooper, K. &Gosnell, K., (2022). Foundations and Adult Health Nursing - E-Book , 9 th ed., Elsevier, USA., Chapter 14 , P. 342

De Silva, A.. Dawson, A., Gawarammana, I., Tennakoon, S. & Rajapakse, T. (2018). Study protocol: a pilot randomized controlled trial to evaluate the acceptability and feasibility of a counseling intervention, delivered by nurses, for those who have attempted self-poisoning in Sri Lanka. Pilot and feasibility studies, 4, 150. https://doi.org/10.1186/s40814-018-0341-1

El-Sayed, E., Abd El Rady, I. & Morsi, A. (2023). Trends and Acute Poisoning Profiles: 2023 Annual Report of Zagazig University Poisoning Treatment Unit. Egyptian Society

of Clinical Toxicology Journal, *12*(1): 45-59. doi: 10.21608/esctj.2024.278873.1051

Griffey, R., Schneider, R. & Todorov, A. (2022). Emergency Department Adverse Events Detected Using the Emergency Department Trigger Tool. Ann Emerg Med. 80(6):528-538. 10.1016/j.annemergmed.2022.05.037

Ibrahim, K., Vaisi Raigani, A., Jalali, R. &Rezaei M. (2018). Determining and Comparing Predictive and Intensity Value of Severity Scores - "Sequential Organ Failure Assessment Score," "Acute Physiology and Chronic Health Evaluation 4," and "Poisoning Severity Score" - in Short-Term Clinical Outcome of Patients with Poisoning in an ICU. Indian J Crit Care Med. 22(6):415-421. 10.4103/ijccm.IJCCM_238_17.

John, R . &Moses, F., (2023). Adult Health Nursing: 1st ed., Savera Printing Press, India, P 204.

Khatab, R., Ahmed, O., Mahdy, N. &Faltas, S. (2024). Practice of Nurses Caring for Patients with Acute Poisoning in Emergency Unit: Effect of Educational Guidelines. Egyptian Journal of Health Care, 15(2): 993- 1002. https://doi.org/10.21608/ejhc.2024.358753

Khatun A., & Jeganathan J., (2022). Nursing Management of Organophosphorus Poisoning, Bulletin of Environment, Pharmacology and Life Sciences; 4: 570-574

Kronenberger, J. & Ledbetter, J. (2023). Jones & Bartlett Learning's Comprehensive Medical Assisting,6th ed., Jones & Bartlett Learning publishing, USA, 641.

Memarian, A., Mostofizadeh, R., Aghakhani, K., Rismantab Sani, S., Abdolkarimi, L. & Soltani, S. (2021). Investigating emergency nurses' awareness on the differentiation between acute methanol and ethanol intoxication. International Journal of Medical Toxicology and Forensic Medicine, 11(3): 33532. https://doi.org/10.32598/ijmtfm.v11i3.33532

Mohamed, M., Taha, N., Zytoon, H. & Hafez, G. (2023). Factors Affecting Nurses' Role Regarding Care of Patients with Acute Organophosphate Poisoning. Zagazig Nursing Journal January 19(1):66-77. https://znj.journals.ekb.eg/article_275462_430385079595c2eebfadec76d12a4d75.pdf

Mohamed, S., Mohamed,M., Gendy,J.& Abd Elsalam,S. (2021). Nurse's performance for patient with acute organophosphate poisoning. Egyptian Journal of Health Care, 11(4): 1212-1227. https://ejhc.journals.ekb.eg/article_ 198459_ 167eb42cf43ffd9f76eec76d5e58b160.pdf

Moore, T. and Cunningham, S. (2021). Nursing Skills in Cardiorespiratory Assessment and Monitoring, 1st ed., Routledge Publisher, London, 102.

Morsy, W., Khalil, N. &Abdou, R. (2022). Outcomes of acute drug poisoning among patients at one of the University Hospitals in Cairo. Egyptian Nursing Journal, 18(2): 76-83.10.4103/enj.enj_7_21

Moussa, B., El Beltagy, Y., Taha, S. (2023). Predictive Value of New Sequential Organ Failure Assessment (SOFA) Score of Mortality in Critically Ill Patients in Emergency Department in Suez Canal University Hospital. The Egyptian Journal of Hospital Medicine, 90(2):2762-2766. 10.21608/ejhm.2023.287320

Persson, H., Sjöberg, G., Haines, J.& de Garbino, J. (1998). Poisoning Severity Score Grading of Acute Poisoning. Journal of Toxicology: Clinical Toxicology, 36(3): 205–213. https://doi.org/10.3109/15563659809028940

Ragab, S. (2023). Predictors Of Mortality in Aoftely Intoxicated patients Admitted To Intensive Care Unit In Menoufia University Hospital. The Egyptian Journal of Forensic Sciences and Applied Toxicology, 21 (2):1-

17. https://ejfsat.journals.ekb.eg/article_171703_f8202ef29c0e8096e96cbabde3be0a78.pdf

Rageh, O., Sabra, H., Alammar, A., Alanazi, O., Nagy, A. & Kabbash, I. (2023). Profile and outcomes of acute poisoning in the toxicology treatment and control center at Tanta University Hospital, Egypt. BMC pharmacology and toxicology, 24(1):6. https://doi.org/10.1186/s40360-023-00650-5

Reda, G., Abate, H., Mekonnen, M., Gared, A. & Beko, Z. (2023). Outcome of Poisoning and Associated Factors Among Patients Admitted at Referral Hospitals in Northwest Ethiopia. Open Access Emergency Medicine, 8;15:415-425. https://doi.org/10.2147/oaem.s414743

Saad, S., Abo El-Ata, A. & Abdu El-kader, H. (2021). Critical Care Nurses' Knowledge and Practices about Toxicological Emergencies. Port Said Scientific Journal of Nursing, 8(3): 68-83. 10.21608/pssjn.2021.75367.1108

Saeed, N. & Hussein, A. (2022). The Effects of Constructed Program on Nurses` Practices of Poisoning, Journal of Research in Medical and Dental Science, 11(5):39-41.

