Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 8, 6633-6648

Predictors Of Unintentional Poisoning Exposure In Preschool Children: A Case-Control Study

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Abstract

Aim of the study: examine the risk variables that contribute to accidental poisoning in preschool children. **Research design:** An exploratory, descriptive design was implemented. **Sample:** A convenience sample of 100 caregivers with children (1-60 months old) who have been diagnosed with unintentional poisoning and been admitted to the National Center for Clinical and Environmental Toxicology. **Data collection tools:** structured interview questionnaire with sociodemographic information about children and jobs Child's admission checklist complaints and poisoning predisposing factors checklist **Results:** Less than two-thirds of the children were male, more than one-third were female, and less than one-fourth were between the ages of 30 and 40 months. Furthermore, almost half of the youngsters lived in cities. Mothers cared for more than two-thirds of the children. There was a significant relationship between caregiver employment and education and the frequency with which children were poisoned. There was a relationship between the child's age and the frequency of poisoning exposure. There was a link between awareness of a drug's expiration date and educational level. **Conclusion**: Poisoning is caused by the interaction of children, caregivers, and environmental variables. Children who are younger, energetic men living in big households with working and secondary-educated caregivers are at a higher risk of unintentional poisoning. Because improperly kept harmful drugs are plentiful in the home, the environment is the greatest source of poisoning among children. **Recommendations**: To convey information about toxic products, prevention, first aid, and rapid management, the media should be employed.

Keywords: Unintentional Poisoning, Preschool Children, Rural, Urban, Toxicology, Risk factors.

Introduction:

One of the most prevalent and important topics in pediatric nursing is child poisoning. Poisoning is described as ingesting or being exposed to a harmful substance (1). Dayasiri, Jayamanne, and Jayasinghe (2018), on the other hand, described poisoning as a material that, when taken into the body, injures or kills the tissues and enzymes (2)

The American Association of Poison Control Centers (AAPCC) Toxic Exposure Surveillance System receives over 2 million reports of human poisoning exposures each year (TESS), with more than half occurring in children aged six and under. Almost all of these exposures are inadvertent and reflect children of this age group's propensity to put nearly everything in their mouths(1). One category of significant importance, unintentional

poisoning, constitutes about 2% of all injury deaths in developed countries and about 5% in less developed ones. According to an American survey, poisonings ranked fourth in unintentional fatality among children aged 1 to 6 years, following traffic accidents, fires, and drowning(2) .

According to Ruiz-Goikoetxea, child poisoning is a major cause of sickness in both developing and developed nations(3). Despite the effectiveness of various techniques to avoid unintentional poisoning in children, hazardous ingestions are nonetheless common. Poisoning is still a major public health problem, with most occurrences occurring in children under the age of six(4).

Toxic chemicals and environmental variables interact to poison children. Environmental risk factors typically identified include a caregiver's lack of understanding of a poisoning threat, incorrect storage of hazardous chemicals, and insufficient or inadequate supervision(5). More than half of all unintentional poisonings happen at home, where the chemical is conveniently available. However, a significant number of poisonings occur elsewhere, such as in the homes of grandparents or friends, schools, or healthcare institutions(6).

Because of their developmental characteristics, young toddlers are vulnerable to ingesting poison. Oral exploration is how infants and toddlers learn about their surroundings. Because the sense of taste is not discriminated against at this age, many unwanted substances are ingested. Furthermore, as toddlers and preschoolers develop autonomy and initiative, their interest and noncompliant behavior rises. Impression is a powerful motivator, especially when combined with a lack of risk information.(7)

Poisoning in children can have long-term psychological and physical implications, as well as large social costs. They were prevalent in low- and middle-income nations. Poisoning is responsible for 10% of all accidental injuries and 6% of disability-adjusted living years (8). When the child's primary carers are present, the assessment should take place. Finally, the entrance examination cannot be completed without the knowledge of caregivers, who can provide historical information concerning childhood illness.(9).

