

RESEARCH PAPER

Mothers' knowledge of domestic accident prevention involving children in Baghdad City

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ABSTRACT

Background: Accidental injuries are the most common cause of death in children over the age of one. Every year, millions of children are permanently disabled or disfigured because of accidents.

Objective: To assess the level of knowledge of women with respect to children's domestic accidents, and to determine its association with some demographic factors.

Method: This cross-sectional study was conducted in both sides of Baghdad City during the period from April through to August 2013. The targeted population were women attending the primary health care centers (PHCCs). A random sample of 20 PHCCs was taken through a stratified random sampling technique by dividing Baghdad City into its two main parts Karkh and Russafa. Ten centers were then chosen from each sector by a simple random sampling technique. A well-structured questionnaire was developed that constituted of questions on four main types of accidents involving children (poisoning by chemicals and detergents, electric shock, injuries from sharp instruments in the kitchen, and burns).

Results: The total number of women enrolled in this study was 1032 aged from 15 – 50 years. The results revealed that only 9.2% of the mothers acquired a good level of knowledge in prevention of injuries from chemicals and detergents, and more than 90% were found to have poor knowledge. The same was found regarding knowledge about preventing electrical accidents caused by power sockets and electrical appliances where only 10.2% of the mothers were found to have a good level of knowledge. The results were not much better regarding accidents caused by fire, only 11.6% of the mothers scored well. With respect to dealing with accidents caused by sharp instruments in the kitchen, only 6.3% of the mothers obtained a score that indicated a good level of

knowledge. Older mothers were statistically found to have a better level of knowledge than younger mothers. Higher educated mothers' were statistically associated with a lower level of knowledge in accident prevention. Mothers with more children and those whose children had previously been involved in an accident were found to have a better level of knowledge.

Conclusion: It can be concluded from this study that women in Baghdad are poorly educated about how to protect their children against domestic accidents.

Keywords: mothers' knowledge, prevention, children's accidents, Baghdad

INTRODUCTION

Accidental injuries remain the leading cause of death among children aged 1 to 19 years and is the fifth leading cause of death among infants.⁽¹⁾ Most injury-related deaths occur in low and middle-income countries where knowledge is limited regarding injury prevention.⁽²⁾ Every year, millions of children are permanently disabled or disfigured because of accidents.⁽³⁾ In Iraq, one of the leading causes of death among children under five years was found to be domestic accidents.⁽⁴⁾

Domestic accident cases reflect more clearly than any other, the character and lifestyle of people. New patterns of injury attributable to domestic accidents emerge with each new technical or cultural change.⁽⁵⁾ Accidents can take place in a wide variety of environments however, the home is the most likely location for accidents involving children. Accidents occurring in the home are a major cause of death and injury that strongly related to the years of life that are potentially lost.^(6,7)

The objective of this study was to assess the level of mothers' knowledge with respect to domestic accidents involving children, and to determine its association with a number of demographic factors.

METHODS

This cross-sectional study was conducted in Baghdad city during the period from April through to August 2013. The site of data collection was primary health care centers (PHCCs). A random sample of 20 PHCCs was taken through a stratified random sampling technique by dividing Baghdad city into its two main parts: Karkh and Russafa. The total number of PHCCs

in Karkh is 68 and in Russafa 84, ten centers were chosen from each sector by a simple random sampling technique. The centers chosen were as follows:

Karkh sector: Hitteen, Shabab, Salam, Salam/2, Mansour, Mudhhiriya, Taji, Dakhiliya, Khadhraa, and Al-nour.

Russafa sector: Karrada, Thubbat, Mustansiriya, A'dhamiyah/2, Ur, Husainiya, Sulaikh, Shaheed lkadhim, Baghdad Jadeeda, and Bab-Al-Mua'dhum.

The sample was representative of Baghdad as a whole, as random selection included PHCCs from different sectors of the city (elite, public and suburban areas).

