

## **Mothers' Knowledge, Practice and Attitude about Children's Injuries and First Aid**

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### **Abstract**

**Background:** Mothers as a caregiver are playing the vital role in the prevention of childhood injuries at home. They are the primary persons who can help the children and perform first aid on them so that, they can prevent the complications and sometimes prevent death. **Aim:** was to assess mothers' knowledge, practice and attitude about children's injuries and first aid. **Subjects and Method: Design:** Quantitative descriptive research design was used in this study. **Settings:** This study was conducted at pediatric outpatient clinics at Tanta University Hospital. **Subjects:** Convenience sampling of mothers (64) who had children up to 12 years old were the target population. **Tools of the study: Tool I: Mothers' knowledge questionnaire** about first aid: it included two Parts: part (1) Socio-Demographic Characteristics of mothers and socio-Demographic Characteristics of children. Part (2): mothers knowledge about items related to the incidence and types of home injures, medical emergencies suffered by their children in the previous 4 weeks. **Tool II: Mothers' practice towards first aid measures** to be taken during home injuries. **Tool III: Mothers' attitude towards first aid measures.** **Results:** it was apparent that nearly 90% of the studied mothers had knowledge about first aid, while 36.9% of them reported correct answers related to first aid for different conditions with total mean score of mothers' knowledge  $19 \pm 2.8$ . Also all mothers (100%) agreed that mothers who have school-age children should know everything about first aid, and first aid training must be properly provided to mothers compared to nearly three quarters (73.7%) of them who agreed that they need training on first aids. **Conclusion:** The study concluded that, mothers' knowledge about first aid is fair. There was significant correlation between mother education and their total knowledge. Health members and first aid training course were the most sources for mothers about first aid. All mothers were willing to attend training course about first aid. **Recommendations:** Training courses about first aid must be provided to mothers in pediatric settings. Health members should continue their teaching about first aid periodically in the pediatric settings where they are working in. Media as TV should also, introduce information about common children's injures, and the first aid required for each type.

**Keywords:** knowledge, practice, attitude, first aid.

## Introduction

Childhood injury is a significant public health problem all over the world. There is more than 875,000 children less than 18 years old die every year in the world because of injuries, 80% of these occur in low- and middle-income countries. Injury is considered the fifth leading cause of loss of healthy life and second leading cause of disability.<sup>(1)</sup>

Injuries are classified into two main categories: intentional and unintentional. Intentional injuries caused by intent to cause harm to oneself or others while unintentional injuries occur without intent to cause such harm. Unintentional injuries are caused by external cause such as poisoning or drowning.<sup>(2)</sup>

The World Health Organization's (WHO) Global Burden of Disease estimates that nearly 80% (3.9 million) of deaths are due to un-intentional injuries.<sup>(3)</sup> According to WHO the leading causes of unintentional injuries are road traffic, falls, drowning, burns, and poisoning. Most unintentional injuries happen in and around the home, where children are considered to be well supervised.<sup>(4)</sup> Children, especially younger ones as preschoolers, spend most of their times in the home and exposed to the risk factors within their family environment. These risk factors include heat, sharp furniture, poisonous detergent, stairs and windows without safety grills, open water reservoirs, and access to stoves place on floor, knives and medicine or within the environment itself as road traffic.<sup>(5)</sup> Unintentional injuries account for 3 of the 15 leading causes of death in children and adolescents under 20 years of age.<sup>(6)</sup>

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spend most of their times in the home and exposed to the risk factors within their family environment. These risk factors include heat, sharp furniture, poisonous detergent, stairs and windows without safety grills, open water reservoirs, and access to stoves place on floor, knives and medicine or within the environment itself as road traffic.<sup>(6)</sup>

Road traffic injuries, drowning, burning, falling, and poisoning are the five main causes of death due to unintentional injuries in the East Mediterranean region. Children are at greater risk to harm because of their developmental and behavioral properties such as ignorance of threats and being active as well as their physical properties as smaller and thinner body mass and more vulnerable skin, and narrower airways.<sup>(7)</sup>

The most common injuries that children are exposed to are fall-related injuries, shock either choking or anaphylactic shock, trauma caused by cuts and burns and non-trauma as seizures, asthmatic attack, epistaxis, hyperthermia, hypothermia, and others. The researchers reported that there was a positive correlation between the correct use of first aid and good clinical outcomes. This means that there is a basic need for public education and raising their awareness about proper first aid, especially at childcare centers among childcare providers.<sup>(8)</sup> First aid can be defined as the assistance given to a person suffering from sudden illness or injury, to maintain life, prevent the condition from deteriorating, and reducing the severity of injuries. It was reported that injuries in children resulted in more deaths.<sup>(9)</sup>