A poisoning may or may not necessitate emergency care, but a medical examination is always required to take proper action. Parents are encouraged to contact the poison control center before commencing any intervention (PCC(10)). Based on the first phone evaluation, the PCC advises the parents to either start therapy at home or transport the kid to an emergency clinic.(11)

Despite educational initiatives and public campaigns aimed at preventing unintentional poisoning in children, it remains a prevalent medical emergency in the pediatric population. (12). Despite advancements such as childproof prescription caps, childproof packaging, greater educational efforts, and enhanced knowledge of commonly consumed chemicals, unintentional poisoning fatalities continue to occur(13).

By offering health education to professions, nurses play an important role in poisoning prevention. Caregivers should also be taught on the proper storage of hazardous materials and the avoidance of poisoning (14). The job of the emergency department nurse is to be ready for quick intervention with all essential equipment. Time and speed are essential elements in poisoning recovery, and foreseeing probable issues and complications

may mean the difference between life and death.(15) .

Significance of the study:

Poisoning is one of the leading causes of emergency room visits. It is critical to identify and document epidemiological characteristics and other factors in children poisoning in order to determine appropriate preventative strategies(16). Poisoning in children is a major source of morbidity in both developing and wealthy countries. Despite the efficacy of several measures to prevent unintentional poisoning in children, hazardous ingestions remain a prevalent occurrence. (2). Children who have been involved in a poisoning event are more likely to have another one. (4)

Methodology:

Methodologically, this study utilized a descriptive and exploratory research approach. Unintentional poisoning in preschool children was the focus of the current investigation. The study was conducted at Cairo University's National Center for Clinical and Environmental Toxicology, which always provides 24-hour, seven-day-a-week care for children of all ages. A sample of 100 caregivers of children hospitalized at the National Center for Clinical and Environmental Toxicology for unintentional poisoning was included in the study. **Inclusion criteria:** 1. Both sexes, 2. Children age less than six years and 3. Children were admitted to the emergency unit with suspicion of accidental poisoning. **Exclusion criteria:** 1. Children with diseases like chronic encephalopathy, neuropathies and mentally retarded and 2. Children more than six years.

Content validity and reliability

After reading a lot of recent research on the topic, the researcher made a tool to investigate the risk factors that lead to accidental poisoning. The content of the data gathering tool was examined by a team of pediatric medical and pediatric nursing professionals. The tool's internal consistency was measured to see how well the different parts measure the same thing and match up with each other. Internal consistency is a way to figure out how reliable something is by putting together questions on a survey that measure the same thing. Cronbach's alpha is a common way to figure out how well the questions correlate with each other. Concerning the reliability of this study's tools, the coefficient alpha of the questionnaire sheet was 0.65, indicating that the questionnaire items had a moderate connection with one another.

Procedure

Cairo University's Faculty of Nursing has requested that the National Center for Clinical and Environmental Toxicology director allow the researcher official permission to collect the requisite data. The researcher described the purpose and nature of the study with each caregiver of children who met the inclusion criteria after obtaining permission from the head of the toxicology centre. Following that, all caregivers were asked to provide official written consent to gain their agreement and involvement. The researcher met with each caregiver one-on-one to collect sociodemographic information. Using tool part (a) Sociodemographic data, this took 10-15 minutes, then the researcher started assessing the child's complaints on admission using tool part (b) child's assessment complaints on admission, and this took 10-15 minutes, then the researcher assessed predisposing factors of poisoning using tool part minutes (c) Predisposing factors for poisoning and this took 10-15 minutes. The tool was completed in a session that lasted roughly 35-45 minutes. Each caregiver was met individually at the National Center for Clinical and Environmental Toxicology's inpatient ward or emergency unit.

This was done four days a week on Saturdays, Mondays, Tuesdays, and Wednesdays. From August 2013 through June 2014, the data collection process took eleven months.

Results:

According to this research, less than two-thirds of children were male, whereas more than one-third were female. Less than one-fourth of children's ages fell between 30 and 40 months, whereas most children's ages fell between 1 and 10, with a mean age of 37.31± 15.21 months. More than one-third of children weighed between 14 and 16 kilograms, whereas most youngsters weighed between 8 and 10 kilograms. Less than one-third of children in the same birth order table ranked as the third child, while the majority ranked fifth. More than half of children reside in urban areas, whereas fewer than half live in rural areas, as seen in the table (1).