Salem,W., Abdulrouf, P., Thomas, B., Elkassem, W., Abushanab, D. & Rahman, H. (2023). Epidemiology, clinical characteristics, and associated cost of acute poisoning: a retrospective study from the emergency department of the largest referral hospital in Qatar. J Pharm Policy Pract.17(1):2325513. 10.1080/20523211.2024.2325513

Sayed, Y., Youssef, W., Alshekhepy, H& Elfeky, H. (2015). Nurses' Knowledge and Practices regarding Detaction and Management of Acute Drug Poisoning at Cairo University Hospitals. Egyptian Nursing Journal , 10(1):1-15.

Shehata, S., Elbqry, M., Mostafa, E., Abdelgeleel, N., & Elmansy, F. (2023). Emergency Nurses' Knowledge and Attitude towards Caring for Carbon Monoxide Poisoned Patients in Ismailia Governate, Egypt. Egyptian Society of Clinical Toxicology Journal, 11(1): 72-86. 10.21608/esctj.2023.192666.1027

Tassew, S., Feleke, D., Sisay Chane, E., Birile, T., Amare, A., Dessalegn, W. & Yegizaw, E. (2022). Knowledge, attitude and practice of nurses working in South Gondar zone hospitals toward initial management of acute poisoning. PAMJ—One Health, 7, (32):1-9 https://doi.org/10.11604/pamj-oh.2022.7.32.32311

Teym, A., Melese, M., Fenta, E., Ayenew, T., Fentahun, F., Tegegne, E. & Alamneh, A. (2024). Patterns, Clinical Outcome, and Factors Associated with Poisoning Outcomes among Poisoned Patients in Northwest Ethiopia. SAGE open nursing, 10, 23779608231226081. https://doi.org/10.1177/23779608231226081

Waktola, L., Melese, E., Mesfin, N., Altaye, K. & Legese, G. (2023). Prevalence of unfavorable outcome in acute poisoning and associated factors at the University of Gondar comprehensive specialized hospital, Gondar, Northwest Ethiopia: a hospital-based cross-sectional study. Frontiers in public health, 11, 1160182. https://doi.org/10.3389/fpubh.2023.1160182

Zaveri, J. & Chaudhari, A. (2019). Impact of educational training and workshop on knowledge, attitude, and practice of pharmaco vigilance in nursing staff of tertiary care hospital, Rajasthan. National J of Physiology, Pharmacy and Pharmacology. 9(6):530-533.

تأثير إرشادات تعليميه عن التدخلات التمريضيه للتسمم في أول ٢٤ ساعه علي أداء الممرضين والنتائج الصحيه للمرضي

نورا فارس محمد – شيماء مجدي عبدالله - رشا فتحي جاب الله

يُعد التسمم سببًا رئيسيًا للمرض والوفيات في جميع أنحاء العالم، حيث يُدخل المرضى إلى المستشفى في حالة حرجة لإنقاذ حياتهم في أسرع وقت ممكن بغض النظر عن نوع السم وكميته. لذا هدفت هذه الدراسة الي تقييم تأثير الإرشادات التعليمية حول التدخلات التمريضية للتسمم في أول ٢٤ ساعة على أداء الممرضين والنتائج الصحية للمرضى. وقد استُخدم تصميم بحث شبه تجريبي (قبلي/بعدي). وقد أُجريت هذه الدراسة في مركز مكافحة السموم بمستشفى جامعة بنها، القليوبية، مصر على عينة ملائمة من (٢٠٠) مريض و(٤١) ممرضة لهذه الدراسة. وقد استُخدمت أربع أدوات لتجميع البيانات: (١) استبيان لتقييم معلومات الممرضين، (٢) قائمة ملاحظه ممارسات الممرضين ، (٣) استبيان لتقييم اتجاهات الممرضين تجاه حالات التسمم ، (٤) استبيان تقييم النتائج الصحية للمرضى. وقد اظهرت النتائج بأنه كان هناك تحسن كبير ذو دلالة إحصائية في متوسط الدرجات الإجمالية لمعرفه الممرضين وممارساتهم وكذلك اتجاتهم فيما يتعلق برعاية مرضى التسمم خلال الـ ٢٤ ساعة الأولى طوال فترة ما بعد تطبيق الإرشادات التعليميه. كما أنه قبل تطبيق الإرشادات، كان لدى المرضى نتائج صحيه سيئة (٤٨,٥٪) بينما تحسنت تلك النتائج لتصبح جيدة بين (٨١٪) منهم بعد تطبيق الإرشادات. كما كانت الإرشادات التعليمية ذو تأثير فعال في تحسن معرفة الممرضين وممارساتهن واتجاتهم حيث كان هناك ارتباط كبير ذو دلالة إحصائية بين إجمالي معرفة الممرضين وممارساتهن واتجاهاتهم بعد تطبيق الإرشادات مقارنةً بذي قبل . بالإضافة إلى ذلك، شهد المرضى تحسنًا في النتائج الصحية لديهم بعد الإرشادات مقارنةً بما سبق. وأوصت الدراسة بالتدريب المستمر لطاقم التمريض وذلك لتحسين أدائهم وتحسين جودة رعاية المرضى.