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**EVALUATE MATERNAL KNOWLEDGE AND ATTITUDE REGARDING FIRST AID  
AMONG THEIR CHILDREN IN BURAIDAH CITY, KSA**

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**Abstract**

**Aim:** This study aimed to explore the mother's knowledge and attitude toward first aid among their children. **Design:** Online cross-sectional study. **Methods:** Researcher used a self-administered online questionnaire included mothers' characteristics, knowledge and attitude towards first aid. The total number of mothers is 1000 from Saudi Arabia, Buraidah city. **Results:** reveals that about two thirds (65.5%) and (69.8%) of studied mothers had incorrect knowledge about concept of first aid and component of first aid, respectively. Also, about two thirds (67.4%) of studied mothers had incorrect knowledge about first aid for burns. Meanwhile less than half (41.5% & 45%) had correct knowledge about first aid fracture bone and nose bleeding. **Conclusion:** Based on the results of the present study concluded that more than half of studied mothers had unsatisfactory level of knowledge, less than half of them had positive attitude related first aid. Also, there was high positive correlation between total knowledge and total attitude related first aid. **Recommendation:** Health educational program about first aid should be delivered regularly during routine schedules at primary health care units. Further intervention study done to assess effect of education program on mothers' knowledge and attitude. Creating awareness and including first aid courses in the curriculum need to be considered. Use of social media for first-aid education will likely improve mothers' awareness

**Keywords:** Attitude; Knowledge; First aid, Mothers

抽象的

目的：本研究旨在探讨母亲对孩子的急救知识和态度。设计：在线横断面研究。方法：研究人员使用在线自填问卷，包括母亲的特征、急救知识和态度。来自沙特阿拉伯布赖代市的母亲总数为1000人。结果：显示大约三分之二 (65.5%) 和 (69.8%) 的被研究母亲分别对急救概念和急救组成部分有不正确的认识。此外，大约三分之二 (67.4%) 的受调查母亲对烧伤急救有错误的认识。同时，不到一半 (41.5% 和 45%) 对急救骨折骨和鼻出血有正确的认识。结论：根据本研究结果得出的结论是，超过一半的被研究母亲的知识水平不令人满意，不到一半的母亲对急救有积极的态度。此外，与急救相关的总知识和总态度之间存在高度正相关。建议：应在初级卫生保健单位的例行日程中定期提供有关急救的健康教育计划。进行了进一步

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的干预研究，以评估教育计划对母亲的知识 and 态度的影响。需要考虑提高认识并在课程中加入急救课程。使用社交媒体进行急救教育可能会提高母亲的意识

**关键词：**态度；知识；急救，妈妈们

### **Introduction**

Annually, thousands of children died due to accidents worldwide and millions of children are referred to hospitals due to injuries caused by accidents resulting in lifelong disabilities [1]. The accidents impair daily life of an individual by influences on physical, psychological and social health and may cause diseases, disabilities or even deaths. Accidents can take place in a wide variety of environments; however, the home is the most likely location for accidents involving children [2]. Preschool years is a critical period in a child's development and preschool children are extremely vulnerable to home accidents and injuries due to innate desire to explore their world and inability to perceive dangers of their actions that lead to death and disabilities [3]. In Saudi Arabia, injuries are the second leading cause of death; however, little is known about frequencies and outcomes of home injuries which become a concern with increase in the emergency department visits [4]. The common causes of home accidents include burn injury which is a leading cause of unintentional injuries in children; falls as fall from bed, sofa or crib on stairs, slippery floors, from high windows, or from tipping furniture; choking; poisoning and toxic substances that may be found under the kitchen sink, in the medicine cabinet, in the garage or garden shed, or even in a purse or other place where medications are stored; suffocation; some home accidents occur where there's water in the bathroom, kitchen, swimming pools, or hot tubs; and less commonly firearms [5-6]. Mothers are always in direct contact with their children at home particularly from infancy and through the preschool age. The most challenging duty for mothers is to provide a safe environment for their children to minimize or prevent injury. Prevention of home injuries in children has become an essential objective for children's wellbeing and health promotion [7]. First aid can define as helping behaviors and initial care provided for an acute illness or injury. The goals of a first-aid provider include preserving life, alleviating suffering, preventing further illness or injury, and promoting recovery [8]. Immediate provision of first aid to victim can marks a big difference to outcome as first aid provide at time of emergency management averts the course and complications of injuries [9]. Parents knowledge and attitude toward emergency management is especially important for children particularly mother's as she spent most of the time with her children at home [10]. Improving knowledge and attitude of the mothers will increase their motivation and self-competence in conducting first aid measures for their children [11]. Therefore; aiming to achieve self-care behavior of caregivers, the objectives of this study were: to evaluate maternal knowledge and attitude regarding first aid among their children in Buraidah city, KSA.

