Epidemiological Profile of Accidental Poisoning in Children, Retrospective Study on Benghazi Children's Hospital, Libya, 2022

Comment [U1]: Not on

Comment [U2]: Your title should capture the specific year covered in your in your retrospective study.

ABSTRACT

Aims: Poisoning in childhood is a significant public health problem globally. Most poisonings that occur in young children are unintentional and seem to be mainly accidental.
This study aimed to determine the clinical and epidemiological profile, and outcomes of accidental poisonings in children.
Study design: This observational retrospective study.
Place and Duration of Study: General ward and ICU of Benghazi Children's Hospital, from the 1st of January to the 31 of December 2021.
Methodology:The study included 232 children up to 15 years old (131 males, 101females) who were admitted with acute poisoning(if comatose or unstable).Complete demographical, clinical, and outcomesdata were recorded and analyzed using SPSS version 26.0 software.
Results:out of 232 children admitted for poisoning (56%) were drug poisoning, while 44% were non-drug poisoning. Children, less than 3 years were more liable for poisoning (61.2%). Males were poisoned more than females in all age groups (55.3%).The type of poisoning was found strong correlation with age and was higher in younger(*P*=.002 p-value<0.05), living in urban areas(*P*=.022 p-value<0.05). The results showed that there was a strong relationship between the typesof drugs and age groups (*P*=.000 p-value<0.05). Almost all cases (93%) were due to accidental/ unintentional poisoning. More than 88.3% of the cases were exposed to poisoning through the oral route. Overall, 29.3% of drug-poisoning children were asymptomatic, whereas all non-drug-poisoning children were symptomatic and most had mild symptoms. Most cases were discharged in good condition, and only one died of anti-psychiatric drug poisoning.
Conclusion: Findings confirm that children below 3 are more prone to accidental poisoning. Accidental toxic exposures could be avoidable by preventive measures. The cornerstone of management for children's poisoning is appropriate public education and raising awareness among parents about safe practices of storing medications and toxic household chemicals.

Comment [U3]: Why the bracket ?

Comment [U4]: Draw proper inferential statement, specific to the result you obtained.

Keywords: Epidemiological, Accidental Poisoning, Children, Libya

1. INTRODUCTION

Poisoning in childhood is a significant public health problem globally [1, 2, 3]. It represents one of the main causes of morbidity and even mortality in pediatrics, occurring in virtually every country in the world, including both developing and well-developed countries [4, 5]. Most poisonings that occur in young children are unintentional and seem to be mainly accidental [6, 7, 3]. Because children most of the time are at home, the home and its environment can be an unsafe place in which poisonous substances are unintentionally ingested [3]. Furthermore, children of preschool age need to explore and investigate their surroundings with all their senses, including taste [5,4]. Also, the curiosity of children leads

to accidental ingestion of unattended pills or different household products like; domestic cleaning products, pesticides, and other medicinal products. [2, 7] as well as due to parental negligence in keeping medicines and household chemicals; out of reach of children [3]

Poisoning is the deterioration of the body's functions by the ingestion of any substance that is toxic to the body or by overdosing on a nontoxic substance at a normal dose. The exposure may be acute or chronic, and the clinical presentation varies accordingly [2,3]. Thousands of children are subsequently evaluated in emergency department EDs mainly due to ingestion of household products, medicines, or pesticides, most of which are preventable [1] Poisonings, like other types of injuries, are understandable, predictable, and preventable events [6].

The extent of this problem and the underlying causes of poisoning are different from one country to the other, depending, amongst others, on the local customs and beliefs, demography, socio-economic status of the population in that area, and level of education. Besides, poisoning patterns may vary concerning the age and gender of the individuals [3, 5].

In addition, interrelated factors determine the incision of poisoning and its outcomes in a child. These include the type of poison, the dose, the formulation, the route of exposure, the age of the child, the presence of other poisons, the state of nutrition of the child, and the presence of other diseases or injuries [3]. Studies from developed countries predominantly demonstrate common household products as the most common cause of acute childhood poisonings and lower incidence of drugs and pharmaceuticals, possibly because of the use of child-proof blister packing and bottling of medicines. Even studies from South Africa have shown that the use of child-resistant containers for kerosene use has reduced the incidence of acute childhood poisoning significantly [8]

Although progress has been made regarding the prevention of accidental poisonings, by using more resistant packaging and raising awareness of the composition of toxic products, they are still frequent in children, particularly in those aged 2 to 3 years old [4]. Therefore, identifying the epidemiology aspects of acute/ accidental poisoning in children may help in improving and applying adequate preventive measures [4,1]. From this context, this study aimed to determine the epidemiological and clinical profile and outcomes of accidental poisonings in children up to 15 years at Benghazi Children's Hospital.