First aid trainings are consisted of basic life support skills as cardiopulmonary resuscitation and Heimlich maneuver to treat choking, management of different injuries such as bleeding, shock, fractures and burns, as well as understanding the use of automated external defibrillator and other rescuer machineries. Many studies have reported the

effectiveness of first aid training on improving clinical outcomes and survival rates. So, first aid training must be done mandatory for all caregivers especially at all the centers and schools involving children.<sup>(10)</sup>

Mothers are playing the vital role in the prevention of childhood injuries at home. They are the primary persons who can help the children and perform first aid on them, so that, they can prevent the complications and sometimes prevent death. The recommended time to deal with emergency is in the early minutes. So, when parents have an excellent background of first-aid knowledge and practices, they could save a child's life.<sup>(11)</sup> Therefore, mothers are the primary individuals who need to have first-aid knowledge and experience. Therefore, this study aimed to assess mothers' knowledge, practices, and attitude about children's injuries and first aid.

#### **Significance of study:**

Childhood injury is a significant public health problem all over the world. There is more than 875,000 children less than 18 years old die every year in the world because of injuries, 80% of these occur in low- and middle-income countries. Injury is considered the fifth leading cause of loss of healthy life and second leading cause of disability.<sup>(1)</sup>

**The aim of this study was to:** assess mothers' knowledge, practices, and attitude about children's injuries and first aid. **Research question:**

-What is the level of mothers' knowledge, practices, about Children's Injuries and first aid?

-What are the mothers' attitudes about children's injures and first aid?

## **Subjects and Method**

### **Study design:**

A quantitative descriptive research design was used in this study

### **Study settings:**

This study was conducted at pediatric outpatient clinics at Tanta main university Hospital.

### **Study subjects:**

Convenience sampling of mothers (64) who had children up to 12 years old were the target population.

### **Study tools:**

**Tool I:** mothers knowledge about children's injures and first aid :a structured questionnaire sheet was used included two parts : **Part (1):-** Socio-Demographic Characteristics of studied mothers and their children as age, occupation, place of residence, educational level, and number of children , children's age and sex.

**Part (2)** Mothers' knowledge questioner about first aid to measure the incidence and types of home injuries suffered by their children in the previous 4 weeks and questions to assess the knowledge, attitude, and practice of mothers towards first aid measures to be taken during these situations.

**Tool II:** Mothers' practice towards first aid measures to be taken during home injuries.

Knowledge and practice score was computed in the way that correct answers were given a score of “1” whereas incorrect or missing answers were given a score of “0”. Then, for each participant, total score was estimated and used for comparisons.

**Tool III:** Mothers' attitude towards first aid measures. The mother's attitude is measured using a 5 Likert scale ranging from strongly agree to strongly disagree.

### **Method**

The study was accomplished through the following steps:

### **Administrative process:**

**1-An official hospital permission** and written approval to carry out the study was obtained from the Dean of Faculty of Nursing to the manager of pediatric outpatient clinics at Tanta university Hospital before conducting this study through official letters explaining the purpose of the study.

### **2- Ethical consideration:**

-A written informed consent (in Arabic language) was obtained from mothers before participation. It included personal data about the participants and details about the study (title, objectives, methods, expected benefits and risks and confidentiality of data).

-Mothers were informed that participation is voluntary and that they could withdraw at any time of the study.

-Privacy of the studied mothers was maintained.

-Confidentiality and autonomy were maintained by the use of code number instead of name.

**3-Tool development:** An interview questionnaire sheet was used to collect data from the mothers. The questionnaire included items about items to measure the incidence and types of home injuries and medical emergencies suffered by their children in the previous 4 weeks and questions towards first aid measures to be taken during these situations. The questionnaire comprised 29 questions, with each correct and complete answer scored 1; so that the total score for was 29. The mean number of questions answered correctly was calculated.

### **4- Validity of the tools:**

All tools were tested for validity by five jury of experts in the field of Pediatric Nursing at the Faculty of Nursing, Tanta University

before conducting the study.

### **5- Reliability of the tools.**

The study tools were tested for its reliability by using Cronbach's Alpha test.