Table (2) reflects a child's health status distribution on admission. More than three-fourths (77%) of the children had unstable vital signs at the time of admission, and the minority of them (23%) were stable. Concerning the level of consciousness, more than two-fifths of children (45%) were fully conscious, two fifths (40%) of children were semi-conscious, and a minority of them (15%) were unconscious. Regarding poisoning material, less than one third (31%) of poisoned material was kerosene, and the minority (2%) was paints/indoor plants. Approaching the poisoning mode, most children (96 %) were poisoned orally, while the minority (1%) were poisoned by inhalation. Regarding how the caregiver discovered that the child had been poisoned, more than one fourth (26%) of caregivers found the poisoning from vomiting and diarrhoea. In contrast, the minority (4%) discovered it from hyperthermia.

In the same table, in the matter of caregivers calculated amount of poisoning, more than three fourth (76%) of caregivers cannot calculate the amount of poisoning. In comparison, less than one fourth (24%) of caregivers calculated the amount of poisoning substance. Regarding the amount of poison, one third (33.33%) of poisoned substances is estimated to be equal to one glass, and the minority (12.5%) took about 10 pills. Half of the caregivers (50%) went to the hospital for immediate poisoning management, while the minority (7%) gave their children saline at home. In the matter of caregivers taking the material caused poison to the hospital, most caregivers (91%) did not take the poison material to the hospital. The minority (9%) took it to the hospital.

Table (3) delineates children and their siblings' assessment of the previous poisoning history. The majority (80%) of children and more than two-thirds (69%) of their siblings didn't expose previously to poisoning. Regarding the frequency of previous exposure of children to poisoning, more than two-thirds of children (70%) were poisoned once. Less than one third (30%) were poisoned twice, while concerning siblings exposed previously to poisoning, nearly three-fourths of them (74.19%) were poisoned once, and almost one fourth (25.81%) was poisoned twice. Regarding materials that caused the previous poisoning, less than two thirds (65%) of children were poisoned by kerosene, while insecticides or cosmetics caused no poisoning. Also, more than one fourth (29.03%) of siblings were poisoned by kerosene, and detergents poisoned the minority (6.45%). With concern to the mode of the previous poisoning, the majority of children and their siblings (100%) were poisoned orally.

Approaching the previous poisoning how to be detected, three fourth of children (75%) and more than two-fifths (41.94%) of their siblings were detected from vomiting and diarrhoea. The

minority (5%) of children and their siblings (6.45%) had poisoning seen from children's complaints of severe stomach aches. In immediate management of the previous poisoning, more than half (55%) of children's caregivers and more than two fifths (41.94%) of their sibling caregivers went to the hospital or physician.

It is clear from the table (3) that there were highly statistically significant differences between children and their siblings regarding material caused by previous poisoning (x^2 =18.668, P=0.000) and another considerable difference between them regarding immediate management of prior poisoning (x^2 = 19.139, P = 0.000). At the same time, there was no statistically significant difference between children and their siblings concerning the presence of previous poisoning, frequency of the previous poisoning and how caregivers detect the previous poisoning.

Table (4) illustrates the percentage distribution of caregivers' knowledge about poisoning; it was found that more than half of caregivers (52%) had information about poisoning, while less than two fourth of caregivers (48%) had no information about poisoning. Concerning their knowledge about the poisoning substance, most caregivers know that kerosene, insecticides and caustic substances (96.15%, 88.46%, 86.53% respectively), and the minority of caregivers (15.38%) mentioned cosmetics substances. With concern to the source of information about poisoning material, less than half of caregivers (46.15%) had information from television or radio, while the minority (3.85%) had information from relatives. Regarding whether the caregiver has an idea about the poisoning centre or not, about three fifths (60%) of caregivers hadn't an idea about the poisoning centre, while two fifths (40%) had an idea about the poisoning centre. Concerning the caregiver's source of knowledge about the poisoning centre, half of the caregivers (50%) knew previous attended the centre, while the minority (5%) of caregivers knew from relatives. More than half of caregivers (57%) reached the poisoning centre via taxi, while the minority (5%) reached via bus. Half of the caregivers (50%) had information about poisoning management, and the same percentage (50%) of caregivers had no information about poisoning management. Regarding management methods, less than half of caregivers (46%) mentioned giving eggs and milk for the child, while the minority (2%) mentioned that they must go to the physician.

