



Assessment of Mothers' Knowledge and Practices Regarding Care of their Children with Accidental Household Poisoning in preschool age

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ABSTRACT

Accidental poisoning is a serious international problem. It is likely to remain one of the most common medical emergencies that confront physicians and casual medical offices at any time 90% of accidents poisoning involved children under the age of five years (*El-Emary et al., 2019*). **Aim of the study** this study aimed to assess mothers' knowledge and practices regarding care of their children with accidental household poisoning in preschool age. **Design:** A descriptive design was utilized in this study. **Setting:** This study was conducted at the Emergency Department of poisoning control center in Elkasr Elani Hospital. **Study subjects:** A purposive sample was 80 mothers accompanying their school-age children to the poisoning control center, in Elkasr Elani Hospital, for treatment of poisoning, **Data collection tools:** The data in this study collected by two tools Tool 1 : Structured questionnaire, It consists of three parts: Part I: Characteristics of the studied mothers, Part II: Characteristics of children Part III : Mothers' knowledge, This part was intended to assess mother's knowledge about children with accidental household poisoning. Tool 2 : Mothers' preventive and safety measures checklist tool: Part I: it was include a structured checklist sheet to assess the actual practices of mothers regarding home safety Part II: it assesses mothers' reported practices as regards first aid, **Results:** (46.3%) of studied mothers had their age ranged between 20 < 30 years old, two thirds (72.5%) of the study sample has been housewives, more two third (66.3%) of the study sample lived in the urban area, about (46.3%) of children ranged between 3 to 4 years old **Conclusion** The current study concluded that about two third of the studied mothers had unsatisfactory level of total knowledge regarding their children poisoning at home and two third of the studied mothers had an not adequate practices of total practice related to home poisoning of the children ,there was a statistically significant positive correlation between total mothers' knowledge score and total practice score **Recommendations:** Establish health education programs for mothers about accidental poisoning and appropriate first aid measures.

Key words: Mothers' knowledge and practices, Accidental poisoning & First aids

INTRODUCTION:

Poisoning is defined as a term used to describe an occurrence in which toxic substances reach the body through the mouth, blood vessels, food, or injections, causing the death and destruction of the

body's cells (*Saad, Abo El-Ata, & Abdu El-Kader, 2021*).

According to the pediatric fatality case review of the 37th annual report of the American association of poison control centers, children less than 3 years accounted for 31.3% of exposures to poisonings, and

children less than five years old were about 42.8% of human exposure. pediatric poisoning is considered a major problem in Egypt due to the heavy workload on emergency departments and hospital admission (*Sobeih et al., 2018*).

According to Poison Control Center Ain Shams Universities Hospitals (PCC-ASUH), pediatric poisoning indicated that children less than 15 years old represented 32.3% of cases (*Abdelhamid, 2021*).

One of the most common causes of unintended injuries to children worldwide is poisoning. Nearly 200000 individuals every year pass away from unintentional poisoning, according to the WHO. About 80% of these fatalities take place in developing and middle-income nations. Ten percent of all unintentional injuries to children in low- and middle-income nations are caused by accidental poisoning (*Ahmed et al., 2022*).

Acute poisoning affects 32.6 percent of children under the age of three and 44.2 percent of children under the age of five worldwide. It is the fourth reason for admission to the pediatric emergency room, after trauma, burns, and drowning (*Soave et al., 2022*).

The underlying causes of poisoning vary between nations and depend on a variety of factors, including demography, socioeconomic position of the local people, level of education, and local customs and beliefs. Additionally, different poisoning patterns may occur depending on the age and gender of the victims (*Alwan et al., 2022*).

Due to their natural curiosity and propensity to explore and investigate their surroundings, children are more likely than

adults to become poisoned. Since do not understand the hazard and possibly cannot read the warning label, they typically eat what they discover (*Tobaigy et al., 2020*).

The majority of pediatric poisonings include non- or minimally toxic substances, but on rare occasions, some are extremely toxic and necessitate prompt medical attention to avoid serious injury or death. According to the most recent data available, poison control centers nurses need to be knowledgeable about the treatment of poisoning and ready for the common causes of pediatric poisoning (*Lee et al., 2019*).

The type of poison, the amount exposed, the period after exposure, and the child's vulnerability all influence the treatment methods used. When treating hazardous ingestions, stabilizing the child comes first and should focus on the ABCs (airway, breathing, circulation). No matter how poisonous it may be, essential physiological functions must be maintained. Prevention is the answer to the issue of child poisonings. For improved patient management, nurses should be knowledgeable about emergency management, evaluation, antidote delivery, and supportive therapy (*Mohamed, 2020*).

Management should prioritize avoiding poisoning; nurses can discuss various preventive measures. To facilitate the protection of the child, the environment should be modified during infancy before she or he crawls. The nurse should teach caregivers to call the poison control center before instituting treatment if their child has been exposed to a toxic substance (*Perry et al., 2022*).

