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A study to assess the knowledge, attitude and practice of mothers related to poisoning among under five children in selected hospital, Chennai.

Ariya S Kurup [1]*, Dr. Sathiyalatha Sarathi [2], Dr. V. Hemavathy [3]

[1] Ph.D Scholar, Department of Paediatric Nursing, Bharath institute of Higher Education and Research, Chennai, Tamil Nadu, India.

[2] Supervisor, Vice Principal, Department of Obstetrics and Gynaecology Nursing, Sree Balaji college of Nursing, Bharath institute of Higher Education and Research, Chennai, Tamil Nadu, India.

[3] Principal, Department of psychiatric Nursing, Sree Balaji college of Nursing, Bharath institute of Higher Education and Research, Chennai, Tamil Nadu, India.

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ABSTRACT

Introduction: Mothers' knowledge about poisoning is significantly influenced by their educational background, socio-economic status, and the age of their children. **Aim of the study:** The study aimed to assess the knowledge, attitude and practice of mothers related to poisoning among under five children in selected hospital, Chennai. **Methodology:** This study employed a descriptive design. The study was conducted at a selected hospital in Chennai, with a total of 120 mothers of children aged below five years participating in the study. A convenient sampling technique was used to select participants who met the inclusion criteria, which included mothers of children aged below five years who were willing to participate in the study. Mothers of children older than five years or those unwilling to participate were excluded from the study. **Results**: The study assessed mothers' knowledge, attitude, and practices (KAP) regarding poisoning in children under five years. The results revealed that 66.67% of mothers demonstrated good knowledge, 75% had a positive attitude, and 70.83% followed good safety practices. However, 25% of mothers exhibited average levels in all three areas, and 8.33% displayed poor knowledge, negative attitudes, and inadequate practices. The correlation analysis showed positive relationships between knowledge and attitude, and between attitude and practice, indicating that better knowledge leads to more positive attitudes and safer practices. **Conclusion:** The study concluded that majority of mothers have good knowledge, positive attitudes, and follow appropriate safety practices regarding poisoning prevention in young children, there is still room for improvement.

INTRODUCTION

Childhood poisoning remains a significant public health concern globally, particularly affecting children under the age of five. The inherent curiosity and exploratory behavior of young children, coupled with their tendency to mouth objects, place them at increased risk for accidental poisoning. According to the American Association of Poison Control Centers, over 65% of the approximately 2.3 million reported poisoning cases involve children under 19 years of age, with the highest incidence occurring in children aged four and younger Sivri & Özpulat (2015). This period of rapid development and exploration coincides with a greater likelihood for unintentional ingestion of hazardous substances found in the home environment, such as medications, cleaning products, and other chemicals.

Research indicates that the most common substances implicated in childhood poisoning vary by region but frequently include hydrocarbons, pesticides, and medications. For instance, studies have shown that kerosene is often a leading cause of poisoning in young children in many developing countries (Singh & Gurung, 2018), as its presence in households and its use in everyday activities are quite prevalent. Additionally, hydrocarbon poisoning, particularly from household items like gasoline and cleaning agents, features prominently in pediatric poisoning cases (Modi, 2014) Thilakavathi & Elangovan, 2018). The study by Raza et al. corroborates this, identifying a higher risk of poisoning associated with inadequate supervision and unsafe storage practices within the home (Raza et al., 2022).

Socio-economic factors also play a crucial role in the incidence and outcomes of childhood poisoning. Families living in crowded conditions or those with limited access to education regarding poison risks appear to have a higher incidence of poisoning cases (Raza et al., 2022). Moreover, the presence of other family members taking medications can lead to increased risks due to a child's propensity to imitate adult behavior, which is more pronounced around the age of two years, further compounding the problem of medicinal poisoning (Dayasiri et al., 2018). This pattern suggests that interventions targeting the education of

caregivers about safe storage and handling of these substances could be invaluable in mitigating risk.

Mothers' knowledge about poisoning is significantly influenced by their educational background, socio-economic status, and the age of their children. Studies indicate that many mothers lack adequate knowledge about the safe storage of potentially toxic substances such as household cleaners, medications, and plants. For instance, Shahkolai et al. demonstrated that various demographic factors, including the mother's age and education level, affect their understanding and preventive behaviors regarding poisoning (Shahkolai et al., 2019; . Similarly, Alqahtani et al. highlighted that parental perceptions and educational interventions could significantly enhance knowledge about poisoning prevention Alqahtani et al., 2021). Collectively, these findings underscore the necessity for targeted education to improve mothers' awareness and practices related to poisoning risks.