**Aim:** This study aimed to explore the mother's knowledge and attitude toward first aid among their children.

### **Research questions**

To fulfill the aim of this study the following research questions are formulated:

Q<sup>1</sup>: What is level of mother's knowledge toward first aid among their children?

Q<sup>2</sup>: What is level of mother's attitude toward first aid among their children?

Q<sup>3</sup>: Is there correlation between mother's attitude and knowledge toward first aid?

## **Method**

### **Setting**

This study was conducted at Buridah city

### **Research design**

A descriptive cross-sectional research design was utilized to accomplish the aim of this study.

### **Participants**

On thousand women participated (n=1000). The sample size was calculated using the MedCalc software program ([www.medcalc.org/index.php](http://www.medcalc.org/index.php)) at 5%  $\alpha$  error (95% significance) and 20%  $\beta$  error (80% power of the study). The research survey was conducted in Saudi Arabia Kingdom, in Buraidah city, from Jan 2021 to March 2021.

### **Tools of Data Collection**

A validated Arabic-language questionnaire consists of three parts as the following was used for data collection.

#### **Part I: Sociodemographic characteristics of studied mothers**

This part developed by the researcher included age, educational level, occupation, children under 18 years, training courses, etc.

#### **Part II: Women' knowledge related first aid**

This tool was adapted from Adib-Hajbaghery & Kamrava [12], translated to the Arabic language to measures women' knowledge regarding first aid, included 14 multiple questions divided on seven domains as concept of first aid, component of fist aid, first aid for bleeding, first aid for choking, first aid for burns, first aid for fracture bone, first aid for nose bleeding, each one included two questions. Mothers' responses take one score for correct answer and zero for incorrect one, if total score  $\geq 70\%$  was satisfactory knowledge and  $< 70\%$  was unsatisfactory knowledge.

#### **Part III: Women' attitude related first aid**

This tool was adapted from Ilha et al. [13], translated to the Arabic language to measures mothers' attitude toward first aid. It consisted of seven items. Each item was rated on a three-point Likert scale ranging from 1 (Agree), 2 (Neutral), and 3 (Disagree). To sum up; higher scores indicate higher attitude. The total attitude score was categorized as the following positive attitude ( $\geq 70.0\%$ ), and negative attitude ( $< 70.0\%$ ).

### **Reliability**

The adapted tools were tested for their reliability by using Cronbach's alpha coefficient test in SPSS program version 24 by a statistician. It was carried out on 100women and the results were as the following: Internal consistency reliability (Cronbach's  $\alpha$ ) for the knowledge part emerged as accepted (0.799) and attitude part emerged as good (0.829)

### **Data collection and pilot study**

This cross-sectional study employed a self-administered online survey as the data collection tool to ensure compliance with current public health guidelines such as social distancing and minimal person-

to-person interactions. Mothers of children under the age of 18 years were invited to complete the questionnaire electronically. The online survey was administered via Google Forms and was distributed to the mothers via Facebook, WhatsApp, and mail groups. The validated questionnaire was subsequently pre-tested on 100 mothers (10%), who later were included in the main study.