Good medical and nursing cares are the cornerstone of the assessment and subsequent therapy of possible poisoning in children and adolescents, as is the case with

any clinical pediatric practice. In most circumstances, a thorough history and examination, followed by supportive therapy as needed, will guarantee a positive outcome. Over-investigation with subsequent improper antidote therapy use may lead to harmful interventions that are not warranted (*Anderson, 2021*)

Nurses are typically the first health care providers to contact patients who have consumed poisons. When it comes to this early and critical judgment, they are frequently at the forefront. (*Sun et al., 2021*).

First aid for suspected poisoning, if the victim has swallowed a poison, do not make him vomit, this could harm him further, however, if the child starts to vomit spontaneously, turn him to lie on his left side to prevent the child from getting into the air passage., do not give him any food or drink unless advised. (*Alwan et al., 2022*).

AIM OF THE STUDY:

The study Aim

This study aimed to assess mothers' knowledge and practices regarding care of their children with accidental household poisoning in preschool age, through the following objective.

Research questions

1-What is the level of mothers' knowledge regarding the care of their children with accidental household poisoning at preschool age?

2- What is the level of mothers' practices regarding the care of their children with accidental household poisoning at preschool age?

SUBJECT AND METHODS:

The subject and methods for this study were portrayed under the four main items as follows:

- I- Technical design
- II- Operational design
- III- Administrative design
- IV- Statistical design

I- Technical Design:

The technical design included research design, setting, subject, and tools for data collection.

Research Design:

A descriptive design was utilized in this study.

Research setting:

This study was conducted at the emergency department of the poisoning control center in Elkasr Elani Hospital, affiliated with the Ministry of Health, which provide free services for all citizens, and consist of two floor; the first floor contains emergency department which provide first aid for poisoning conditions with 4 beds, and the second floor which contain intensive care unit(male) with 14 beds and intensive care unit(female) with 7 beds

Study subjects:

A purposive sample was used of 80 mothers accompanying their school-age children to the poisoning control center, in Elkasr Elani Hospital, for treatment of poisoning. They were eligible for being selected in the study sample according to the following Inclusion criteria:

mothers having children suffering from accidental household poisoning and their children aged from 3 < 6 years old for both genders regardless of their education level.

Sampling technique:

The sample size was calculated to estimate the prevalence of an expected rate of mothers' satisfactory knowledge or adequate practice regarding care of the children with accidental poisoning of 50% or higher using the open Epi software package for sample size calculation at a 95% level of confidence and 3.5 standard error, and accounting for a non-response rate of about 20, the required sample size turned to be 80 mothers

Tools of Data Collection:

There are two tools were utilized to collect the data during the study period.

First Tool: Structured questionnaire

It was designed by the researcher after reviewing the relevant literature and written in simple Arabic language. It consists of three parts: **Part I:** Characteristics of studied mothers such as age, level of education, job, and residence.

Part II: Characteristics of studied children such as age, gender, type of poisoning and birth order place, type of poison and route, history of previous similar incidents, and previous hospitalization of the child.

Part III: Mothers' knowledge

To assess the mothers' knowledge about care of their children with accidental poisoning. It included 30 questions about the definition of poisoning, risk factors, types, routes of poisoning, symptoms and signs, and severity..... etc.) *Home Safety Council (2019)*

Scoring system for Mothers' knowledge: according to the answers obtained from studied mothers

The correct response was scored one and the incorrect response was scored zero. For each area of knowledge, the complete correct response, the incomplete correct response, and the wrong response, these responses were scored, 2, 1, and zero degrees respectively, and the total score was 30. These scores were converted into percent scores. Mothers' knowledge was considered:

-Satisfactory if the present score was $\geq 65\%$ or more

-Unsatisfactory if $< 65\%$ (*Abel Galil, S.2018*)

Second tool: Mothers' preventive and safety measures checklist tool:

Preventive practice checklists were adapted & modified by the researcher after reviewing the related literature from *Home Safety Council (2019)*

It consists of two parts:

Part I: was include a structured checklist sheet to assess the actual practices of mothers regarding home safety as keeping toxic agents out of reach of children, safe storage of hazards materials, and not taking medication in front of children.

Protection child from poisoning at home consists of the following dimensions:

Make home safe from poisons (10 items), protect the child from medicines dangers (4 items), delimitate poisoning dangers from cleaning and chemical materials (10 items)

Scoring system for mothers' practice part I

For correct prevention done (Yes) take one degree and for wrong prevention done (No) take zero. For the total degree, the scores of items were summed and were (24) degrees and divided by the number of items.was considered:

- Adequate practice if the present scores were $\geq 65\%$ or more.
- Inadequate practice if less than $< 65\%$. (Abel Galil, S.2018)

Part II: to assess mothers' reported practices as regards **first aid** for household poisoning of their children in preschool age (first aid for poisoning by ingestion (through the mouth), inhalation (by breathing in), through contact with poisonous sprays, pesticide, insecticides.....etc) *Home Safety Council (2019), and Queensland Poisons Information Centre (2019).*

Maternal practices and first aid for poisoning consist of the following dimensions:

First aid for poisoning by swallowing (7 items), first aid for poisoning through the skin (4 items), first aid for poisoning through the eyes (5 items), first aid for poisoning through inhalation of toxic fumes (5 items), call the emergency if the child is (3 items)

Scoring system for mothers' practice part II

Complete correct practice, complete correct practice, and wrong practice were scored as follows 2, 1, and zero respectively for each area, and for the total scale, the scores of items were summed-up and the total was 24 divided by the number of the items. The score was converted into percent. The practice was considered:

- Adequate practice if the percent score was $\geq 65\%$ or more

-Inadequate practice if less than $< 65\%$ (Abel Galil, 2018)

Validity:

The tools of the study were revised by a panel of 3 expertise: professors of pediatric nursing from the faculty of nursing, Helwan University. Who reviewed the content of the tools for comprehensiveness, accuracy, clarity, relevance, and scoring and items recording, minor modification was done.