2. MATERIAL AND METHODS

This study was carried out with an observational retrospective analysis of the information of 232 patients up to 15 years old who were admitted with acute poisoning to the general ward or ICU (if comatose or unstable) of Benghazi Children's Hospital during the period from the 1st of January to the 31st of December 2021.

Benghazi Children's Hospital is the main medical institution that provides healthcare to young patients from (0 to 14 years old) in local communities in Benghazi and surrounding areas in eastern Libya and it receives around 400 patients per day at Out Patient Department OPD.

The data of this study were collected from this hospital's medical records and all data were identified and abstracted by medical record officers. This study only examined accidental/unintentional cases; food poisoning cases were excluded.

Comment [U5]: Your title was specific with the general objective of your work. So, it is expected that your statement of problem should also be specific in highliting the problem emanating from the locality where the cases were assessed. This will enable the reader to understand the necessity of the work and the specific problem the work intends to solve.

Reason: If you make the statement of problem to be broad, that means you need to broaden your scope.

So, is either you narrow down the statement of problem to the scope you covered or you broaden your scope.

Comment [U6]: What was your inclusion and exclusion criteria.

Comment [U7]: What was your sampling technique ?

The poisonings children were divided into 4 groups according to their age: (i) Less than 3 years; (ii) From 3 to 6 years, (iii) From 6 to 8 years; (iv) More than 8 years.

The collected data included: patient demographic profiles (age, gender, place of residence), the type of poison, the season when the event occurred, mode of poisoning (accidental/unintentional, intentional), route of poisoning (oral, inhalation, sting, other routes), and toxic gas inhalations were accepted as accidental poisoning. signs and symptoms (gastrointestinal, neurology, respiratory CVS, others (skin, mouth, lips, limbs), no symptoms), And the outcome for admission (admission to ICU, discharge, discharged against medical advice DAMA, expired,). In addition, incomplete data of some of the patients was collected by a phone call to their families.

Poisoning factors have been classified into two categories: Drug Poisoning (anti-psychiatric, CVS drug, analgesic and antipyretic, an anticonvulsant drug**,** unknown drug) and Non-Drug Poisoning (cannabis, kerosene, petroleum products, corrosive, carbon monoxide, scorpions sting, organophosphorus, rat poisoning and insecticide).

Statistical analysis of the data was performed using Statistical Package for Social Science (SPSS) version 26.0 software. The values of categorical variables were presented as numbers and percentages, and the comparison between the groups was done by using the Pearson Chi-Square Test. The statistical significance was accepted at the P-value was less than 0.05

Official approval has been taken by the institution where the study was conducted. All personal data were kept anonymous to ensure the confidentiality of records.

3. RESULTS

During the study period, the total number of children admitted for poisoning was 232 cases (56%, n= 130 cases) were drug poisoning whereas (44%, n= 102 cases) were non-drug poisoning.

Table 1 illustrates the results regarding the incidence of drug and non-drug accidental poisoning in various age groups and summarizes all demographic and clinical data of poisoned children. The maximum frequency for drug and non-drug poisoning was in the age group less than 3 years (61.2%, n= 142), followed by (33.1%, n= 59) in children aged 3-6 years. The result indicated that there was a strong correlation between age group and type of poisoning (*P*=.002 p-value <0.05). Figure (1) demonstrates the distribution of poisoned children according to age by years.

Based on the results males (55.3%, n= 129) were more than females (44.3%, n=103) in all age groups. (P = 0.56 > 0.05) there was no statistically significant difference found in gender. In addition, the results showed that there was no correlation between gender and type of poisoning (Pearson correlation value r=0.18)

The majority of cases (90.5%, n= 210) were living in the urban area (*P*=0.022 <0.05). There were statistically significant differences found in residency status. Moreover, there was a significant correlation between the types of poisonings and the place of living (Pearson correlation value 0.688)

Regarding the season of the incidences, cases of drug poisoning occurred more frequently in winter (30%, n =69) followed by the summer season, while in non-drug poisoning more cases occurred during the summer and fall seasons.