Table (5) demonstrates the relationship between caregiver's work, education, providing care and frequency of exposing a child to poisoning. Concerning caregivers' type of work, more than two-fifths (43%) of children were exposed to poisoning for one time, and 11% of them poisoning occurred two times their caregivers were an employee. In the minority of children (4%) exposed to poisoning one time or three times, their caregivers had no job. Regarding caregiver's education, less than one-fourth of caregivers (22%) who had secondary education their children exposed to poisoning for one time. The minority (3%) of caregivers who can read and write to their children were exposed to poisoning twice.

More than half of caregivers (58%) were mothers of their children exposed to poisoning for one time. The minority caregivers (4%) were grandmothers or grandfathers. Their children were exposed to poisoning three times. It is evident from table (5) that there was a significant difference between the caregiver's type of work, education & the caregivers and the frequency of occurring poisoning among children (x^2=24.267 p=0.002, x^2= 24.000, p= 0.001, x^2= 20.711, p= 0.000 respectively).

Table (6) compares poisoned children in rural and urban areas regarding medication poisoning. It was evident from the table that all the caregivers (100%) of children in both urban and rural locations had medications at home. Regarding children's exposure to medication-related poisoning, most children in rural and urban areas (82.6 per cent and 85.2%, respectively) were not previously poisoned. In contrast, a minority was poisoned previously (17.4% and 14.8 %, respectively). All caregivers (100%) in rural and urban areas use medications for treatment. Less than half of caregivers (47.8%) in rural areas store medication in refrigerators, while more than one-third (35.2%) store medicine in wardrobes in urban areas. More than half of caregivers (58.7%) in rural areas and more than three-fifths of caregivers (61.1%) store medications in unclosed places in urban areas. Regarding the nature of medicines, more than three-fifths (65.2%) in rural areas and near three fourth (74.1%) in urban areas were pills.

There were no statistically significant differences between rural and urban children regarding the presence of medications at home, past exposure to medication poisoning, the purpose for using medications, the storage of medicines, and the safety of medication storage. There was a statistically significant difference between the type of poisoning and the child's level of consciousness (as $x^2 = 29.713$, $p = 0.02$). There was no statistically significant difference between the type of poisoning and vital signs ($x^2 = 7.320$ & $p = 0.503$).

There was a statistically significant association between the frequency of poisoning exposure and the child's age ($r = 0.178$, $p = 0.038$). There were no associations between birth order and child outcomes ($r = 0.675$, $p = 1.66$), child's residence ($r = 0.773$, $p = 0.069$) caregiver's works ($r = 0.14$, $p=1.66$), caregivers health status ($r = 0.04$, $p = 1.66$) and frequency of exposing children to poisoning.

There was a statistically significant correlation between knowledge about the drug's expired date and level of education ($r =5.975$, $p =0.014$) and caregiver's work ($r = 0.494$, $p = 0.029$). There was no statistically significant correlation between knowledge about the drug's expired date and the caregiver's health status.

Table (1) Percentage Distribution of Sociodemographic Characteristics of Children (N=100)

Items	N	%
Sex:		
Males	63	63
Females	37	37
Age / month:		
1<10	2	2
10<20	15	15
20<30	17	17
30<40	24	24
40<50	18	18
50<60	13	13
60<70	11	11
Mean ±SD	37.31 ± 15.21 months	
Weight / Kgm :		
8- <10	4	4

10-<12	12	12
12-<14	10	10
14-<16	35	35
16-<18	19	19
18-≤20	20	20
Mean ±SD	14.93 ± 2.91 kg	
Birth order:		
1st	22	22
2nd	28	28
3rd	30	30
4th	18	18
5th	2	2
Residence:		
Urban	54	54
Rural	46	46

Table (2) Percentage Distribution of Child's Health Status on Admission (N=100)