### **6- A pilot study:**

It was conducted before the actual study on 10% of the mothers (6 mothers), in order to test the clarity, feasibility and applicability of the different items of the developed tools. Modifications, rephrasing and some additional terms were done by the researchers before conducting the main study. Data obtained from those mothers were excluded from the current study.

### **5- Data collection:**

- The fieldwork was conducted over a period of 8 months from April 2020 to the end of November of 2020.

### **-Statistical analysis of data:**

The data collected were organized, tabulated, and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 19, SPSS Inc. Chicago, IL, USA). For quantitative data, the range, mean, and standard deviation were calculated. For a comparison between means of two groups of parametric data of independent samples, student t-test was used. For a comparison between more than two means of non-parametric data, Kruskal-Wallis (X<sup>2</sup> value) was calculated. The correlation between variables was evaluated using Pearson's correlation.

## **Results**

### **Table (1)**

presents percentage distribution of the studied mothers and their children according to their sociodemographic characteristics. Regarding their age, it was clear that, more than two thirds of mothers (65.6%) were between thirty to less than forty years old while (25.0%) of them were between twenty to less than thirty years old compared to only (9.4%) of them who were more than

forty years old. In relation to their educational level, it was obvious that more than two thirds of them (68.8%) were graduated and (18.8%) were post graduated and only (12.5%) of them were highly educated. It was also clear that most of them (96.9%) were married and only few percentages (3.1%) of them were divorced. Regarding their occupation, it was observed that three quarters of them (75.0%) were employer and only one quarter (25.0%) of them were housewives. According to place of residence, more than two thirds (68.8%) of them were living in rural areas while the other third (31.3%) was living in urban areas. It was also clear from the table that, three quarters of those mothers (75.0%) had four to five children and (18.8%) of them had one to three children compared to only (6.3%) who had more than five children. According to children's age, there was 43% of children were between six to less than nine years old and only 6.2% were at 9 to less than 12 years old. In addition to their sex, there was more than two thirds (65%) of them were males and only 34.4% were females.

**Figure 1** refers to the most common home injuries as reported by mothers, it was apparent that wounds represented 71,9% followed by burns 34,4%, swallowing foreign bodies as 31,3% then falls and fractures 28,1% and finally poisoning which represented the least percentage as 9,4%.

**Table (2)** describes percentage distribution of the studied mothers according to their source of knowledge regarding first aid; it was evident that nearly most mothers (90.6%) had knowledge about first aids compared to few percentages (9.4%) that did not have knowledge about first aids. At the same time, (37.5%) of those mothers who had knowledge reported that first aid training course was their source of their knowledge while (31.3%) of them said that their source

of knowledge was from health members, compared to (15.6%) of them whose source of knowledge was from television. Finally, (9.4%) and (6.3%) of them proved that their sources of knowledge were from books, relatives or friends respectively. The table also explains that more than two thirds of the mothers (65.6%) had knowledge about first aid bag while (34.4 %) of them did not have knowledge about first aid bag.

**Table (3)** illustrates total score of mothers' knowledge about first aid, it was found that 36,9% of the mothers reported correct answers related to first aid for different conditions while more than three quarters of them (75%) gave correct answers regards first aid for wound and fractures while more than half of them answered correctly in relation to first aid for convulsions compared to 45% of them who had correct answers related to first aid for diabetes mellitus. The table also shows the total mean score of mothers' knowledge about first aid which was (Mean  $\pm$ SD)  $19 \pm 2.8$ .

**Table (4)** illustrates percentage distribution of the studied mothers according to their practice regarding first aid. It was found that slightly more than one third (36.4%) of the mothers went for a medical examination if a child loses consciousness and 84.8 explained that the first step to done take if the child loses consciousness to assess the level of consciousness. Moreover, 63.6% of the mothers were putted the affected part under cold water in the case of a burn while 39.4% of them weren't know that a child with burnt clothing should be covered with a blanket. The table also shows that 51.5% of the mothers weren't know how to remove a foreign body in the eye while 72.7% and 42.4% of them could remove a foreign body from the nose and ear respectively.