Reliability:

Numerical data were presented as mean, median, standard deviation (SD), and range values. Qualitative data were presented as frequencies (n) and percentages (%).

The reliability of the questionnaire was assessed using Cronbach's alpha reliability coefficient. Cronbach's Alpha was used to determine the internal reliability of the tool. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. Cronbach's alpha reliability coefficient for this tool was 0.78.

Mann-Whitney U test with Bonferroni's adjustment was used for pair-wise comparisons when the Kruskal-Wallis test was significant. Spearman's correlation coefficient was used to determine correlations between different variables.

The significance level was set at $P \leq 0.05$. Statistical analysis was performed with IBM® SPSS® Statistics Version 24 for Windows.

Ethical considerations:

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee, of the Faculty of Nursing at Helwan University. In addition, an official letter was obtained from the dean of the faculty of nursing, Participation in the study was voluntary and subjects were given full information about the study and their role before signing the informed consent. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time and confidentiality of the information where it couldn't be accessed by any other party without taking permission of the participants. Ethics, values, culture, and beliefs will be respected.

II- Operational Design:

Preparatory phase:

It included reviewing past, current, national, and international related literature and theoretical knowledge of various aspects of the study using books, articles, the internet, periodicals, and magazines to develop tools for data collection

Pilot study:

The pilot study was done on 10% equal to 8 mothers collected by the researcher. The sample to examine the clarity of questions and time needed to complete the study tools. No modifications were made after the analysis of answered sheets from mothers, so the pilot study sample was included in the total sample.

Field work:

The actual field work was carried out over six months starting from May (2022) until the end of October (2022), data collection was done 2 days/per week by the researcher on the morning shift. The researcher was available at the study sitting two days per week in the morning shift nearly 11:00 am to 1:00 pm. and met mothers to simply explain the purpose of the study, then distributed the tools and asks study subjects to fill it out, every mother took about 30-45 minutes to complete questionnaire sheet, the presence of researcher all the time to clarify any ambiguities and answer any queries, then, the tools were collected and checked for completeness.

III- Administrative Item:

Official permission was obtained from the dean of the faculty of nursing at Helwan University to the director of the poisoning control center to conduct this study, the permission letter includes the necessary data, the purpose & nature of the study, after an explanation of the aim of the study the permission was obtained from the general manger poisoning control center asking for cooperation and permission to conduct the study

IV- Statistical Item:

Data were coded for entry and analysis using SPSS statistical software package version 24. Data were presented using descriptive statistics in the form of frequencies and percentages. Nominal and ordinal variables were presented in the form of numbers and percentages. Interval and ratio variables were presented in the form of means and

standard deviations. for non-parametric variables. Person r was used to test the correlation between bivariate with interval and ratio variables. The

significance level was determined as ($p < 0.05$). (Non-significant at $p > 0.05$, statistically significant at $p < 0.001$. < 0.05 , High significant at $p < 0.001$).

RESULTS

Part one: sociodemographic characteristics of the studied mothers and their children with accidental household poisoning in preschool age.

Table (1): Number and percentage distribution of the studied mothers' according to their characteristics (n=80).

mothers' characteristics	N	%
Age		
20 < 30	37	46.3
30 < 40	28	35.0
40 or more	15	18.8
Mean±SD	34.16±5.81	
Mothers' Education level		
Illiterate	8	10.0
Read and write	20	25.0
Basic/ secondary education /	25	31.3
higher education	27	33.8
Mothers' Job		
House wife	58	72.5
Works	22	27.5
Marital status		
Marriage	59	73.8
Divorce	10	12.5
Widow	11	13.8
Residence		
Urban	53	66.3
Rural	27	33.8
Size of a family member		
3 < 5	58	72.5
5 < 7	12	15.0
7 or more	10	12.5

Table (1): Showed that less than half (46.3%) of the studied mothers had their ages ranged between 20 < 30 years with mean age (of 34.16±5.81) years old. Concerning the mothers' education level about one-third (33.8%) of them completed their higher education level. Regarding their occupation, more than two-thirds (72.5%) of the studied mothers were housewives. Moreover, two-thirds of them (73.8%) were married, and also regarding their residence, more than half (66.3%) of the

women in the studied mothers lived in urban areas. Concerning the size of family members about three quarter (72.5%) of them were 3- <5 of their family members.