Items	N	%
Vital signs:		
Stable	23	23
Unstable	77	77
Level of consciousness:		
Conscious	45	45
Semi-conscious	40	40
Unconscious	15	15
Material of Poisoning:		
Drugs	22	22
Insecticides	14	14
Detergents	17	17
Kerosene	31	31
Caustic substances	11	11
Cosmetics	3	3
Paints / Indoor plants	2	2
Mode of Poisoning:		
Oral	96	96
Skin	3	3
Inhalation	1	1
Caregivers discovered the occurrence of poisoning from :		
Vomiting/Diarrhea	26	26
See child taking poisoning	21	21
Severe stomach-ache	17	17
Loss of consciousness	13	13

Child's cry & poison smell	8	8
Hyperthermia	4	4
All of the above	11	11
Caregiver calculated amount of poisoning:		
Yes	24	24
No	76	76
Amount of poison (N=24):		
One glass	8	33.33
One cup	7	29.17
5 pills	6	25
10 pills	3	12.5
Immediate poisoning management:		
Going to hospital	50	50
Eggs & milk intake	26	26
Trial of vomiting	17	17
Saline intake	7	7
Caregiver took poison to hospital:		
Yes	9	9
No	91	91

Table (3) Children and their siblings' assessment regarding to history of previous poisoning

Items	Child		Siblings		X^2	p-value
	N	%	N	%		
Previous Poisoning:						
-Yes	20	20	31	31	3.185	0.052
-No	80	80	69	69		
Frequency of the previous Poisoning:						
-Once	14	70	23	74.19	0.107	0.493
-Twice	6	30	8	25.81		
Material of the previous Poisoning:	13	65	9	29.03		
-Kerosene	6	30	2	6.45		
-Detergents	1	5	8	25.81	18.668	0.000***
-Drugs	0	0	8	25.81		
-Insecticides	0	0	4	12.9		
-Cosmetics						
Mode of the previous Poisoning:						
-Oral	20	100	31	100		
the previous poisoning was detected from :						
-Vomiting/Diarrhea	15	75	13	41.94		

-Severe stomach-ache	1	5	2	6.45	5.596	0.134
-Child's cry & poison smell	2	10	9	29.03		
-All of the above + hyperthermia + loss of consciousness + noticing the child	2	10	7	21.77		
Immediate management of the previous poisoning						
-Went to hospital or physician directly.	11	55	13	41.94	19.139	0.000***
-Saline intake to expel the poison.	9	45	2	6.45		
-Eggs& milk intake.	0	0	12	38.71		
-Trial to induce vomiting.	0	0	4	12.09		

*P ≤ 0.05
**P < 0.01
***P < 0.000

Table (4) Percentage distribution of caregiver's knowledge about Poisoning (N=100)

Item	N	%
The caregiver has information about poisoning		
-No	48	48
-Yes	52	52
If "yes", the answer:		
- Drugs	23	44.23
- Insecticides	46	88.46
- Detergents	20	38.46
- kerosene	50	96.15
- Caustic substances	45	86.53
- Cosmetics substances	8	15.38
Source of information about material of Poisoning (N=52):		
-T.V./Radio	24	46.15
-Books/Magazines	11	21.15
-Neighbors	8	15.38
-Grandparents	7	13.46
-Relatives	2	3.85
The caregiver has an idea about the poisoning centre:		
- No	60	60
-Yes	40	40
If "yes", the source of knowledge about poisoning centres:		
-Previously attended the centre	20	50
-T.V./Radio	8	20
-Neighbors	7	17.5
-Relatives	5	12.5
The caregiver reached the poisoning centre via:		

-Taxi	57	57
-Private car	23	23
-Motorcycle	15	15
-Bus	5	5

Table (5) Relationship between caregiver's work, education, which provides care and frequency of exposing a child to poisoning

Items	Once		Twice		Third		x^2	P-value
	N	%	N	%	N	%		
Type of job								
Doesn't work	4	4	1	1	4	4		
Housekeeper	20	20	0	0	0	0	24.267	0.002**
Farmer	7	7	0	0	2	2		
Worker	6	6	2	2	0	0		
Employee	43	43	11	11	0	0		
Caregiver's education								
Illiterate	13	13	9	9	0	0		
Read & Write (not taught)	21	21	3	3	0	0		
Primary education	0	0	0	0	4	4	24.000	0.001**
Preparatory education	3	3	0	0	0	0		
Secondary education	22	22	2	2	2	2		
University education	21	21	0	0	0	0		
Caregivers (provide care)								
Mother	58	58	12	12	0	0		
Father	15	15	0	0	0	0	20.711	0.000***
Parents	0	0	1	1	2	2		
Brothers/Sisters	2	2	0	0	0	0		
Grandmother / Grandfather	8	8	1	1	4	4		