Comment [U8]: In this work, did you consider the total number of children admitted in the hospital within the year you studied so as to compare it with the number of children specific with the case of poisoning?

This will enable you to figure out the incidence or occurance of the case within the period of your study.

Comment [U9]: Please rephrase the statement. Know when to put or not to put bracket

Almost all cases of poisoning (93%, n=216) were accidental/ unintentional, whereas, (6%, n=14) cases were intentional poisoning, (attempted suicide in 9 cases, and 4 of them had multiple drug ingestion. The maximum age was 15 years for suicide attempts and the minimum age was 3 months for carbon monoxide poisoning. Nearly all poisoning cases (99.1%, n=230) occurred at home; only two cases occurred outside the home.

Findings displayed that the most common route of poisoning was the oral route (88.3%, n= 205), followed by (6 %, n=14) scorpion sting, while (5.6%, n=13) was the inhalation route of toxic chlorine gas used in weapons in 10 cases, two cases were poisoned because of the smoke of cannabis, and one by carbon monoxide poisoning.

Among 130 drug poisoning cases (4.7%, n=12) were the unknown drug types; while the remaining (90.7%, n=118) were identified drugs. Approximately (20.4%, n=24) were psychiatry drugs followed by CVS drugs (18.6 %, n=22), then analgesic and antipyretic drugs (13.5%, n=16). The results showed that there was a statistically significant correlation between the types of drugs and age groups (P =0.000 <0.05). Eighty-one cases were admitted to ICU (35%) most of them less than one day. A child one-year-old had an intractable convulsion and was put on a mechanical ventilator for hours. This type of poisoning was unknown, and another child 1year old with antipsychiatry drug poisoning died. However, all the others were discharged in good condition.

Furthermore, 102 cases were non-drug poisoning. The percentage of children poisoned by cannabis was (15.5%, n= 36). The second recorded poisoner was kerosene and petroleum product (9.9%, n= 23) followed by (6%, n=14) scorpion sting, then (4.7%, n=11), toxin chlorine gas, while (4.3%, n=10) corrosive household cleaning, and (3.4%, n=8) was pesticide (organophosphorus, insecticide, rat poisoning)

Out of 36 cases of cannabis, only 2 cases with a positive history of cannabis ingestion and positive gastric lavage were asymptomatic but all other caseswere symptomatic most common symptoms were drowsy, unsteady gait, and vomiting. All cases which acute encephalopathy in previously healthy children were kept in the ICU for observation. Four cases developed convulsions the others were drowsy and improved within 12 hours, and 10 cases had DAMA. While the other was discharged in good condition within 2 days of admission. kerosene was the second one, 3 cases had severe chemical pneumonitis admitted to the ICU maximum of 2 weeks. All cases were discharged in good condition after receiving conservative treatment. Corrosive household cleaning in 2 cases out of 11 had esophagitis, and one of them developed dysphagia inquiry oesophageal stricture. Out of 11 cases of toxic chlorine gas inhalation 1 case had low oxygen saturation admitted to ICU for 1 day. all 11 cases received IVF and only oxygen and were discharged in good condition, one had carbon monoxide inhalation and was 3 months of age and was admitted to ICU for one day and discharged after 3 days in good condition. 8 cases of pesticide (organophosphorus and Rat poisoning) were all discharged in a good condition another 1-year-old had Alcohol ingestion and received only oxygen and IVF and was discharged in a good condition. 14 cases of scorpion sting most cases from rural areas, all cases had mainly local pain, not receive anti-scorpion venom received only IV hydrocortisone and IVF only 1 case received IV antibiotic and all were discharged in good condition. the result indicated that there is a strong relationship between the type of non-drug poisoning and the age group of cases (p-value was 0.028) which is statistically significant.

Cases were laboratory tested using CBC, RFT, LFT, Blood sugar, and coagulation profile tests. Only 2 cases of cannabis poisoning were tested by arterial blood gases; both of them had an increase in their liver enzymes. One patient with paracetamol poisoning had low blood sugar another three patients had low s.k and abnormal coagulation profiles. No one

had tested the drug levels due to the lack of equipment. Most cases needed observation and IVF. Some cases needed antibiotics such as anticonvulsants and supportive. Only two cases received Atropine as an antidote in one case with Tramadol and the other with cannabis poisoning. In two cases paracetamol poisoned needed the antidote N-acetyl-cysteine. However, it was not given due to was not available but discharged in good condition.