Table (2): percentage distribution of Characteristics for the studied children (n=80)

Poisoning accident characteristics	N	%
Age		
3< 4 years	37	46.3
4< 5 years	17	21.3
5≤ 6 years	26	32.5
Mean± SD	4.46±2.15	
Gender		
Boys	51	63.8
Girls	29	36.3
Parents /family were present		
Mother	35	43.8
Father	12	15.0
Siblings	17	21.3
grandfather or grandmother	9	11.3
Nothing	7	8.8
Route		
Inhalation	32	40.0
Swallowing	34	42.5
Martial absorbed by Skin /Touch (skin or eyes)	14	17.5
type of substance toxic		
Cosmetic and personal care substance	11	13.8
Drugs substance	26	32.5
Cleaning and laundry products' substance	16	20.0
Insecticides substance	11	13.8
Chemicals substance	16	20.0
symptoms		
Diarrhea	48	60.0
Dizziness/ Drowsiness	25	31.3
Nausea/ loss of appetite	25	31.3
Eye or skin irritation	19	23.8
Thirst	10	12.5
vision disturbance	20	25.0
drooling of saliva or tears	7	8.8
Difficulty breathing	27	33.8
Fever	14	17.5
Paleness, redness, or yellowing of the skin	13	16.3

Poisoning accident characteristics	N	%
Increasing heart rate	9	11.3
Cramps	6	7.5
Unconsciousness	3	3.8
Increasing heart rate and lowering blood pressure	7	8.8

Table (2): illustrate the characteristics of the studied children, regarding their children demographic characteristics, the mean age of the child in the study was (4.46±2.15) years old half of the sample (46.3%) had their age ranged between 3 to 4 years old, concerning their gender about (63.8%) of the children on the study were boys, in relation to their children number among his siblings one half (50.0%) of the children on the study was a number 2 among his siblings concerning their who was with the children less than half (43.8%) of the children on the study with her mother, in relation to the method of poisoning swallowing and inhalation(42.5% and 40% respectively) the most common method of poisoning for the child on the study, regarding type of drugs substance toxic 32% drugs substance the main cause of poisoning between the children on the study, concerning signs and symptoms more than half (60%) of the child on the study had diarrhea.

Part two: Mothers' knowledge about the care of their children with accidental household poisoning in preschool age

Table (3): Percentage distribution of mothers' knowledge regarding poisoning at home (n=80)

Mothers' knowledge	Correct		Incomplete correct		Incorrect	
	N	%	N	%	N	%
Definition	24	30	22	27.5	34	42.5
Risk factors	18	22.5	15	18.75	47	58.75
types of poisons from drug	20	25	23	28.75	37	46.25
types of poisons the most commonly used at home	19	23.75	24	30	37	46.25
causes of poisoning	21	26.25	15	18.75	44	55
Routes	23	28.75	16	20	41	51.25
signs that may indicate poisoning	30	37.5	19	23.75	31	38.75
symptoms of mild severity	27	33.75	28	35	25	31.25
s symptoms of moderate severity	25	31.25	16	20	39	48.75
symptoms life-threatening	26	32.5	23	28.75	31	38.75

Table (3): shows mothers' knowledge regarding the child's poisoning at home, There were more than one-third (37.5 %) of mothers had correct and complete answers regarding signs that may indicate poisoning while more than one-third (35 %) of them had correct & incomplete answer regarding symptoms of mild poisoning while close to two third (62.5%) of them had incorrect answer regarding factors that determine the severity and the resulting poisoning and are related to the society, and more than half (58.75 %) of them had incorrect answer regarding factors that determine the severity and the result of poisoning and are related to the child, in addition to (55%) of the mothers had incorrect answer regarding the most common poisonous substances among children and cause poisoning.

Table (4): Percentage distribution of mothers' knowledge regarding poisoning at home (n=80)

Items	Correct	Incorrect
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	N	%	N	%
-Poisoning children's materials differentiate highly-salary countries from low-salary countries	19	23.75	61	76.25
-Deadly-poisoning rate is higher among the first year of children	28	35	52	65
-Most poisonous cases happen in children at home	22	27.5	58	72.5
-Male children are more endangered of poisoning than females	31	38.75	49	61.25
-Children who had been poisoned are less endangered of poisoning again	24	30	56	70
-Toxicity of most poisoning materials are being determined by the dose for every kilogram of the body weight	23	28.75	57	71.25
-Animal biting or bug stinging are not considered causes of poisoning in children in high/low over come	27	33.75	53	66.25
-Any substances can be toxic when ingested in large enough quantities	19	23.75	61	76.25
-A child's home environment can increase the risk of poisoning for example, old kennels that contain lead paint	16	20	64	80
-Plants with colorful leaves that can be attractive to children and harmful	15	18.75	65	81.25
-Charcoal tablets stop the poison from being absorbed but must be given within one hour to your child after the poison has been swallowed in order to be effective	24	30	56	70
-Charcoal tablets work with every toxic substance	38	47.5	42	52.5
-Charcoal works with every toxic substance	12	15	68	85
-If a battery has been swallowed, seek treatment from the emergency department of the hospital	28	35	52	65

Table (4): Regarding mothers' knowledge regarding the child's poisoning at home, about half of the mothers had correct answers regarding Charcoal tablets work with every toxic substance, Fuels such as kerosene are a common cause of poisoning in children in low-income countries, (47.5% and 46.25% respectively) while the majority of them had incorrect answer regarding, Charcoal works with every toxic substances and plants with colorful leaves that can be attractive to children and harmful(85% and81.25% respectively)

