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Assessing Nursing Students' Knowledge of Pediatric Poisoning Management: A Cross-Sectional Study in Basrah

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Abstract

Background: Poisoning is a critical global health issue and a leading cause of morbidity and mortality among children. The severity of poisoning depends on the type and quantity of the toxic substance ingested. Effective management requires adequate knowledge, particularly among nursing students who will be future healthcare providers.

Objective: This study aims to evaluate the level of knowledge among nursing students at the University of Basrah regarding the management of pediatric poisoning.

Methods: A descriptive cross-sectional study was conducted at the College of Nursing, University of Basrah, from November 12, 2023, to March 18, 2024. A total of 200 third- and fourth-year nursing students were selected using a non-probability sampling technique. Data was collected through a structured, self-administered questionnaire, which assessed socio-demographic characteristics, knowledge about poisoning, and therapeutic interventions. Statistical analysis was performed using SPSS version 20.

Results: The findings revealed that 70% of nursing students demonstrated poor knowledge regarding pediatric poisoning and its management. Among the participants, 77.5% were female, and 91.5% lacked prior information on poisoning. The results highlight a significant knowledge gap in recognizing and managing children's poisoning cases.

Conclusion: The study identified a deficiency in nursing students' understanding of pediatric poisoning, emphasizing the need for enhanced educational interventions. Integrating poisoning management topics into nursing curricula may improve students' preparedness and competence in handling such cases.

Recommendations: The Council of College Deans should incorporate pediatric poisoning topics into the nursing curriculum to enhance student knowledge and clinical preparedness.

What is already known about the topic?

Pediatric poisoning is a common and preventable emergency: Accidental poisoning is a significant health concern in children, especially those under the age of five. It often results from exposure to medications, cleaning products, pesticides, and household chemicals.

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Introduction

Poisoning occurs when harmful substances enter the body through various routes, including ingestion, inhalation, injection, or absorption through the skin (Shahkolai et al., 2019). It can be intentional or accidental, with unintentional poisoning being more prevalent in low- and middle-income countries (Hassan & Siam, 2014). Poison is any substance that can impair physiological function, either locally or systemically (Getie & Belayneh, 2020).

Children are particularly vulnerable to poisoning due to their innate curiosity and tendency to explore their surroundings (Amena & Widad, 2016). The World Health Organization (WHO) has identified poisoning as a leading cause of childhood morbidity and mortality (Thundiyil et al., 2008). Poisoning can be classified into three main categories: unintentional, suicidal, and homicidal. Unintentional poisoning occurs when individuals are inadvertently exposed to toxic substances without intent to cause harm (Gururaj, 2022). Common toxic agents include corrosives such as drain cleaners and multipurpose detergents, as well as hydrocarbons like gasoline, kerosene, and lighter fluid (Emergency Department Factsheet, 2022).

Nurses and healthcare professionals working in emergency departments frequently encounter poisoning cases. Their knowledge of initial evaluation and management is crucial in determining patient outcomes (Lewis-Abney, 2000). Proper training in poisoning management is essential to equip emergency nurses with the necessary skills to provide immediate and effective care (Jissir & Hassan, 2015).

Given the critical role of nurses in poisoning management, assessing their knowledge is vital to identify gaps and develop targeted educational interventions. This study aims to evaluate nursing students' knowledge regarding the care of children with poisoning, as they will play a key role in future healthcare delivery.

Materials and Methods

Study Design and Setting

A descriptive cross-sectional study was conducted between November 12, 2023, and March 18, 2024, at the College of Nursing, University of Basrah.

Sample and Sampling

A purposive sample of 200 nursing students was selected from a total of 242 students who completed the questionnaire. Participants were third- and fourth-year nursing students enrolled at the College of Nursing, University of Basrah.

Measurement Instrument

A self-administered questionnaire was used to assess nursing students' knowledge and therapeutic measures related to poisoning in children. The questionnaire consisted of three sections:

1. **Demographic Information:** Included age, academic year, gender, and prior knowledge of poisoning.
2. **Knowledge Assessment:** Contained 14 multiple-choice questions assessing students' understanding of poisoning.
3. **Therapeutic Measures:** Included 11 questions evaluating knowledge of poisoning management.

Responses were recorded using a Likert scale ("I Know," "Not Sure," and "Don't Know"). Participants completed the questionnaire within 15 to 20 minutes.