Mothers that were included in the study were between 15 – 50 years of age and were selected through a systematic random sampling technique by choosing every other woman attending the PHCC for primary health care services.

The researchers that were involved in the study were female doctors which made it acceptable for them to interact with the female participants according to the conservative values of the society. Researchers conducting the data collection process were also specialists in family medicine and were experienced in dealing with women, particularly in issues related to domestic health problems.

In order to conduct the study, official approval was taken from the Ministry of Health. After randomly selecting the PHCCs, the researchers went to the centers, introduced themselves to the PHCC manager and started the data collection process by explaining to mothers' the aim of the study, giving them the choice to participate (or not), and assuring them that all information collected would be kept strictly confidential and would not be used for purposes other than research.

The study was designed to pose two main questions; first, what do mothers know about the risks of domestic accidents involving children? Do they know what to do to protect their families from electrical accidents, sharp instruments, burns and poisoning by chemicals? Second, do basic demographic variables – age, education, marital status and number of children influence knowledge, practice and risk perception?

A well-structured questionnaire was developed by the researchers according to the recommendations of previous relevant literature and taking into consideration the cultural norms and beliefs of the local women. The questionnaire constituted of questions

Table 1. Demographic characteristics of the sample.

Demographic factors	No.	%
Mother's age (years)		
≤ 20	80	7.7
21 – 30	455	44.0
31 – 40	359	34.7
41 – 50	138	13.6
Mother's education (yrs)		
Non	28	2.7
1 – 6	318	30.8
7 – 12	392	38.0
13 – 16	241	23.4
> 16	53	5.1
Marital status		
Married	935	90.6
Divorced	38	3.7
Widowed	59	5.7
Family type		
Nuclear	508	49.2
Extended	524	50.8
No. of children		
1 – 2	506	49.0
3 – 4	355	34.4
> 4	171	16.6
Hx. of previous accidents		
Yes	262	25.4
No	770	74.6
Total	1032	100

about prevention of four main types of accidents involving children (poisoning by chemicals and detergents, electrical shock, burns and injuries from sharp instruments in the kitchen).

There were ten questions for each category to ease the computation of the score of knowledge. The score was calculated according to the number of correct responses. Mothers who correctly answered 50% or more of the questions were categorised as having a good level of knowledge, while mothers who scored below this were classified as having poor knowledge.

Data entry and analysis was done using Excel and EPI 6 program. Chi-square test of significance was used to measure the association between variables with a P value of 0.05 as a cut-off level of significance.

RESULTS

The total number of women enrolled in this study was 1032 with a mean age of 31.34 + 7.99. The response rate to the interview was 100% as no women refused to participate, the reason being, there were no questions that were considered to be sensitive.

Table 1 shows the distribution of the sample according to age, years of education, current marital status, family type, whether extended (living with grandparents) or nuclear, number of children, and history of previous exposure to accidents. Most mothers (78.7%) were in the age category of 21 – 40 years, 30.8% had completed primary education, 38% completed secondary education and 23.4% were university graduates. More than 90% of the mothers

Table 2. Source of mothers' information according to their score of knowledge.

	Respondents knowledge			
	Good		Poor	Total
	No.	%		
Parents	40	39.2	768	808
Friends and neighbors	21	20.5	181	202
Mass media	10	9.8	130	140
Primary health care center	14	13.7	130	144
Previous accidents	10	9.8	90	100
School	2	1.9	76	78
Books and magazines	5	4.9	17	22
	102		1392	1494*

*There is a degree of overlapping due to the possibility of more than one answer.

were married and less than 10% were either divorced or widowed, 83.4% had between 1 – 4 children and 16.6% had more than four children. More than 25% of the mothers reported that their children had been involved previously in an accident.

Table 2 shows the source of the mothers' knowledge regarding accident prevention. Most mothers (808), said they had gained their knowledge from their parents. Other sources of knowledge were: friends and neighbors, mass media and PHCCs.