**p = 0.01

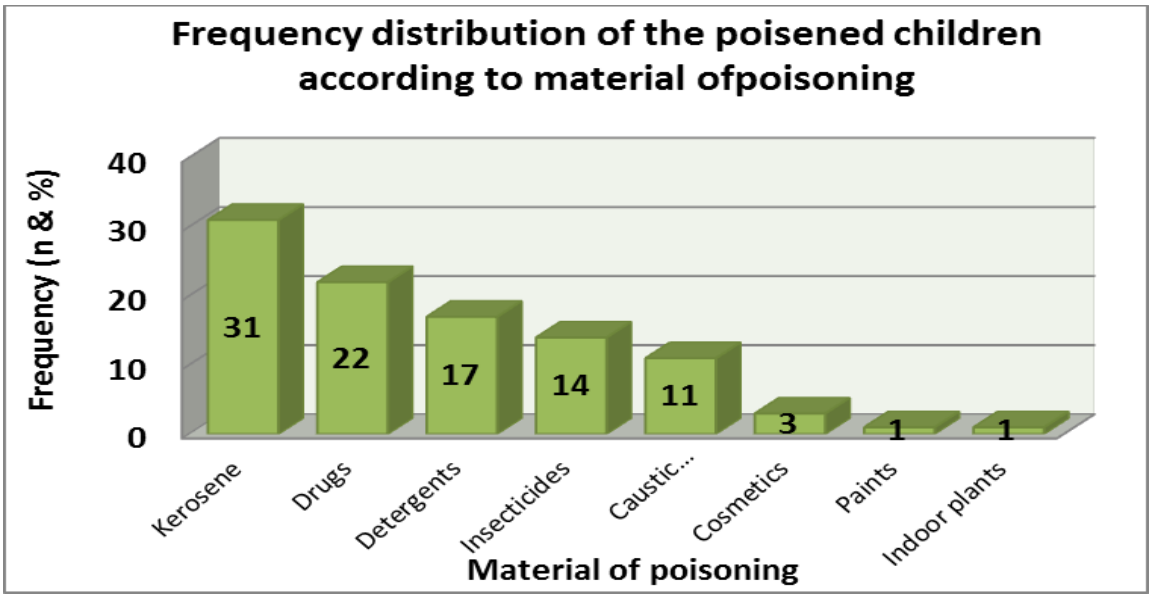
***p = 0.000

(6) Compare studied poisoned children regarding poisoning by medication in rural and urban

Medications	Rural		Urban		X^2	p-value
	N	%	N	%		
Presence at home						
-Yes	46	100	54	100	0	0
-No	0	0	0	0		
Previous Poisoning						
-Yes	8	17.4	8	14.8	0.123	0.468
-No	38	82.6	46	85.2		
Reasons for using medication						

-Treatment	46	100	54	100	0	0
Store of medication						
-Wardrobe	11	23.9	19	35.2		
-Home pharmacy	13	28.3	17	31.5	2.442	0.322
-Refrigerator	22	47.8	18	33.3		
Safety of medication storage						
-Closed	19	41.3	21	38.9	0.06	0.483
-Unclosed	27	58.7	33	61.1		
Nature						
-Liquid	16	34.8	14	25.9	0.928	0.228
-Pills	30	65.2	40	74.1		

Figure (3): Frequency distribution of the poisoned children according to the material of poisoning



Discussion:

According to the current survey, the average age of children was 37.31 ± 15.21 months, and fewer than one-fourth of children's ages ranged from 30 to 40 months. This result supported Andiran & Sarikayalar (2011), who studied the pattern of acute poisoning in childhood in Ankara and found that the proneness to accidental poisoning was higher in children aged 1 – 5 years than those younger than 1 year and ≥ 6 years of age. This finding also corresponded with Baaker (2010), who studied risk factors for childhood poisoning. He found that poisoning is more frequent in toddlers (1-3 years) followed by preschool age (3-5 years), also this result congruent with Manzar, Saad & Fatima (2010), who studied the research of etiological and demographic aspects of acute household unintentional poisoning in children - a sequential case series study from Pakistan who discovered that the mean age of all children was 36.9 ± 14.85. The majority of children were between the ages of 2 and 3 years.