### **Ethical Considerations**

The questionnaire was filled in anonymously and the data were kept confidential and used for research purposes only. Participants were informed about the study's purpose, the duration of the questionnaire, the identity of researchers, and how the data would be stored in a section at the beginning of the form. Written informed consent was obtained online before the respondents completed the questionnaire.

### **Statistical Analysis**

Data was sorted, classified, and the results were shown in tables. The Statistical Package for the Social Sciences was used to analyze the data on a suitable personal computer (SPSS Inc; version 21; IBM Corp., Armonk, NY, USA). The one-sample Kolmogorov–Smirnov test was used to determine the data's normality. Numbers and percentages were used to describe qualitative data. Continuous variables were presented as means  $\pm$  standard deviation. Chi-square is a statistical test used to examine the differences between categorical variables from a random sample in order to judge goodness of fit between expected and observed results. Correlation coefficients are used to measure how strong a relationship is between two variables. The results were considered significant when the probability of error is less than 5% ( $p < 0.05$ ) and highly significant when the probability of error is less than 0.1% ( $p < 0.001$ ).

### **Results**

Table (1) presents the mothers' socio-demographic characteristics, mean age of them was  $38.7 \pm 4.64$ , and more than half of them (55.2%) had secondary education. Regarding to the family income, more than three quarters of studied mothers had sufficient income.

Table 1: Distribution of studied mothers according to their characteristics (n=1000)

Items	N	%
Age (Year)		
20 - <30	354	35.4
30 - <40	310	31
$\geq 40$	336	33.6
Mean S.D $38.7 \pm 4.64$		
Education level		
Preparatory	250	25
Secondary	552	55.2
University	198	19.8
Family income		
Insufficient	174	17.4
Sufficient	826	82.6
Occupational status		

Employee	499	49.9
Housewife	501	50.1
Number of Children less than 18 years		
1	270	27
2	436	43.6
3	151	15.1
>3	143	14
Training courses about First aid		
Yes	239	23.9
No	761	76.1

Regarding the occupational status, about half (50.1%) of mothers were housewife. Besides, less than half of them (43.6%) had two children less than 18 years. Additionally, more than three quarters of studied mothers not attended training courses about first aid. Table (2) reveals that about two thirds (65.5%) and (69.8%) of studied mothers had incorrect knowledge about concept of first aid and component of first aid, respectively. Also, about two thirds (67.4%) of studied mothers had incorrect knowledge about first aid for burns. Meanwhile less than half (41.5% & 45%) had correct knowledge about first aid fracture bone and nose bleeding.

Table 2: Distribution of studied mothers according to their knowledge regarding first aid (n=1000)

Items	Correct		Incorrect	
	n	%	n	%
Concept of first aid	345	34.5	655	65.5
Component of fist aid	302	30.2	698	69.8
First aid for bleeding	401	40.1	599	59.9
First aid for chocking	397	39.7	603	60.3
First aid for burns	326	32.6	674	67.4
First aid for fracture bone	415	41.5	585	58.5
First aid for nose bleeding	450	45	550	55

Figure (1) delineates that more than half (58.8%) of studied mothers had unsatisfactory knowledge about first aid, however, more than one third (41.2%) achieved satisfactory knowledge. Figure (2) describes those more than half (53%) of studied mothers had negative attitude about first aid. However, less than half (47%) had positive attitude.

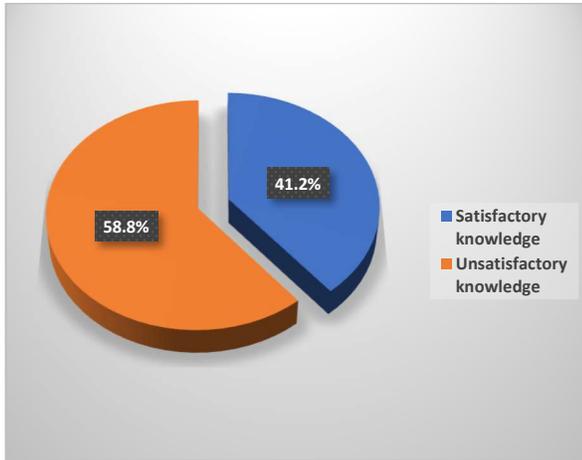


Figure 1: Distribution of studied mothers according to their total knowledge regarding first aid (n=1000)