Table (5): Figure (1) Percentage distribution of mothers' total knowledge regarding the child's poisoning at home (n=80)

Total knowledge	N	%
Satisfactory	27	33.75
Unsatisfactory	53	66.25
Total	80	100

Figure (1): Percentage Distribution of mothers' total knowledge regarding the child's poisoning at home (n=80)

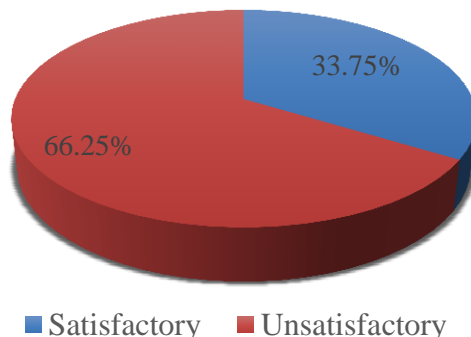


Figure (1): Represents that about two third (66.25%) of the studied mothers had an unsatisfactory level of total knowledge regarding the child's poisoning at home, while about one-third (33.75%) of them had a satisfactory level of total knowledge.

Part three: The actual mothers' preventive and safety measures regarding the care of their children with accidental household poisoning in preschool age.

Table (6): Percentage distribution of mothers' reported practices related to home poisoning of the child (n=80).

Maternal practices related to domestic poisoning of the child

Protection of the children from poisoning at home	Done		Not done	
	N	%	N	%
Home safety	27	33.75	53	66.25
-Keep all medicines and home products out of children's reach.	24	30	15	18.75
-Keep all medicines and home products in closed places	25	31.25	24	30
-Using safety measures on drawers and closets for keeping things that could be dangerous to the children.	26	32.5	15	18.75
-Preparedness to face emergency cases of poisoning.	23	28.75	27	33.75
-Keeping an emergency number for poisoning	20	25	15	18.75
-Storing all medicines in their original boxes.	27	33.75	24	30
-Not carrying medicines around in bags or pockets that may be reached by children.	29	36.25	6	7.5
-Not leaving young children without observation at all times.	31	38.75	24	30
-Not taking the medicine in front of the children	30	37.5	30	37.5
-Getting rid of unnecessary medicines or ones that have been expired	32	40	7	8.75

Table (6): Show mothers reported practice regarding follow-up protection of their child from poisoning at home, there were more than half (66.25 %) of the mothers did not make the home safe from poisons.

Table (7): Percentage distribution of mothers' reported practices related to home poisoning of the child (n=80).

Protection of the children from poisoning at home	Done		Not done	
	N	%	N	%
Medications safety	33	41.25	47	58.75
-Reading all the instructions before giving the child any medicines.	31	38.75	12	15

-Not convincing the child that the medicine is some kind of sweets	35	43.75	12	15
-Do not give the child someone else's medicine.	33	41.25	27	33.75
-Not giving the child the medicine in the dark.	34	42.5	24	30

Table (7): Show mothers reported practice about more than half (58.75%) of them don't protect their children from medicines dangers.

Table (8): Percentage distribution of mothers' reported practices related to home poisoning of the child (n=80)

Protection of the children from poisoning at home	Done		Not done	
	N	%	N	%
Safe storage of hazardous materials	28	35	52	65
Storing all medicines in their original boxes.	24	30	6	7.5
Storing all medicines out of children's reach.	21	26.25	13	16.25
Not using or storing home products around foods	28	35	18	22.5
Following all instructions when using home products.	26	32.5	18	22.5
Following all instructions when using chemical products.	31	38.75	9	11.25
Assuring ventilation when using chemical products.	30	37.5	23	28.75
Not leaving the product in children's reach, even for a little time (for example, answering the phone).	37	46.25	9	11.25
Not spreading insecticidal when children are around.	24	30	12	15
Teaching the child not to smell the can smell to identify what's in there.	29	36.25	9	11.25
Not putting poisons in bottles of drinks.	32	40	18	22.5

Table (8): Show mothers reported practice more than half (65%) of the mothers don't delimitate poisoning dangers from cleaning and chemical materials.

Part four: Mothers' preventive practices as regards first aid for household poisoning of their children in preschool age.

Table (9): Percentage distribution of mothers reported practices related to home poisoning of the child (n=80).

maternal practices and first aid for poisoning	Done		Not done	
	N	%	N	%
1-Ingested poisoning	25	31.25	55	68.75
2- skin poisoning	26	32.5	54	67.5
3- Eyes exposure	33	41.25	47	58.75
4-Respiratory exposure	39	48.75	41	51.25
5-Need to call the emergency	36	45	44	55

Table(9): Show mothers reported practice regarding follow-up mothers' practices and first aid for poisoning there were about to two thirds (68.75 %) of the mothers did not make first aid for poisoning by swallowing, close two-thirds (67.5%) of the mothers don't make first aid for poisoning through the skin, in addition to about three fifth (58.75%) of them don't make first aid for poisoning through the eyes, while, more than one half (51.25%) don't make first aid for poisoning through inhalation of toxic fumes, in addition to more than half (55%)of them don't Call the emergency.