This result contradicted many authors Read, Mohamed, Ramadan, Hoda and Amr

(2014), who studied risk factors of acute poisoning among children in a university hospital in Egypt, and they mentioned that poisoning occurs in children aged 1-60 months (Mean ± Std 29.5±12.2), Osaghae & Sule (2013) who studied Sociodemographic factors in accidental poisoning in children and they found that more than half of children ≤ 2 years are more likely to be poisoned accidentally as compared to more than two fourth of them aged 3 - 5 years.

Marchelet and Leiller (2012) evaluated the epidemiology of severe poisoning. They reported that unintentional poisoning occurs in children under the age of five, with a surge between the ages of one and two years(17). It was shown that children as young as two years old are more vulnerable to unintentional poisoning than children as young as three years old, or any other age for that matter. A two-year-old toddler is at a developmental stage defined by curiosity, restlessness, and impulsivity. As a result, the 2-year-old youngster engages in vigorous exploration of their whole surroundings, meticulously inspecting every thing in sight for form, texture, and taste. As a result, as predicted, such a youngster is at great risk of being poisoned or damaged by environmental by-products. Wong and Whaley (2014).

The current study showed that less than two-thirds of children were males, whereas more than one third were females. This result matched with many authors Keka, Ramosaj, Toro, Baloku, Sylaj, Lenjani and Kyseni (2014), Abd-Elhaleem and Al Muqhem (2014) and Narayan, Braja, Smita and Anil (2014) and Osaghae et al (2013). They mentioned a higher incidence of poisoning in males than in females. Read, et al (2013) clarified the male predominance of poisoning.

Concerning to child's residence, this study revealed that more than half of children lived in urban areas. In comparison, less than half of the children were lived in rural areas, this result corresponded with Modi, Dash, Satapathy and Mohanty (2014) who studied trends of acute poisoning cases in a tertiary care hospital in Odisha, India, and they found that the majority of children were lived in urban areas. Less than one-fifth of them lived in rural areas. Also, Read, et al (2013) found that about four-fifths of children lived in urban areas, and one-fifth of them lived in rural areas(18).

This finding is contraindicated with Hassan and Siam (2014), who studied the pattern of acute poisoning in childhood in Zagazig, Egypt. They found that less than one-third of studied children lived in urban areas. More than two-thirds of them lived in rural areas. Also, this finding disagreed with Keka et al, (2014), who studied acute poisoning in children; changes over the years, data of pediatric clinic department of toxicology Centre in Kosovo, and they found that more than two-thirds of cases come from rural areas while more than one-fourth of children come from urban areas(19).

Concerning the poisoning material, less than one-third of poisoned material was kerosene then less than one-fourth of poisoned material was drugs. This result agreed with Marchelet, et al (2012), who found that about three-fifths of poisoned material was kerosene. Also, Asghar, Anees & Mahmood (2010) studied accidental poisoning in children, and they found that more than one-fourth of poisoned material was kerosene(20). This finding disagreed with Abbas, Tikamani and Siddiue (2012), who studied accidental poisoning in children. They found that more than one-third of poisoned material was drugged then less than one-fifth of poisoned material was cosmetics.

With concern to materials which caused the previous poisoning, the present study showed that less than two-thirds of children were poisoned by kerosene, then less than one third were poisoned by detergents. Also, more than

one-fourth of siblings were poisoned by kerosene then about one fourth were poisoned by drugs or insecticides. The results go with Jian, et al (2014), who found that more than half of children and more than one-fourth of their siblings were poisoned by kerosene. This result matched with Hassan and Siam (2014) about the children. At the same time contradicted him about the siblings of those children as he found that the majority of children and their siblings were repeated by kerosene. In contrast, this finding contradicted Abbas, Tikamani and Siddiue (2012) and Marchelet and Leiller (2012), who found that most children and their siblings were poisoned previously by drugs than by kerosene.