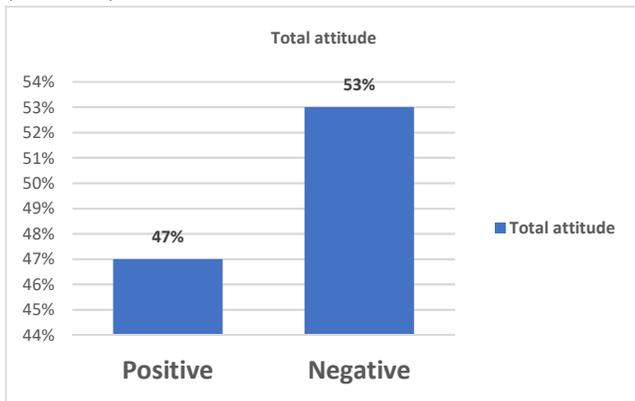


Figure 2: Distribution of studied mothers according to their total attitude regarding first aid (n=1000)

Table (3) shows that there was slight significant relation between mothers' age and their total knowledge at p value <0.05\*. In addition, there was high significant relation between education level and training courses with their total knowledge at p value <0.01\*\*, but there was no relation between family income and occupation with total knowledge at p value > 0.05. Table (4) displays that there was slight significant relation between mothers' occupation and their total attitude at p value <0.05\*, in addition, there was high significant relation between education level and training courses with their total attitude at p value <0.01\*\*, but there was no relation between family income and age with total attitude at p value >0.05. Table (5) reveals that there was high positive correlation between total knowledge and total attitude related first aid at p value <0.01\*\*.

Table 3: Relation between demographic characteristics of studied mothers and their total knowledge

	Total knowledge		Chi-square p. value		
	Satisfaction N=412	Unsatisfaction N=588			
Age:					
20 - <30	270	65.5	84	14.3	6.101
30 - <40	112	27.2	198	33.7	<0.05*

≥40	30	7.3	306	52	
Education level:					
Preparatory	40	9.7	210	35.7	9.632
Secondary	182	44.2	370	62.9	<0.01**
University	190	46.1	8	1.4	
Family income					
Insufficient	80	19.4	94	15.9	2.006
Sufficient	332	80.6	494	84.1	>0.05
Occupation					
Employee	194	47.1	305	51.9	1.333
Housewife	218	52.9	283	48.1	>0.05
Training courses about First aid					
Yes	200	48.5	39	6.6	13.022
No	212	51.5	549	93.4	<0.01**

Table 4: Relation between demographic characteristics of studied mothers and their total attitude

	Total attitude				Chi-square p. value
	Positive N=470		Negative N=530		
Age:					
20 - <30	194	41.3	160	30.2	2.104
30 - <40	140	29.8	170	32.1	>0.05
≥40	136	28.9	200	37.7	
Education level:					
Preparatory	30	6.4	220	41.5	10.746
Secondary	260	55.3	292	55.1	<0.01**
University	180	38.3	18	3.4	
Family income					
Insufficient	90	19.1	84	15.8	1.006
Sufficient	380	80.9	446	84.2	>0.05
Occupation					
Employee	300	63.8	199	37.5	4.713
Housewife	170	36.2	331	62.5	<0.05*
Training courses about First aid					
Yes	230	48.9	9	1.7	12.996
No	240	51.1	521	98.3	<0.01**