Furthermore, the attitudes of mothers towards the risks of poisoning can also shape their preventive behaviors. Mahmood's study revealed that mothers' belief systems and perceived risks of poisoning significantly correlated with their parenting practices (Mahmood, 2013; . Another study emphasizes that positive attitudes about prevention can lead to lower rates of child poisoning, as proactive behaviors—such as storing toxic substances out of reach—are more likely to be adopted by mothers who understand the dangers (Mahmood, 2013; Hussein, 2018). Furthermore, practical experiences, such as those reported in community-based surveys, have shown that mothers often underestimate the risks associated with common household items, indicating a gap between knowledge and practice (Shriyan et al., 2014).

In terms of practical application, integrating effective educational programs aimed at mothers appears essential. Community-based health programs that educate mothers on the dangers of poisoning and develop their skills in poison prevention have demonstrated effectiveness in altering knowledge and practices in significant ways Alqahtani et al., 2021). Thus, health education initiatives tailored to the unique cultural and socio-economic contexts of families can lead to improved health outcomes for children.

Moreover, the socio-economic context in which mothers raise their children plays a crucial role in shaping their practices regarding potential poisoning risks. Factors such as economic pressures, access to healthcare education, and support networks can profoundly influence mothers' ability to implement safety measures in their homes. For example, mothers from lower socio-economic backgrounds may have limited access to educational resources, which can exacerbate risks of accidental poisonings in children (Shahkolai et al., 2019; Alqahtani et al., 2021). Thus, multifaceted approaches that include socio-economic support alongside education may be necessary to mitigate risks effectively.

In conclusion, improving mothers' knowledge, shaping positive attitudes, and fostering proactive practices regarding poisoning risks among children under five is paramount for enhancing child health outcomes. Policymakers and health educators should focus on creating comprehensive, culturally sensitive educational programs that address these areas to reduce the incidence of child poisoning.

AIM OF THE STUDY

The study aimed to assess the knowledge, attitude and practice of mothers related to poisoning among under five children in selected hospital, Chennai.

METHODOLOGY

This study employed a descriptive design to assess the knowledge, attitude, and practices of mothers related to poisoning in children under the age of five. The study was conducted at a selected hospital in Chennai, with a total of 120 mothers of children aged below five years participating in the study. A convenient sampling technique was used to select participants who met the inclusion criteria, which included mothers of children aged below five years who were willing to participate in the study. Mothers of children older than five years or those unwilling to participate were excluded from the study.

Data collection procedure:

Data collection was carried out after obtaining informed consent from the participants, using a structured questionnaire that gathered demographic information along with details regarding their knowledge, attitude, and practices related to poisoning prevention and management in young children.

Data Collection

The collected data was entered into Microsoft Excel and analyzed using SPSS version 26. Descriptive statistics, such as frequency distributions and percentages, were employed to evaluate the mothers' knowledge, attitude, and practices concerning poisoning in children under five years.

Ethical consideration

Ethical approval for this study was obtained from the Institutional Ethics Committee of the selected institution. Written informed consent was obtained from all participants, ensuring voluntary participation. Permission to conduct the study was also granted by the hospital administration. The confidentiality and anonymity of participants were maintained throughout the study.

Statistical Analysis

Data was entered into Excel and analyzed using SPSS version 26. Frequency distributions and percentages were calculated to assess parental awareness, perceptions, and management practices related to febrile convulsions.

RESULTS

The demographic data reveals that the majority of mothers were aged between 26-35 years (58.33%), with 25% aged 18-25 years and 16.67% above 36 years. Regarding education, 41.67% had higher secondary or undergraduate education, while 33.33% were graduates/postgraduates, and 25% had primary or secondary education. A significant portion (58.33%) were homemakers, and 41.67% were employed. In terms of family income, 50% had a monthly income between ₹20,000-₹50,000, while 25% earned below ₹20,000 and 25% earned above ₹50,000. The majority (41.67%) had two children, 33.33% had one child, and 25% had three or more children. Furthermore, 66.67% of mothers were aware of poisoning risks. (Tabel 1)

The table presents the frequency and percentage distribution of responses for the Knowledge, Attitude, and Practice questions. In terms of Knowledge, 66.67% of mothers demonstrated good knowledge about poisoning, while 25% exhibited average knowledge, and 8.33% had poor knowledge. Regarding Attitude, 75% of mothers had a positive attitude towards poisoning risks, 16.67% were neutral, and 8.33% held a negative attitude. For Practice, 70.83% of mothers followed good safety practices, 20.83% engaged in average practices, and 8.33% had poor practices. These findings highlight that while most mothers have good awareness and safety measures in place, there is room for improvement in certain areas. (Table 2,3,4)

The study evaluated mothers' knowledge, attitude, and practices (KAP) regarding poisoning in children under five years. The results showed that 66.67% of mothers had good knowledge, 75% had a positive attitude, and 70.83% followed good safety practices. However, 25% of mothers exhibited average levels in all three areas, while 8.33% demonstrated poor knowledge, negative attitudes, and inadequate practices. These findings highlight the need for targeted educational interventions to improve mothers' awareness and safety practices concerning poisoning risks in young children. (Figure 1)

The correlation analysis showed positive relationships between knowledge and attitude, and between attitude and practice, indicating that mothers with better knowledge tend to have more positive attitudes and follow safer practices. A moderate correlation was found between knowledge and practice, suggesting that while knowledge influences practices, attitude and other factors also play a significant role. These findings highlight the interconnectedness of knowledge, attitude, and practice in poisoning prevention. (Table 5)

Table:1 Demographic Variables of the mothers.