Regarding symptoms, the current study's findings showed that the children with drug poisoning were asymptomatic in 68 (29.3%) which explains the high rate of early discharge, and all non-drug poisoning were symptomatic. Most of them had mild symptoms. The most common symptoms in non-drug poisoning were gastrointestinal GIT pain (49%, n=50) with neurological (36% n =37) or respiratory symptoms (22.5%, n=23), while in drug poisoning the neurological CNS symptoms (27.6%, n=36) were the most common symptoms.

Regarding the outcome majority were discharged in good condition. Discharged Against Medical Advice (DAMA) was for 38 cases (16.3%), while 81 cases were admitted to ICU. Cases with comatose were two, another two with intractable convulsion, one case died of anti-psychiatrist drug poisoning.

Regarding ICU admission, most cases were observed with or without supportive measures. No charcoal or antiemetic was given

Table 1: Demographical and Clinical Data of Poisoned Children According to Drug and Non-Drug Poisoning

Variable	Drug poisoning		Non-Drug poisoning	
	No	%	No	%
Age (years)				
Less than 3 years	84	64.6%	58	56.8%
3 - 6 years	33	25.38%	26	25.4%
6 – 8 years	3	2.3%	7	6.8%
8 years and more	10	7.6%	12	11.7%
Gender				
Male	66	50.7%	65	63.7%
Female	64	49.3%	37	36.3%
Place Of Residence				
Urban	127	79%	83	80.4
Rural	3	3%	19	19.6
Mode Of Poisoning				
Accidental/ Unintentional	116	89%	100	98%
Intentional	14	11%	2	1%
Route Of Poisoning				
Oral	130	100%	75	70.5%
Inhalation	0	0	13	12.7%
Sting	0	0	14	13.7%
Other Routes	-	-	-	-
Signs & Symptoms				
Gastrointestinal	13	1%	50	49%
Neurological	36	27.6%	37	36%
Respiratory	5	3.8%	23	22.2%
CVS	6	4.6%	3	2.3%
Others (skin, mouth, lips, limbs)	-	-	21	20.5%

NO Symptoms	68	52.3%	-	-
Outcome For Admission				
Admission to ICU	42	32.3%	39	38.2%
Discharge	105	80.7%	68	66.6%
Discharged Against Medical Advice DAMA	24	52%	34	33.3%
Expired	1	0.76%	-	-
Total	130		102	