Table 5: Correlation between studied variables

	Total attitude
Total knowledge	r. 0.644 p <0.01**

**\*\*highly significant <0.01\*\***

## **Discussion**

Basic first aid knowledge helps parents when they have to help their children in an emergency. Every parent needs to be able to think about things that could go wrong. Parents should be taught how to give first aid to their children, which will help them understand how important it is to keep their kids safe. This allows them to deal with difficult situations, like getting hurt, getting bitten, or getting burned outside. First aid is all about using common sense in the hour of need [14]. After analyzing the current data, we concluded that about two thirds studied mothers had incorrect knowledge about concept of first aid and component of first aid, respectively. Also, about two thirds of studied mothers had incorrect knowledge about first aid for burns. Meanwhile less than half had correct knowledge about first aid fracture bone and nose bleeding. Finally, more than half of studied mothers had unsatisfactory knowledge about first aid. However, more than one third achieved satisfactory knowledge. These results may be due to more than three quarters of studied mothers not attended training courses about first aid. These results inconsistent with the study conducted by Alhajjaj et al., 2021 [15] on 476 mothers included in this study in Qassim region and stated that the vast majority of mothers were unaware of the first aid measures. The most frequently reported source of information about first aid was social media. Also, Joseph et al., 2015 [16] who performed study on 146 teachers in nine schools in Mangalore, India, most of the mothers considered that there must be training about first aid measures. Only less than half teachers had received first aid training previously. Poor and moderate knowledge of first aid was observed among the majority of subjects. Furthermore, Halil et al., 2021 [17] who done A cross-sectional study was conducted among parents of under-age children in the Taman Desa Darul Naim area of Pasir Tumbuh, in Kelantan, Malaysia and reported that out of 80 respondents, 46.3% showed minimal knowledge of burn first aid, 47.5% had moderate knowledge, and 6.3% extensive knowledge. According to attitude of mothers about first aid for children, the present study mentioned that more than half of studied mothers had negative attitude about first aid, however, less than half had positive attitude. These results attributed to more than half of studied mothers had unsatisfactory knowledge about first aid. These results inconsistent with the study done by Ganfure et al., 2018 [18] who performed A cross-sectional study was conducted among kindergarten subjects and stated that three quarters of them had positive attitude for first aid. In addition, Abelairas-Gómez et al., 2020 [19] reported that the most of studied parents had positive attitude about first aid. Meanwhile, supported with Althubaiti et al., 2019 [20] who done study on 500 participants at Taif university and stated that the majority of them had negative attitude related first aid. Regarding to the relation between characteristics of mothers and knowledge, attitude about first aid, the present results mentioned that education level and training courses with their total knowledge and attitude at p value <0.01\*\*, but there was no relation between family income and occupation with total knowledge at p value >0.05, while, there was slight significant relation between mothers' age and their total knowledge at p value <0.05\*. These results cohort with the Descriptive, transversal study on 405 subjects and detected those parents with previous training, university education and healthcare and educational professionals achieved higher scores Míguez-Navarro et al., 2018 [21]. Also, Eldosoky, 2012 [22] who done an interview questionnaire was completed by 1450 rural mothers.

Younger age of mother, higher level of education, higher socioeconomic status, being in paid employment, source of knowledge about first aid and having attended a training course on first aid were significant predictors of better KAP among mothers. On other hand, no significant correlation was found between age, family size, language, history of burns, or training and knowledge; however, female gender and higher educational level were associated with increased awareness, although this was not statistically significant  $p = 0.05$  and  $p = 0.17$ , respectively, Alomar et al., 2016 [23]. Mobarak et al., 2015 [24] showed that First aid training and the presence of FA group were significant predictors for improved FA knowledge among students (odds ratio (OR) 3.35, 95% CI 1.60 - 7.06; OR 2.28, 95% CI 1.34 - 3.95, respectively).

### **Conclusion**

Based on the results of the present study concluded that more than half of studied mothers had unsatisfactory level of knowledge, less than half of them had positive attitude related first aid. Also, there was high positive correlation between total knowledge and total attitude related first aid.

### **Recommendation**

Based on the results of the current study, it was recommended the following:

- Health educational program about first aid should be delivered regularly during routine schedules at primary health care units.
- Further intervention study done to assess effect of education program on mothers' knowledge and attitude.
- Creating awareness and including first aid courses in the curriculum need to be considered.
- Use of social media for first-aid education will likely improve mothers' awareness

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### **Declaration of Conflicting of Interests**

The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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