More than two-fifths of children were alone because caregivers were away from home when the poisoning occurred. After all, more than two-fifths of them were at work, and the minority were at the market. This result matched with sule, et al (2013) and Baaker (2010), who discovered that more than half of the children were poisoned at home, even though caregivers were there at the time of the accident. Still, there was no attentive surveillance owing to housework.

Whereas Maklad, Emara, El-Maddah, and El-Refai (2012) showed that roughly two-thirds of children obtained poisoned items and were not monitored by their parents when they were poisoned.

In terms of marital status, more than two-thirds of parents were married, less than a fifth were divorced, and the remainder were widows. This finding matched Abd-Elhaleem, et al (2014) and Sabiha and Ener (2014). They discovered that more than three-fifths of caretakers were married, with the remainder being widows.

In terms of caregiver absence duration, a recent study revealed that less than half of caregivers are absent for more than eight hours each day, with the majority being out for two hours or less. This finding contradicted Read, et al (2013) who discovered that most caretakers were out from home for 2 to 4 hours every day, with the minority being away for less than 2 hours.

In terms of time spent at home if the caregiver does not work, the current study found that almost two-thirds of caregivers spend parts of the day at home, and more than one-third spend the majority of the day at home. More than one-third of children received care from grandfathers, grandmothers, sisters, or brothers. Nearly one-fourth of children received care from relatives when responsible caregivers were away from home. This finding matched with Jakson, et al (2013), who discovered that in the absence of caretakers, the majority of children were cared for by grandparents

The current study represented that there was a statistically significant difference between the type of poisoning and the child's signs and symptoms; this result matched with the outcome of Baseir, et al (2014), who found that there was a highly statistically significant difference between the type of poisoning and child's signs and symptoms. At the same time, this result contradicted Read et al (2013), who found no statistically significant difference between the type of poisoning and the child's signs and symptoms.

The current study showed a statistically significant difference between the type of poisoning and the caregiver's ability to calculate the amount of poison and the amount of poison the caregiver took to the hospital. This result contradicted Baaker, et al (2010), who found no statistical difference between children poisoned by kerosene, insecticides, caustic substances, detergent, cosmetics, medication and caregivers' ability to calculate the amount of poisoning that child took during poisoning.

Current research revealed a significant distinction between types of poisoning and poisoning management. This result was supported by Riordon, Rylance and Berry (2014), who discovered a statistically significant difference between any household product and poisoning management. The current study revealed a statistically significant positive link between the frequency of poisoning exposure and the child's age. This result is supported by Read, et al (2013), Schmertman, et al (2013), Who determined a statistically significant correlation between child age and poisoning recurrence?

The current study revealed a statistically significant positive link between knowing a drug's expiration date and the caregiver's education and occupation. This result is congruent with petridou, Kouri and Polychronopoulou (2011), who found a statistically significant relationship between knowledge of a drug's expiration date and the work of caregivers. There was no statistically significant link between knowledge of prescription expiration dates and the caregiver's health; this result matched with Rabab, et al (2010), who found no statistically significant correlation between knowledge about the drugs expiration date and caregiver's health status.

Conclusion:

Accidental kid poisoning is a major public health issue that causes morbidity and mortality, especially when such incidents are avoidable. Kerosene, pharmaceutical items, and home chemicals are the most common causes of unintentional poisoning since they are not supplied in adequate containers or maintained properly. Parental education, proper storage of potentially dangerous drugs, and enough parental monitoring may be necessary to prevent children poisoning.

The majority of the poisonings were caused by inadvertent ingestions by newborns and young children. The most involved agents were pesticides and pharmaceuticals. Good supportive care is essential in the treatment of children poisoning. Poisoning can be reduced by employing efficient preventative measures such as eliminating the poisoning agent from the environment (e.g., removal of poisonous plants and reduction of fuel sources such as bottled kerosene), reducing the toxicity of poisoning agents by packaging in nonlethal concentrations or doses and appropriate public education on safe practices of storing medications and toxic household chemicals, replacing the poisoning agent with one of lower toxicity (e.g., replacing aspirin with paracetamol), enforcing child-resistant packaging of necessary poisonous agents (e.g., medicines, household chemicals, and other toxins), and

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