Table (10): Frequency Distribution of Total Mothers Reported Practices Related to Domestic Poisoning of The Child (N=80).

Total practice	N	%
Adequate practice	31	38.75
Inadequate practice	49	61.25
Total	80	100

Table (10): regarding total practice more than half (61.25%) of the studied mothers had inadequate practice level of total practice regarding the child's poisoning at home, while approximately one-third (33.75%) of them had Adequate practice level of Total practice.

Figure (2): Represents the distribution of total mothers' Reported Practices related to domestic poisoning of the child (n=80).

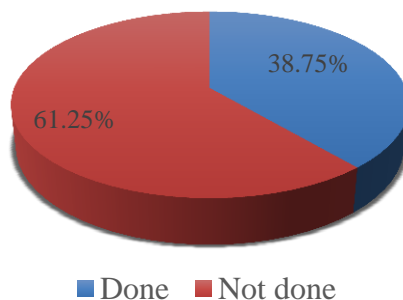


Figure (2): Represents that close two third (61.25%) of the studied mothers had an unsatisfactory level of total practice regarding the child's poisoning at home, while approximately one-third (33.75%) of them had a satisfactory level of total practice.

DISCUSSION

Accidental poisoning is a serious international problem. It is likely to remain one of the most common medical emergencies that confront physicians and casual medical offices at any time 90% of accidental poisoning involved children under the age of five years. Poisoning in children is always an accident due to a lack of supervision of the child or carelessness in leaving poisonous substances within the child's reach (*El Guindi., et al 2020*).

Children's injuries at home are increasingly being recognized as a public health issue that may be avoided with improved awareness, safe practices, and improvements to the home environment. Preschool children are particularly vulnerable to home accidents, and providing information to mothers about how to protect their children in the event of an accident has a significant influence on reducing the number of injuries among children. (*Melanie L. 2020*)

Demographic characteristics of mothers and their children with accidental household poisoning in preschool age

Regarding the demographic characteristics of the studied mothers, regarding the age. The mean age of the sample was (34.16±5.81) years old. Close to half of the sample (46.3) had their age ranged between 20 to 30 years old, while only about one-fifth (18.8%) age 40 or more years old. This finding agrees with *Moshtohory et al. (2019)*, who conducted a study on the "Effect of guiding program on mothers' health awareness regarding household poisoning of their children less than six years old in rural areas, in Egypt ", and found that 34% of mothers aged 25 to 30 years with a mean age of ±SD 33.5 ±2.9 years

Also, this finding agreed with *Elrahman et al (2021)*: in Egypt, Banha who carried out a study entitled "Mothers Perception regarding Poisoning among their Preschool Children" revealed that two-fifths of mothers aged from 25 to 30 years with mean age ±SD 28.34±6.1

Concerning their education, this study finding can clarify the fact that only about one-third (33.8%) of the sample completed their university education. and well-educated In agreement with the current study findings, *Nageh, et al, (2020)*: studied Mothers' knowledge and subjective practice toward most common domestic injuries among under-five children under" in Mansoura, and found that, one-third (30%) of the sample completed their university education

These findings disagree with *Anwar et al (2022)*: among rural Egypt Beni-Suef, who carried out a study entitled " Maternal Knowledge and Attitude about Home related Injuries in Children under Five Years " he found that 41.4% of them had secondary education, 16.9% had completed university education, 26.4% had postgraduate education, and only 8.9% were illiterate.

According to the current study findings regarding their occupation, more than two-thirds (72.5%) of the sample were housewives. while only more than one quarter (27.5%) were working. These findings agree *Bilgen Sivri B, Ozpulat F(2018)*: in Turkey, who conducted a study on "Mothers' knowledge levels related to poisoning, and found that more than two-thirds of mothers are housewives. These findings disagree with *Anwar et al (2022)*: among rural Egypt Beni-Suef " reported that 42.4% were housewives, and 57.6% were employed

Concerning to marital status of mothers, the current study revealed that close to three quarter (73.8%) of the sample were married, this finding agreed with *Elrahman et al (2021)*: in Egypt, Banha who conducted a study on the "Mothers Perception regarding Poisoning among their Preschool Children" and found that most of the studied mothers were married.

According to the current study findings regarding their residence, more than half (66.3%) of the women in the sample lived in urban areas. This could be explained by the presence of patients who come from adjacent urban areas, while patients living in other governorates

could receive medical help from poison centers close to their residences. This highlights the importance of educating mothers in rural and urban areas.

These findings disagree with *Nageh et al., (2020)*: who conducted a study in Egypt on "Mothers' knowledge and subjective practice toward most common domestic injuries among under-five children. And found that more than half of caregivers (50%) in rural areas

Also some children in the family, the present study finding showed that about three quarter (72.5%) of the sample were 3- <5 These findings agree *Zyoud et al. (2019)*, who conducted a study on "knowledge, attitude, and practices among parents regarding food poisoning across sectional study from Palestine, and found that slightly less than three-fifths of the studied sample had Numbers of family. were 3- <5

This finding agrees with *Abel Galil et al. (2018)*, who conducted a study on "Mothers's Knowledge and Practices Regarding the care of the Children with Accidental Poisoning at Zagazig University", and reported that approximately two-fifths of families had 3< 6 children.