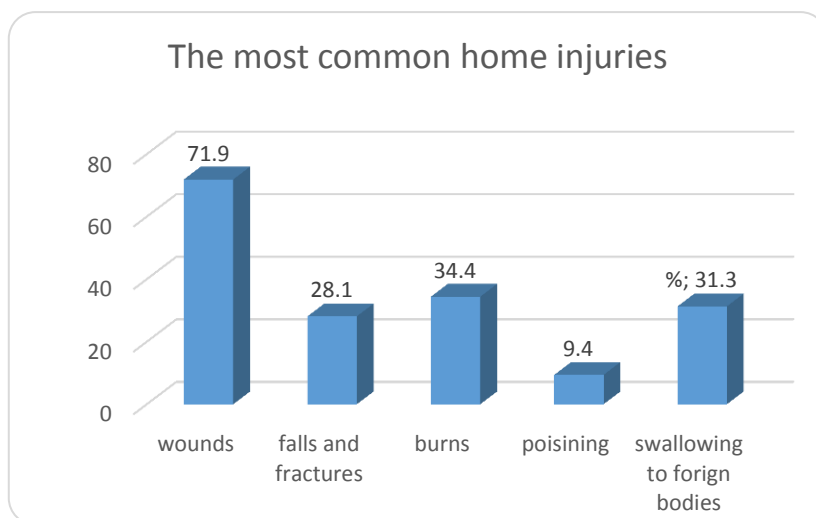
**Table (5)** clears up mothers' attitude towards first aid, it was apparent that all mothers (%100) agreed that mothers who have school-age children should know everything about first

aid, and first aid training must be properly provided to mothers compared to nearly three quarters (73.7%) of them who agreed that they need training on first aids.



**Table (1) percentage distribution of the studied mothers and their children according to sociodemographic characteristics**

<b>Characteristics of the study subject</b>	<b>Study subject n= 64 No</b>	<b>Percent (100%)</b>
Age in Years:		
- 20<30	16	25.0
- 30 <40	42	65.6
- ≥ 40	6	9.4
Education level:		
- High school	8	12.5
- University education	44	68.8
- Post graduated	12	18.8
Marital status		
- Married	62	96.9
- Divorced	2	3.1
Occupation		
- Housewife	16	25.0
- Employer	48	75.0
Place of residence		
- Urban	20	31.3
- Rural	44	68.8
Number of children		
- 1-3	12	18.8
- 4-5	48	75.0
- > 5	4	6.3
Age of children in Years:		
- <3 years	10	15.6
- 3 <6	24	37.5
- 6 <9	28	43.8
- 9-12	2	6.2
Sex of children:		
- Male	42	65.6
- Female	22	34.4



**Figure 1** The most common home injuries as reported by mothers



**Table (2) percentage distribution of the studied mothers according to their source of knowledge regarding first aid.**

<b>Mothers' knowledge about first aids</b>	<b>Study subject n= 64</b>	<b>No (%)</b>
Have knowledge about first aid:	58	90.6
- Yes	6	9.4
- No		
Mothers' sources of first aid:	10	15.6
- Television	6	9.4
- Books	20	31.3
- Health members	24	37.5
- First aid training course	4	6.3
- Relatives and friends		
Have knowledge about first aid bag:		
- Yes	42	65.6
- No	22	34.4

**Table (3) percentage distribution of the studied mothers according to their knowledge regarding first aid.**

<b>Total Mothers' knowledge about first aid</b>	<b>Correct answers * No</b>	<b>Percent (%)</b>
- Mothers' knowledge about first aid for different conditions (burn, chocking, and bleeding)	260	36.9
- Mothers' knowledge about first aid for wound and fractures	240	75
- Mothers' knowledge about first aid for convulsions	180	56
- Mothers' knowledge about first aid for Diabetes mellitus	147	45
- Total score (Mean $\pm$ SD)	19 $\pm$ 2.8	