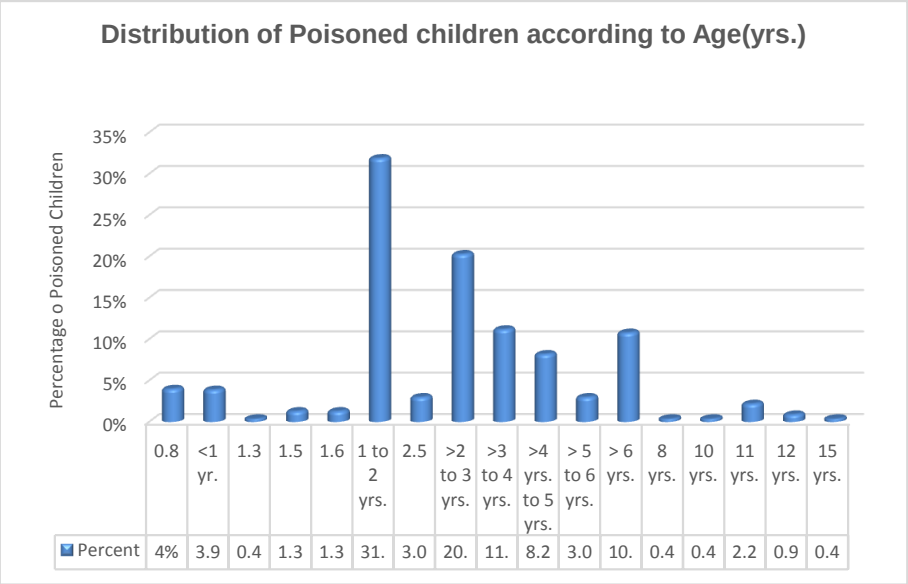

Fig. 1.Distribution of poisoned children according to age by years

4. DISCUSSION

Children's accidental poisoning is a common emergency worldwide. It is one of the important causes of preventable mortality and morbidity when determining epidemiological aspects of poisoned children. In the current study, males were more than females of all ages. This result was in line with the study of Hassan and Siam in Egypt 2014 (9), Alwan et al. study in Malaysia 2022 (5), and Lee et al. study in Taiwan 2019 (10), and disagrees with Kazanasmaz et al. study in Turkey 2019 (2) reported that female more than male while Berta et al. study in Italy 2020 (12) found that male and female were equal.

This study results indicated that nearly two-thirds of cases were less than three years old (61.2%), especially from 1-2 years old. These results were corresponded with the findings of several studies (2,4,5,9,10,12).

Comment [U10]: Highlight the rate or the frequency of posining in children recorded at Benghazi Children's Hospital, Libya and further compare it with other hospitals, maybe in libya or other part of the world.

Be specific with the occurence among different subject and discuss it in line with poison incidence recorded in other places.

You have to also compare the dynamics and variation of the poison incidence in other places

Comment [U11]: Please cite properly

Comment [U12]: Please look at how best to present your citation

This study showed no statistically significant differences regarding the effect of gender on the number of poisoned cases. Significant differences were found between the age groups and between the types of poisoning.

Almost all cases of poisoning occurred at home. These results agreed with the results of several previous studies (5,10,9, 11). The majority of cases in this study were living in urban areas which was in disagreement with the study conducted by Hassan and Siam in Egypt (2014) (9), which reported that the number of poisoned children was higher in rural areas than that in urban areas.

Comment [U13]: Why the full stop?

Various studies (2,9,10,12,) have reported that most of the poisoned cases amongst children occurred accidentally. This is consistent with the findings of the current study, which reported that (93%) of poisoned cases were accidental/ unintentional, whereas (6%) were intentional poisoning, (attempted suicide in 9 cases, and 4 of them had multiple drug ingestion). Furthermore, this study also indicated that the most common route of poisoning was the oral route (88.3%) these have shown similarities in what previous studies were carried out in some different countries (9,10,12).
The finding of this study also demonstrated that more than a half of cases were drug poisoning. In contrast, the findings of other studies reported that non-drug poisoning was more than drug poisoning. (4,12,10). The current study revealed that (97%) of the poisoned cases were single drug poisoning and (3%) were multiple drug poisoning which is consistent with (Hassan and Siam, 2014) results who found that in the majority of cases, (91%) were ingested single drug and (9%) were multiple drugs poisoning (9). Also, that was in agreement with (Lee et al., 2018) who reported that patients ingested single drugs were higher with (79%) and multiple drugs were (19.1 %) (10).

The neurological drug in 29 cases (24.5%) 4 cases anticonvulsant drug, (20.3%, n=24) was psychiatry drug followed by CVS drugs (18.6 %n=22), then analgesic and antipyretic drug (13.5%, n=16).These findings were in agreement with the (Hassan and Siam, 2014), study where neurological drugs were in (29.4%) of cases, analgesics in (22%) of cases, and CVS in (13.2 %) (9). Also, the results agreed with the results of (Lee et al., 2018) study which found that antipsychiatry drugs were (29.6%) followed by analgesics drugs (16.1%) and CVS (11.8%). In a Turkish study (2019) the most common drug associated with children's poisoning was an anticonvulsant more than an analgesic (2). While an Italian study (2020) was in disagreement with the previous findings; where analgesics were the first drug responsible for children's poisoning (20.8 %), followed by Psychiatry (18.2 %) then CVS (12.6%) (12).

The most common non-drug poisoning cases; Cannabiswas numberone responsible for non-drug poisoning cases which is approximately (%35) of all cases, with roughly (16.3%). This result was similar to the result of (Hassan and Siam, 2014), representing about 24% of a total of 930 acutely cannabis intoxication in preschool children. Also, it is similar to the result of a French study by (Claudet et al., 2017), seems to link the incidences of poisoning to the changing consumer trends and increased concerns about the availability of the substances responsible for children poisoning in markets raising a real public health issue (13).