Regarding the age of children, the present study finding showed that the mean age of the child in the study was (4.46±2.15) years old about half of the sample (46.3%) had their ages ranged between 3 to 4 years old, this might be due to criteria of selection of sample and poisoning is common in preschool children also, Children at this age are not able to differentiate between safe or dangerous objects and have a greater tendency to explore their environments and to put any things into their mouth . These findings agree *Zyoud et al. (2019)*, who conducted a study on "Knowledge, attitude, and practices among parents regarding food poisoning across sectional study from Palestine, and found that(50%) had their ages ranged between 2 to 4 years old

However, this finding disagreed with *Singh & Gurung. (2018)*, who performed a study" Factors contributing to kerosene oil poisoning in children, Lahore, Pakistan", and reported that approximately two-fifths of children aged three years old.

According to the current study findings Concerning their Gender about three-fifths (63.8) of the child in the study was boy, This might be due to the more boisterous pattern of behavior in boys, hence the increased likelihood of exposure to poisons This finding also was agree with the study done by *El Seifi et al. (2018)*, who conducted a study on the "Effect of a community-based intervention on knowledge, attitude, and self-efficacy toward home injuries among Egyptian rural mothers having preschool children" and reported that three-fifths of children were male.

This finding also disagreed with the study done by *Halil et al., 2019* who studied the Epidemiological and socio-cultural assessment of childhood poisonings at the pediatric emergency department of a tertiary-level state university hospital in Turkey and found that the male/ female ratio was about 1:1.

According to the current study findings the child number child's among his siblings one half (50.0%) of the children in the study a number 2 among his siblings This finding was disagree with the study done by *Abd El- Samea et al., (2021)*: who studied Mothers' perceptions regarding Poisoning among their Preschool Children in Toxicology Unit at Benha University Hospital agreed with these results and found that also less than a third of the studied children were the first son.

Regarding the person caring for the child, the present study finding showed that about two fifth (43.8%) of mothers are the ones caring for their child. This finding was agreed with *Assar et al. (2019)*, who conducted a study on "Acute poisoning in children, Pakistan" and reported that more than three-fifths of a mother is caring for their child.

According to the current study findings, concerning the method of poisoning Swallowing and Inhalation (42.5% and 40% respectively) are the most common method of poisoning for

the child in the study, these findings disagree with *Degeorge et al, (2020)*: who studied Prevention of unintentional childhood injury found that most children (96 %) were poisoned orally. From the researcher's point of view, this poisoning in children is a preventable cause of morbidity and mortality as children mostly ingest the poison with the belief that it is edible. A common fault is a parental negligence through careless labeling or unsafe storage of poisonous substances

These findings disagree with the current study findings, *Alruwaili et al (2022)*: who studied "Predictors of Unintentional Poisoning Exposure in Preschool Children: in Saudi Arabia, found that regarding materials that caused the previous poisoning, less than two-thirds (65%) of children were poisoned by kerosene. These findings also disagree with *Ahmed et al (2022)*: in Bangladesh who carried out a study entitled "Accidental poisoning in children": he found that Kerosene was the prevalent cause (33%) of accidental poisoning while insecticide/pesticide ranked second (26.5%) followed by medicines (17%) and household chemicals.

On the other hand, the results were contrary to *Alazab., et al (2019)*: who studied Risk factors of acute poisoning among children: A study done at a poisoning unit of a university hospital in Egypt with the exclusion of children suffering from any mental disabilities and presented similar findings that 18.5% of total admissions were children and poisoning was due to cleansing agents followed by medications then food poisoning. These dissimilarities in findings between studies might be because of differences in sample size, age, place, and also the duration of the studies.

The investigator's point of view is that childhood poisoning occurred more frequently in cases in which the child was alone and his mother was busy undertaking household or other necessary activities. Also, the advancement of technology and improvement of socioeconomic status led to more chemical products such as drugs, pesticides, bleaches, and cosmetics in homes. The negligence of mothers and inappropriate practices in dealing with such products and leaving them within reach of children led to an increase in poisonings among children. This information, suggests, importantly, that improved supervision may not be the most effective solution to the problem but also providing a safe environment is necessary.

According to the current study findings concerning signs and symptoms three fifths (60%) of the child in the study had diarrhea, these findings disagree with the current study findings, *Alruwaili et al (2022)*: who found that three fourth of children (75%) and more than two-fifths (41.94%) of their siblings were detected from vomiting and diarrhea

Mothers' total knowledge regarding the child's poisoning at home

In this survey, mothers' overall understanding of home accidents was largely insufficient, with just 33.75% of them having good knowledge. Because they still had domestic accidents, this low number may reflect how closely they oversee their children. This could be explained by mothers' incapacity to regulate the situation, resulting in mishaps due to circumstances beyond their control, as well as the pressures of modern society, which drastically reduces time spent with children in the ordinary home.

Also, These findings were in accordance with *Abel Galil et al., 2018* who studied Mother's Knowledge and Practices Regarding Care Of the Children with Accidental Poisoning at Zagazig University which was conducted at the poisoning control center in Zagazig University Hospital and found that slightly less than two-thirds of the mothers in the studied sample were having total satisfactory knowledge.