**Table (4) percentage distribution of the studied mothers according to their Practice regarding first aid**

Mothers' practice regarding first aid	Done		Not done		Don't know	
	No	%	No	%	No	%
If a child loses consciousness, it is possible that he will only regain playing after a medical examination	12	36.4	11	33.3	10	30.3
The first step to take if the child loses consciousness is to assess the level of consciousness	28	84.8	2	6.1	3	9.1
In the case of a burn, the affected part should be placed under cold water	21	63.6	3	9.1	9	27.3
A child with burnt clothing should be covered with a blanket	16	48.5	4	12.1	13	39.4
When there is a foreign body in the eye, we use a piece of cloth and put it in the water and try to remove this foreign body	11	33.3	5	15.2	17	51.5
If there is a foreign body in the nose, we try to make the child sneeze	24	72.7	7	21.2	2	6.1
When there is a foreign body in the ear, we try to remove it in a certain way	14	42.4	9	27.3	10	30.3
In case of choking (swallowing something strange), raise the child's head and gently rub the back	13	39.4	4	12.1	16	48.5
When toxic substances are swallowed, the airway and circulatory system must be examined together	16	48.5	16	45.5	2	6.1
In the event of nosebleeds, press the nose with a soft cloth and lower the child's head downwards	19	57.6	4	12.1	10	30.3
When an insect is stung and we cannot see it, we must raise the hand and put ice in the place of the sting	20	60.6	9	27.3	4	12.1

**Table (5) Mothers' Attitude towards first aid**

<b>Mothers' attitude towards first aid</b>	<b>Strongly Agree</b>	<b>Disagree</b>
- Mothers who have school-age children should know everything about first aid	64(100)	-
- First aid training must be properly provided to mothers	64(100)	-
- Do you want to train on first aid?	60 (73.7)	4 (6.3)

## Discussion

Most of children's injuries that occur at home can be prevented or decreased if mothers know how to deal as early as possible <sup>(12)</sup> so our study aimed to assess mothers' knowledge, practices, and attitude about children's injuries and first aid.

In the United States the most home injuries were falls, burns, poisonings, suffocations and drowning <sup>(13)</sup>, the results of the present study revealed that most common home-related injuries among children were wound, burn, swallowing of foreign bodies, falls/fractures, and poisoning. This result was in line with study by **Mohammed et al. (2020)** <sup>(14)</sup> where they founded that the most home-related injuries among children were wound, followed by fractures, and burns.

Fortunately, in the current study, majority of the mothers (90.6%) have heard about first aid. This result was in congruent with study by **Al-Johani et al. (2018)** <sup>(15)</sup> who revealed that majority of the parents (97.2%) have heard of first aid. In the contrast, our result disagreed with **Eldosoky (2012)** <sup>(16)</sup> who reported that 26.6% had not heard about first aid.

Health members and first aid training course were the most sources for mothers' knowledge about first aid in the present study. This result was in the same line with **Masih et al. (2014)** <sup>(17)</sup> who reported that the majority of their studied sample had reported knowledge about first aid through health members. Moreover, about two thirds of the mothers in the present study had knowledge about content of first aid bag; this may be due to the information that they were received from health members as nurses and first aid training course. This result enforced the important role of health members and first aid training course in enhancement of mothers' information about first aid, especially nurses in educating first-aid knowledge.

In the current study, all mothers agreed that they should know about first aid and that first aid training must be properly provided to mothers. This result agreed with **AlYahya et al. (2019)** <sup>(18)</sup> who informed that their study sample individuals strongly agree on the importance of learning about first aid in the daily life also strongly agreed on the importance of public education of first aid.

The mean of total score of first aid knowledge among mothers in the current study was  $19 \pm 2.8$  and this result is higher than the result of studies that carried by **Eldosoky R. (2012)** <sup>(16)</sup> where they found that the mean knowledge score of mothers was from  $11.0 \pm 5.3$  to  $13.4 \pm 3.04$  out of 29. This indicates that mothers' knowledge about first aid is fair. The fair level of knowledge about first aid may be due to their education as most of them were graduated from college. This result was congruent with **Tomruk et al. (2007)** <sup>(19)</sup> who observed that mothers who had graduated from a university, had better first-aid knowledge.

The present study revealed mothers practices towards most common home injuries as burn, where nearly all mothers were putted the affected part under cold water in the case of a burn. This result was in the same direction with **Megahed et al. (2016)** <sup>(20)</sup> who reported that mothers practiced first aid to burn correctly before going to hospital. In contrary to **Asif et al. (2021)** <sup>(21)</sup> who reported that mothers did not know what to do in case of child burn.

## Conclusion

Mothers' knowledge about first aid is fair. There was significant correlation between mothers' education and their total knowledge as higher educated mothers have more knowledge about first aid. Health members and first aid training course were the most

sources for mothers about first aid. All mothers were willing to attend training course about first aid.

### Recommendations

-Training courses about first aid must be provided to mothers in pediatric settings.

-Health members should continue their teaching about first aid periodically in the pediatric settings where they are working in.

-Media as TV should also introduce information about common children injures, and the first aid required for each type.

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