With respect to the level of knowledge, the results revealed that only 9.2% of mothers had good knowledge regarding dealing with chemicals and detergents, and more than 90% were categorised as having poor knowledge. The same was found regarding knowledge of preventing electrical accidents caused by power sockets or electrical appliances where only 10.2% of mothers showed good knowledge and 88.8% were found to have poor knowledge. The results were not much better for accidents caused by fire with only 11.6% of mothers scoring well. For accidents caused by sharp instruments in the kitchen, only 6.3% of the mothers achieved a score that indicated good knowledge of accident prevention versus 93.7% that showed poor knowledge.

Figure 1 illustrates the cross tabulation of the demographic variables with the score of mothers' knowledge. This revealed that older mothers statistically had a better level of knowledge of domestic accident prevention than younger mothers. Higher educated mothers were statistically associated with a lower level of knowledge in preventing domestic accidents involving children.

Mothers with more children were found to have relatively better knowledge of accident prevention

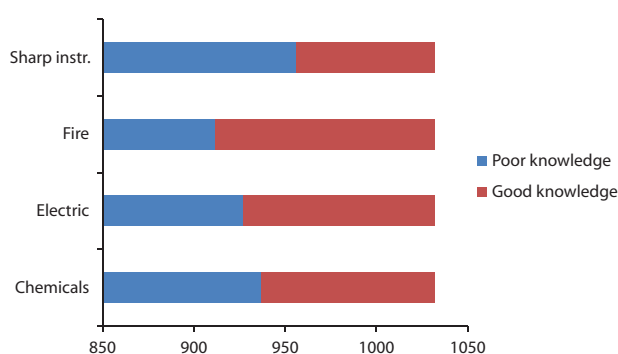


Figure 1. Level of mothers' knowledge regarding the four types of domestic accidents.

than mothers with less children. Mothers whose children had previously been involved in a domestic accident were more knowledgeable than mothers whose children had not suffered any accidents. The association of knowledge with the marital status was significant, while with family type it was not (Table 3).

DISCUSSION

In spite of their magnitude and preventability, childhood injuries receive much less attention than other diseases.⁽⁸⁾ In the United Kingdom, more than one million children under the age of 15 are involved in accidents in and around the home every year, for which they are taken to accident and emergency units. Most of these accidents are preventable through increased awareness and improvements in the home environment.⁽³⁾ Care-giver depression has emerged as a consistent risk factor for all types of injury. Other risk factors include long-term child health problems, residence and regular care of the child by a non-household member.⁽⁹⁾

We chose to study knowledge the risk factors of domestic injury and its prevention because understanding these factors is necessary for developing interventions to not only change behavior, but also to educate individuals.⁽¹⁰⁾ Basic knowledge is essential for mothers as well as for children for whom first aid training should start early on in kindergarten.⁽¹¹⁾

The results of the current study showed that mothers' knowledge of the four types of accidents studied was clearly deficient. This is in agreement with a study conducted in China which concluded that parental knowledge of injury prevention and safety promotion was unsatisfactory.⁽¹²⁾ However, these findings disagree with a study of 230 mothers in Iran where 75% were found to have good knowledge.⁽¹³⁾ Surprisingly however, none of the sources from which the mothers got their information are associated with a good level of knowledge in accident prevention.

Mothers' knowledge of safety precautions necessary to keep chemical materials and detergents out of childrens reach was very poor which can lead to poisoning or other serious accidents that may result in loss of life. Another study performed in the Middle East found however, the majority of families kept detergents and medications in a high or locked cabinet.⁽¹⁴⁾ A study conducted in Porto Alegre,

Table 3. Association of certain demographic variables with the level of mothers' knowledge of domestic accident prevention.