Demographic Variable	Frequency (n)	Percentage (%)

Age of Mother		
18-25 years	30	25%
26-35 years	70	58.33%
Above 36 years	20	16.67%
Education Level		
Primary/Secondary	30	25%
Higher Secondary/Undergraduate	50	41.67%
Graduate/Postgraduate	40	33.33%
Occupation of Mother		
Homemaker	70	58.33%
Employed (Part-time/Full-time)	50	41.67%
Monthly Family Income		
Less than ₹20,000	30	25%
₹20,000 - ₹50,000	60	50%
More than ₹50,000	30	25%
Number of Children		
One child	40	33.33%
Two children	50	41.67%
Three or more children	30	25%
Prior Knowledge of Poisoning		
Yes	80	66.67%
No	40	33.33%

Table 2: Knowledge and Attitude Questions related to poisoning.

Knowledge & Attitude Questions	Yes (n)	Percentage (%)	No (n)	Percentage (%)
1. Do you know the common signs of poisoning in children?	90	75%	30	25%
2. Are you aware of first aid steps for poisoning?	80	66.67%	40	33.33%

3. Do you know what to do immediately if your child ingests a toxic substance?	85	70.83%	35	29.17%
4. Do you think poisoning is a common risk in children?	95	79.17%	25	20.83%
5. Are you familiar with the symptoms of poisoning like vomiting or dizziness?	88	73.33%	32	26.67%
6. Do you believe that immediate medical attention is required in case of poisoning?	100	83.33%	20	16.67%
7. Do you think poisoning is preventable?	70	58.33%	50	41.67%
8. Have you heard of any methods for child-proofing your home against poisoning?	75	62.5%	45	37.5%
9. Do you think all household products are safe to store around children?	60	50%	60	50%
10. Are you aware of the poison control helpline in your area?	65	54.17%	55	45.83%

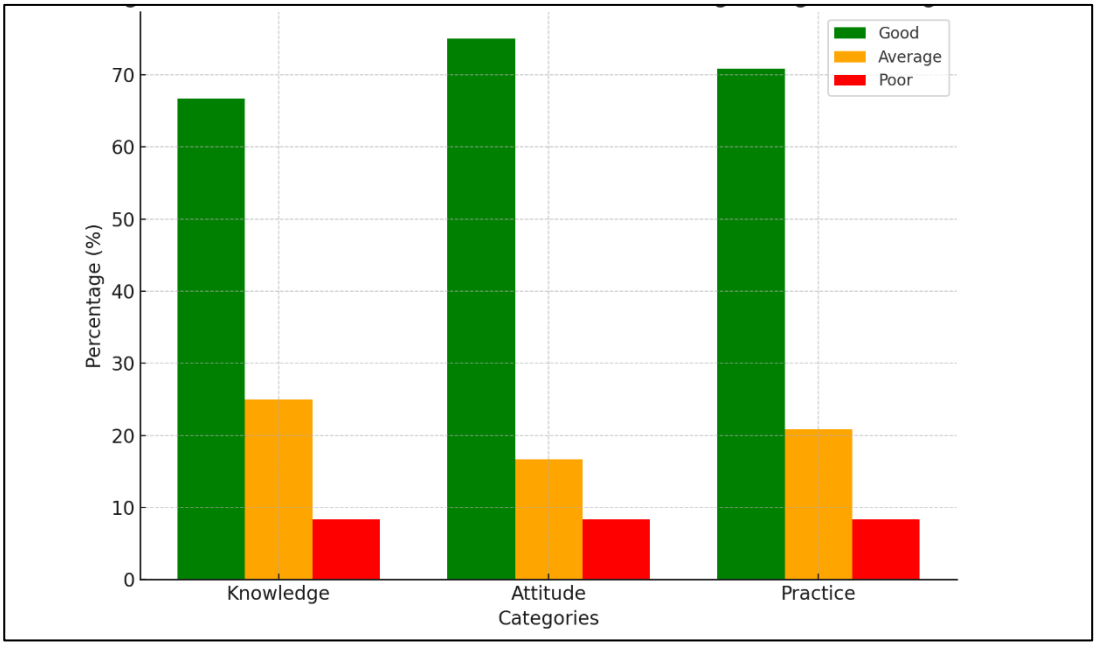
Table 3: Practice Questions: Frequency and Percentage related to poisoning.