These findings disagree with *Anwar et al (2022)*: in Egypt, Maternal who carried out a study entitled "Knowledge and Attitude about Home related Injuries in Children under Five Years " found that Regarding the maternal knowledge about first aid measures, 16.6% of the mothers were not knowledgeable.

The investigator's opinion is that the marked percentage of the studied mothers' knowledge may be due to the high number of university-graduated mothers among this study sample; however, the percentage of the mothers who had incorrect knowledge can't be denied and needed to be corrected and elevated through interventional educational programs as the lack of mothers' knowledge and misconception not only affects the prevention and management of the poisoning event, but it also increases the complications, disability, and fatality.

-The actual mother's preventive and safety measures regarding the care of their children with accidental household poisoning in preschool age.

According to the current study findings regarding studied mothers' reported practice regarding follow-up protection of their child from poisoning at home, there were close two thirds (66.25 %) of the mothers did not make the home safe from poisons, from researcher's point of view, the parents often do not realize that the child can open a drawer or a drug container, or reach something at a certain height Thus, parents and child caregivers should expect anything from the child, and should be quite alert when attending to a child.

This finding agreed with *Farouk & Awadin, (2021)*: who studied "the effect of educational interventions regarding home accidents among children under the age of six on mothers in rural areas at shaybah, Zagazig city, Sharkia governorate, found that the majority of the studied mothers had inadequate poisoning first-aid practices

This finding disagreed with *Romeeh et al (2022)*: who studied mothers' awareness about poisoning prevention among their children under five years old in Egypt and found that "regarding studied mothers' total reported practices toward poisoning first aids this study revealed that slightly more than two-thirds of them had total satisfactory practices and about one-third of them had unsatisfactory practices which is a worrying percentage and need prompting interventions to raise their awareness about childhood poisoning first-aid practices.

According to the current study findings three fifth of mothers don't protect their children from medicines dangers, these results were in close relation to *Abel Galil et al., (2018)*: who found that slightly less than two-thirds of the mothers in the studied sample were having total adequate preventive poisoning practices (63.7%).

In disagreement with the current study findings, *Nageh, et al, (2020)*: studied Mothers' knowledge and subjective practice toward most common domestic injuries among under-five children under" in Mansoura, and found that localities from both urban and rural areas and stated that improper knowledge 75% of total scores. From the researcher's point of view, this discrepancy in results may be due to the different demographic and educational statuses of participants

According to the current study findings close to two-thirds of the mothers don't delimitate poisoning dangers from cleaning and chemical materials, From the researcher's point of view the main factors underlying children's exposure to poisoning accidents, the lack of supervision was the most common reported cause. This is a major cause reported in childhood accidents literature. Supervision does not mean just the presence of the mother or other caregiver at home with the child, but rather keeping an eye all the time on him/her since an accident occurs in seconds.

This finding agreed with *Hazazi et al (2021)*: in the Kingdom of Saudi Arabia who conducted a study on the "Knowledge and awareness of parents in the Kingdom of Saudi Arabia regarding unintentional home injuries in children" and found that moms' knowledge of where to keep hazardous materials and detergents out of reach of youngsters was accepted (71.88 percent)

Mother's preventive practices as regards first aid for household poisoning of their children in preschool age

According to the current study findings regarding studied mothers' total reported practices toward poisoning first aid this study revealed that slightly more than half of them do not make the first aid for poisoning by swallowing, skin, eyes, inhalation of toxic fumes, and don't call the emergency.

This finding agreed with, *Farouk & Awadin, (2021)*: who studied the effect of educational interventions regarding home accidents among children under the age of six on mothers in rural areas at Shaybah, Zagazig City, Sharkia Governorate found that the majority of the studied mothers had inadequate poisoning first-aid practices before implementation of the educational program.

Moreover, contrary to these findings with *Romeeh et al (2022)*: who studied the "Mothers' awareness about poisoning prevention among their children under five years old in Egypt and found that "regarding studied mothers' total reported practices toward poisoning first aids slightly more than two-thirds of them had total satisfactory practices and about one-third of them had unsatisfactory practices which is a worrying percentage and needs prompting interventions to raise their awareness about childhood poisoning first-aid practices.

CONCLUSION

The findings of the current study can be concluded as follows: two third of the study mothers were having unsatisfactory knowledge and adequate preventive practice about poisoning in children. There was a high statistically significant relation between mothers' total knowledge with education level and their job while statistically significant relation between mothers' total knowledge with age, and number of family member, There was a high statistically significant relation between total practice with education level and job, while statistically significant difference between total practice with their age, and numbers of family member.

RECOMMENDATIONS

Based on the results of the current study, the following recommendations were suggested.

- 1-Design educational program for mothers about accidental poisoning and appropriate first aid measures
- 2-Establish educational classes at poisoning center outpatient clinics focusing on improving their awareness regarding accidental poisoning and first aid measures, causes, risk factors, and methods of prevention and appropriate treatment.
- 3- Health teaching about access to Poison Control Center for information about different poison agents and their proper management.

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