	Level of knowledge				X ²	P value
	Good		Poor	Total		
	No.	%				
Mother's age (years)						
< 20	4	6.5	76	80	8.83	0.032*
21 – 30	23	37	432	455		
31 – 40	19	30.6	340	359		
41 – 50	16	25.8	122	138		
Mother's education (years)					13.8	0.0079*
None	4	6.5	24	28		
1 – 6	27	43.5	291	318		
7 – 12	22	35.5	370	392		
13 – 16	5	8	236	241		
More than 16	4	6.5	49	53		
Marital status					8.05	0.018*
Married	50	81	885	935		
Divorced	4	6.5	34	38		
Widowed	8	13	51	59		
Family type					0.67	0.41
Nuclear	34	55	480	514		
Extended	28	45	490	518		
No. of children					7.29	0.026*
1 – 2	22	35.5	484	506		
3 – 4	23	37	332	355		
More than 4	17	27.5	154	171		
Hx. of previous accidents					49.01	0.000*
Yes	39	63	223	262		
No	23	37	747	770		

* = Significant P value.

Southern Brazil, revealed that storage of toxic agents below 150 cm was associated with an increased risk of approximately 17 times for children who were poisoned compared to children in a control group.⁽¹⁵⁾ A study in USA on 76 caregivers to determine their practices in preventing home poisoning found that only 20% knew the telephone number of the poison control center.⁽¹⁶⁾

Our results also revealed poor knowledge with regard to protecting children from contact with fire. Children under the age of 12 are the most at risk of burns that occur in the home. Most burns are caused in the home by incidents involving hot water and food, while direct flame burns are more common with increasing age.⁽¹⁷⁾ Domestic fires pose one of the greatest risks to

children. In particular, children that play with matches and lighters frequently start house fires.⁽³⁾

A lack of knowledge of practices that prevent children from being subjected to electrical injuries was also demonstrated in this study. This disagreed with a study in Canada 1996 that found that 63% of mothers protect their child from injury by electrical appliances.⁽¹⁸⁾ The spectrum of electrical injury is broad, ranging from minimal injury to severe multi-organ involvement, to death. Children are primarily injured in the household setting.⁽¹⁹⁾ Statistics on electrocutions from power points of 0 to 9 year olds obtained from the Victorian Emergency Minimum Dataset (VEMD) show that over 70% of accidents are in the age group of 0 to 5 years.⁽³⁾

The kitchen is considered the most dangerous place in the house for children.⁽²⁰⁾ The current study revealed an obvious ignorance of mothers regarding how to keep their sharp kitchen instruments out of children's reach. This disagrees with a study by Black in New York which found that 74% of mothers know how to protect their children from the danger of knives and sharp instruments in the kitchen.⁽²¹⁾

Analysis of the association of mothers' knowledge with some demographic variables showed that their knowledge improves as they get older or have more children. This could be explained by mothers gaining more experience with age and when having more children. Knowledge of mothers also improves whenever there are previous accidents involving their children which results in them learning from their past experiences.

Mothers' knowledge of injury prevention was shown to be inversely related to their years of education, this is very interesting and may be explained by the fact that highly educated mothers are usually employed and absent from the home for a considerable amount of time during the day. This makes children more prone to accidents and mothers may become less enthusiastic or too busy to learn about prevention methods. This agrees with a study performed in Iran,

the results of which showed that mothers' high school education, employment and absence from the home for at least eight hours a day were factors predicting poor knowledge and attitudes towards domestic injury prevention.⁽¹³⁾ Opposite findings however were reported from a study in Egypt which showed that increased level of education statistically improves knowledge in preventing accidents in children;⁽²²⁾ and a study in Canada found that knowledge of the prevention of accidents caused by chemicals in the home increases with increasing level of education.⁽²³⁾

The results also showed that widowed and divorced mothers are more knowledgeable about how to protect their children from accidents than married women. This may be because their children are more precious to them.

CONCLUSION

It can be concluded from this study that women in Baghdad are poorly educated about the prevention of domestic accidents involving children. This finding is alarming and needs rapid and active measures to prevent such accidents by conducting education programs via mass media, including information about accident prevention in school curricula and creating group education sessions in primary health care centers.

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