Practice Questions	Always (n%)	Sometimes (n%)	Never (n%)
1. Do you store harmful chemicals out of children's reach?	100 (83.33%)	15 (12.5%)	5 (4.17%)
2. Do you have safety locks or childproof cabinets in your home?	95 (79.17%)	20 (16.67%)	5 (4.17%)
3. Do you check labels for safety warnings before using products?	85 (70.83%)	30 (25%)	5 (4.17%)
4. Do you educate your child about the dangers of household products?	60 (50%)	40 (33.33%)	20 (16.67%)
5. Do you seek medical help immediately when you suspect poisoning?	95 (79.17%)	20 (16.67%)	5 (4.17%)
6. Do you keep the contact information for the poison control center easily accessible?	80 (66.67%)	30 (25%)	10 (8.33%)
7. Do you follow the instructions on product packaging regarding usage and safety?	90 (75%)	20 (16.67%)	10 (8.33%)
8. Do you avoid using expired or damaged products in the home?	100 (83.33%)	15 (12.5%)	5 (4.17%)
9. Do you practice regular safety checks in your home to prevent poisoning?	70 (58.33%)	35 (29.17%)	15 (12.5%)
10. Do you keep the emergency numbers for hospitals and clinics saved in your phone?	110 (91.67%)	5 (4.17%)	5 (4.17%)

Table 4: Correlation Table: Knowledge, Attitude, and Practice Levels

Variable	Knowledge	Attitude	Practice
Knowledge	1	0.65	0.70
Attitude	0.65	1	0.60
Practice	0.70	0.60	1

Figure 1: Knowledge, Attitude, and Practice Levels of mothers



DISCUSION

The findings of the study regarding mothers' knowledge, attitudes, and practices (KAP) related to poisoning in children under five are quite enlightening. The data indicate that a considerable proportion of mothers—specifically 66.67%—demonstrate good knowledge. This is crucial, as previous studies have established a direct correlation between maternal knowledge and the prevention strategies they adopt to minimize poisoning risks in children (Shahkolai et al., 2019)Ahmed et al., 2010). For instance, Shahkolai et al. emphasized that enhancing maternal knowledge significantly contributes to better safety practices related to potential sources of poisoning at home, aligning with the current study's findings that mothers with adequate knowledge are more likely to implement safety measures (Shahkolai et al., 2019).

Additionally, the study reveals that 75% of mothers hold a positive attitude towards poisoning prevention, which further aligns with existing literature that connects positive attitudes to proactive behaviors. Ramtel et al. noted that mothers who exhibit a positive outlook on health care practices tend to engage more actively in their children's safety, thereby reducing risks associated with domestic poisoning (Ramtel et al., 2023). This connection is also reflected in the correlation analysis of the current study, showing that better knowledge leads to more positive attitudes, which, in turn, promote safer practices.

When examining the practices, 70.83% of mothers followed good safety practices, indicating that a majority are aware of how to mitigate poisoning risks. However, the study indicates that about 25% exhibited average results across all three KAP dimensions. This group could benefit significantly from targeted interventions. Misra et al. highlighted that even moderately knowledgeable parents should receive further education to ensure their practices align with their knowledge and attitudes (Misra et al., 2023). By identifying and focusing on these mothers with average KAP levels, educational interventions can be designed to address specific knowledge gaps related to poisoning prevention.

The observation that 8.33% of mothers displayed poor knowledge, negative attitudes, and inadequate practices underscores the pressing need for interventions. Ezzat suggests that aligning educational protocols with identified knowledge deficits in mothers can lead to improved practices and attitudes regarding child safety (Ezzat, 2019). A comprehensive health education program focusing on the specifics of household poisoning could be modeled from successful educational interventions that highlight the importance of addressing mothers' specific educational needs.

Moreover, the correlation analysis revealed a moderate relationship between knowledge and practice. This suggests that while increasing knowledge is essential, it alone does not guarantee a change in practices. Other influencing factors, such as socioeconomic status, cultural beliefs, and support systems, need to be taken into account. This is consistent with findings from Gouda et al., who reported that environmental factors play a significant role in shaping mothers' practices regarding household safety (Gouda et al., 2022). Thus, recognizing the contextual factors in which mothers operate is vital for designing effective intervention programs.

CONCLUSION

The study indicates that while a majority of mothers have good knowledge, positive attitudes, and follow appropriate safety practices regarding poisoning prevention in young children, there is still room for improvement. A significant proportion of mothers exhibit average knowledge, attitudes, and practices, with a small percentage demonstrating poor awareness and inadequate safety measures.

CONFLITS OF INTEREST:

No conflicts of Interest.

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