Kerosene poisoning represents (21.5%) of nondrug poisoning, then toxic chlorine gas (10.7 %) which was used in the weapon that happened in the area of the last war in Libya both need preventive measures, (9.8%) corrosive household cleaning in 10 cases then organophosphorus and insecticide 8 cases (7.8%), carbon monoxide poisoning only in one case (0.09%). This finding was similar to (Mutlia et al 2010) who reported that petroleum was responsible for (13%) of cases and, a small number of carbon monoxide poisoning cases (14). This agrees with the results of many developing countries' studies and disagrees with

the Egyptian study (9) where the pesticide was the most common poisoning suspect. This also disagrees with the Romanian study (2018) where household corrosive products; For instance, carbon monoxide and insecticide were the most commonly responsible products which disagreed with the Taiwan study (2019) where carbon monoxide was more common than pesticides and unknown products in (5.7 %) of all cases. In Turkey chemicals were the most common reason for poisoning, especially the corrosive rat poisoning then pesticide and carbon monoxide in (5.8 %) (2). However, in our study scorpion sting was responsible for poisoning in 11 cases (4.7%) of total poisoning cases and no snake bite results. This finding disagrees with Turkey's study where scorpion in 16 cases (13.2%) and snake in 7 cases (5.8 %) (2).Also disagree with Taiwan's study (2019) where snake bites were found in 12 cases and no scorpion sting was found there (10).

According to the current study's results on drug poisoning, patients were asymptomatic in 68 (29.3%), which explains the high rate of early discharge and all non-drug poisoning were symptomatic. Most of them with mild symptoms, agreeing with the Taiwan study (2019) where more than (50%) were asymptomatic and had CNS and GIT symptoms. The most common symptoms were; drowsy, vomiting, and confusion which were similar to the study in Egypt(2014) which did not agree with most cases of corrosive ingestion that had only local ulceration of the mouth except 2 cases had GIT bleeding, and one developed oesophageal stenosis. This study's results regarding the symptoms of the illness disagree with the Romanian study (31%) developed oesophageal stenosis. Cases of organophosphorus and insecticide ingestion which doing well are only a result of early seeking of medical advice and gastric lavage done for them.

Regarding treatment, all cases received IVF; charcoal as a chelating agent 0%. This result disagreed with Turkey's study where only 61 (50.2%) received only IVF and (17.4 %) received IVF and charcoal as chelating agents, and in Taiwan charcoal was used in (5.4%). Also, our finding disagrees with the Italian study where charcoal was used in 126 cases most frequently with analgesics and cardiovascular drugs, and gastric lavage done in the current study in 107 cases was positive in 36 cases (33.6%). This was similar to the result of the Italian study where gastric lavage was done in 12 cases exposed to the analgesic drug, and several Benzodiazepine poisoning cases received an antidote. However, it disagrees with the Italian study where they used Flumazenil as an antidote, I received N–N-acetylcysteine as an antidote needed in a paracetamol poisoning case when an antidote was not available. This was inconsistent with the results of a Romanian study; they had 6 cases that needed and received an antidote and the outcome was good, the regarding outcome majority of their patients completed the treatment period and were discharged in good condition,

one case expired due to antipsychiatry drug poisoning (0.43%), these findings disagree with the Romanian study (2018) had 2 deaths of organophosphorus poisoning cases, and drug poisoning was higher than (0.6%) due to organophosphorus poisoning (4)

5. CONCLUSION

It can be concluded from this study that accidental poisoning's highest incidence was noticed among children below 6 years old, especially 1-2 years and the mortality rate was 0.43%. Additionally, there was a strong relationship between age group and type of poisoning, and between the types of poisonings and residences of the status. Antipsychiatry and cannabis were the most commonly involved in the poisoning. Many accidental toxic exposures could be avoidable by preventive measures. To put it briefly, the cornerstone of management for children's poisoning is appropriate public education on safe practices of storing medications and toxic household chemicals, using child-resistant containers, and keeping medicines and household chemicals; out of reach of children. Furthermore, raises the awareness among

parents about the potential harms related to cannabis and Kerosene exposure through organized measures in the community.

Disclaimer: - This manuscript Title & Abstract was presented in a Conference.