Data Collection and Analysis

Data were collected through self-administered surveys and analyzed using IBM SPSS Statistics version 20. Descriptive statistics, including frequency and percentage analyses, were applied to summarize the data. A t-test was used to compare knowledge levels and therapeutic measures among nursing students, with a significance level set at $p = .011$.

Ethical Considerations

The study was approved by the Scientific Committee of the College of Nursing at the University of Basrah. Informed consent was obtained from all participants, and confidentiality of data was ensured.

Results

Demographic Characteristics

The study included 200 nursing students, with a majority being female (77.5%) and 22.5% male. The participants were predominantly in their third year (54%), while the remaining 46% were fourth-year students. The majority (47%) were between 18 and 21 years old, followed by 42.5% aged 22–25 years, 6.5% aged 26–29 years, and 4% aged 30 years or older. Regarding prior knowledge of poisoning, 91.5% of students reported having no information, while only 8.5% indicated prior awareness.

Knowledge and Therapeutic Measures

Table 1 presents the distribution of nursing students' knowledge scores on poisoning in children. The majority (90.5%) demonstrated poor knowledge, with mean scores of 19.32 (± 3.265) out of a possible 42. Only 9.5% exhibited moderate knowledge, and none scored in the "good" category.

Table 1. Overall Nursing Students' Knowledge about Poisoning in Children

Scale	Mean (M)	Standard Deviation (SD)	Score	N	%	Assessment
Poisoning Knowledge (14 Q)	19.32	3.265	Poor (14-23.33)	181	90.5	Poor
			Moderate (23.34-32.66)	19	9.5	
			Good (32.67-42)	0	0.0	
Therapeutic Measures (10 Q)	17.19	3.668	Poor (10-16.66)	87	43.5	Moderate
			Moderate (16.67-23.33)	105	52.5	
			Good (23.34-30)	8	4.0	
Overall Knowledge (24 Q)	36.47	5.884	Poor (<40)	140	70.0	Poor
			Moderate (40-56)	59	29.5	
			Good (>56)	1	0.5	

Factors Influencing Knowledge

Table 2 shows the regression analysis of factors predicting nursing students' knowledge of poisoning. The findings indicate that academic stage (β = 0.118, p = .011) was a significant predictor of knowledge levels. Other variables, including gender, age, and prior knowledge, were not significant predictors.

Table 2. Factors Predicting Nursing Students' Knowledge Regarding Poisoning

Variables	Unstandardized Coefficients (B)	Standard Error	Standardized Coefficients (Beta)	t	Sig.
Gender	-0.069	0.083	-0.061	-0.832	0.407
Stage	-0.008	0.069	0.118	1.112	0.011*
Age	0.020	0.045	0.032	0.436	0.663
Prior Information	0.066	0.123	0.039	0.538	0.591

*p < 0.05 (Significant Predictor)

The results indicate that most nursing students in Basrah University demonstrated inadequate knowledge of pediatric poisoning and its therapeutic interventions. The study

highlights the need for enhanced curriculum modifications to improve nursing students' preparedness for poisoning management.

Discussion

Poisoning is a significant public health concern and constitutes a substantial proportion of emergency service cases. Effective management requires timely and accurate first-aid measures to prevent severe complications and mortality (Shahkolai et al., 2019). Awareness and preventive strategies are essential to enhance poisoning management and reduce its adverse outcomes. Providing appropriate first-aid measures can be lifesaving and should be a fundamental component of healthcare education (Hassan & Siam, 2014). This study's findings align with those of Tavolacci et al. (2008), who reported that a sufficient level of knowledge is essential in managing poisoning cases. Similarly, Molan (2022) found that nursing students at Basrah University exhibited a lack of fundamental knowledge regarding poisoning cases. Consistent with these results, Hussien et al. (2022) revealed that students had inadequate knowledge of poisoning management, as evidenced by their low scores. Rutto (2011) also demonstrated that sufficient knowledge of poisoning is necessary for effective healthcare delivery.

Conversely, findings from studies conducted in Kenya and Saudi Arabia (2018) contradict this study, as they indicated that a high percentage (70.1%) of students correctly identified airway management as the priority in treating acute poisoning (Hakami et al., 2018). El Sayed et al. (2015) reported that nurses had insufficient knowledge of the initial management of acute poisoning (73%). However, this percentage was significantly higher than the findings from a Cairo-based study, which reported that only 48.5% of nurses had adequate knowledge (El Sayed et al., 2015). These discrepancies may be attributed to educational curricula, diagnostic capabilities, and socioeconomic factors.