Conference name: 1st Tripoli Conference on Medical Technologies - TCMT
Available link: - file:///C:/Users/Editor/Downloads/Book+of+Abstracts.pdf

CONSENT (WHEREEVER APPLICABLE)

All authors have read and approved the content and they agree to submit it for consideration for publication in the journal.

ETHICAL APPROVAL (WHEREEVER APPLICABLE)

This study obtained approval by the Faculty of Public Health, University of Benghazi. All procedures performed in the study involving human participants followed the ethical standards of the institution.

REFERENCES

1. Mintegi S, Azkunaga B, Prego J, Qureshi N, Dalziel SR, Arana-Arri E, Acedo Y, Martinez-Indart L, Urkaregi A, Salmon N, Benito J. International epidemiological differences in acute poisonings in pediatric emergency departments. Pediatric emergency care.2019; 35(1):50-57.
2. Kazanasmaz H, Kazanasmaz Ö, Çalık M. Epidemiological and sociocultural assessment of childhood poisonings. Turkish Journal of Emergency Medicine. 2019;19 (4): 127-131
3. Ahmed A, AlJamal AN, Mohamed Ibrahim MI, Salameh K, AlYafei K, Zaineh SA, Adheir FS.. Poisoning emergency visits among children: a 3-year retrospective study in Qatar. BMC Pediatrics. 2015;15(1):1-7.
4. Nistor N, Frasinariu OE, Rugină A, Ciomaga IM, Jităreanu C, Ştreangă V. Epidemiological study on accidental poisonings in children from northeast Romania. Medicine. 2018;97(29): e11469
5. Alwan IA, Brhaish AS, Awadh AI, Misnan A, Rahim NA, Tangiisuran B, Abdul Majid MI. Poisoning among children in Malaysia: A 10-year retrospective study. PLoS one. 2022;17(4): e0266767.
6. Gill AC, Kelly NR. Pediatric injury prevention: Epidemiology, history, and application. U: UpToDate, Duryea TK, ed. UpToDate [Internet]. Waltham, MA: UpToDate. 2019
7. Isac R, Gafencu M, Nastasie IA, Stroescu R, Olariu C, Mihailov D, Doros GG. P375 Accidental poisoning in pediatric patients–latest follow-up.2017: A178-A178
8. Saikia D, Sharma RK, Janardhan KV. Clinical profile of poisoning due to various poisons in children of age 0–12 years. Journal of family medicine and primary care. 2020;9(5): 2291-2296.
9. Hassan BA, Siam MG. Patterns of acute poisoning in childhood in Zagazig, Egypt: an epidemiological study. International scholarly research notices. 2014 (2014).

Comment [U14]: While presenting your inferential statement, please highlight the gap in your work and recommendation fir further investigation.

Your conclusion also should be succint.

Comment [U15]: Please highlight the scientific body where the committee of Faculty of Public Health in your school adopted the guidline for scientific investigation with patient clinical case files.

This will enable the reader to understand the necesary scientific ethics that was adhered to in the course of the investigation.

Also, mention the ethical approval number issued by the committee.

10. Lee J, Fan N, Yao T, Hsia S, Lee E, Huang J, et al. Clinical spectrum of acute poisoning in children admitted to the pediatric emergency department. Pediatrics & Neonatology. 2019; 60(1):59-67.
11. Agarwal G, Bithu K, Agarwal R. An epidemiological study of acute poisoning in children in a tertiary care hospital of western Rajasthan, India. Int J Contemp Pediatrics. 2016; 3:1249-1251.
12. Berta GN, Di Scipio F, Bosetti FM, Mognetti B, Romano F, Carere ME, Del Giudice AC, Castagno E, Bondone C, Urbino AF. Childhood acute poisoning in the Italian North-West area: a six-year retrospective study. Italian journal of pediatrics. 2020;46(1):1-9.
13. Claudet I, Mouvier S, Labadie M, Manin C, Michard-Lenoir AP, Eyer D, Dufour D, Marie-Jeanne Study Group. Unintentional cannabis intoxication in toddlers. Pediatrics. 2017:140(3).
14. Mutlu ME, Cansu A, Karakas T, Kalyoncu MU, Erduran ER.Pattern of pediatric poisoning in the east Karadeniz region between 2002 and 2006: increased suicide poisoning. Human & experimental toxicology. 2010;29(2):131-136.