The insufficient knowledge among nursing students in Basrah may be due to the absence of first-aid courses and poisoning management training in their curriculum. Despite its limitations, this study is valuable as it is among the first to evaluate nursing students' knowledge regarding poisoning cases in Basrah.

Conclusion

The present study highlights a significant knowledge gap among nursing students at Basrah University regarding pediatric poisoning and its management. The findings

suggest that integrating poisoning-related courses into the nursing curriculum can improve students' knowledge and preparedness for handling poisoning cases effectively.

Recommendations

It is recommended that the Council of College Deans incorporate poisoning management topics into the nursing curriculum to enhance nursing students' competency in addressing poisoning cases.

DECLARATION SECTION

Availability of data and material: Data is available at the request of the corresponding author.

Funding: We have not received any funding to execute this research study nor the rigorous procedure of collecting data and other associated processes to conduct this study.

Conflict of Interest Statement: None

Authors' Contribution: All authors have read and approved the manuscript.

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References

Amena, H. J., & Widad, M. (2016). Assessment of knowledge about priorities of nurses' responsibilities at emergency departments in Baghdad teaching hospitals. *IOSR Journal of Nursing and Health Science, 5*(1), 66-70.

El Sayed, Y., Youssef, W., Alshekhepy, H. A., & Elfeky, H. (2015). Nurses' knowledge and practices regarding detection and management of acute drug poisoning at Cairo University Hospitals. *Egyptian Journal of Nursing, 9*(4), 120-130.

Emergency Department Factsheet: Accidental poisoning in children. (2022).

Getie, A., & Belayneh, Y. M. (2020). A retrospective study of acute poisoning cases and their management at the emergency department of Dessie Referral Hospital, Northeast Ethiopia. *Drug, Healthcare and Patient Safety, 12*, 41-50.

Gururaj, N. (2022). *NIMHANS BISP Fact Sheet*.

Hakami, F. A., Alqubaysi, A. I., Bilal, A. A., & Alharbi, M. G. (2018). Assessment of knowledge toward initial management of acute poisoning among medical students in Riyadh City, KSA. *The Egyptian Journal of Hospital Medicine, 70*(3), 503-506.

Hassan, B. A., & Siam, M. G. (2014). Patterns of acute poisoning in childhood in Zagazig, Egypt: An epidemiological study. *International Scholarly Research Notices, 2014*, Article ID 245279. https://doi.org/10.1155/2014/245279

Hussien, A. A., Emery, S. E., Labeeb, S. A., & Marzouk, S. A. (2014). Nurses' knowledge and performance regarding care for children with poisoning at emergency units. *Assiut Scientific Nursing Journal, 2*(3), 115-122.

Jissir, S., & Hassan, H. (2015). Effectiveness of an educational program on nurses' knowledge about nosocomial infection: Case-control study. *Kufa Journal for Nursing Sciences, 5*(1), 40-50.

Lewis-Abney, K. (2000). Overdose of tricyclic antidepressants. *Critical Care Nurse, 20*(5), 69-74.

Molan, J. A. S. (2022). First aid knowledge of Basrah Nursing College students in poisoning cases. *Acta Scientific Medical Sciences, 7*(6), 1-7.

Rutto, J. K. (2011). Nurse's knowledge, attitude, and practice on the initial management of acute poisoning among adult casualties: Study at Accident and Emergency Department, Kenyatta National Hospital, Kenya (Doctoral dissertation, University of Nairobi, Kenya).

Shahkolai, F. R., Bandehelahi, K., Shahanjarini, A. K., & Farhadian, M. (2019). The factors related to mothers' beliefs and behaviors concerning the prevention of poisoning among children under the age of five, using the Health Belief Model. *Turkish Journal of Pediatrics, 61*(5), 749-756. https://doi.org/10.24953/turkjped.2019.05.014

Tavolacci, M. P., Ladner, J., Bailly, L., Merle, V., Pitrou, I., & Czernichow, P. (2008). Prevention of nosocomial infection and standard precautions: Knowledge and source of information among healthcare students. *Infect Control Hosp Epidemiol, 29*, 642-647.

Thundiyil, J. G., et al. (2008). Acute pesticide poisoning: A proposed classification tool. *Bulletin of the World Health Organization, 86*, 205-209.

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