Evaluate Maternal Knowledge and Attitude Regarding First Aid Among their Children in Buraidah City, Saudi Arabia Kingdom (KSA)

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ABSTRACT

Background: 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. Objective: This cross-sectional study aimed to explore the mother’s knowledge and attitude toward first aid among their children. 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. 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.

1. BACKGROUND

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.

2. OBJECTIVE

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:
Q1: What is level of mother’s knowledge toward first aid among their children?
Q2: What is level of mother’s attitude toward first aid among their children?
Q3: Is there correlation between mother’s attitude and knowledge toward first aid?

3. MATERIAL AND METHODS

Setting
This study was conducted at Buraidah city, KSA.

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

Participants in the study
One thousand women participated (n=1000). The sample size was calculated using the MedCalc software program (www.medcalc.org/index.php) at 5% α error (95% significance) and 20% β 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 & Karmrava (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 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 (≥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 100 women and the results were as the following: Internal consistency reliability (Cronbach’s α) 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 ± 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% \((p<0.001)\).

4. RESULTS

Table 1 presents the mothers’ socio-demographic characteristics, mean age of them was 38.7, 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. 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.

Regarding the education level, more than half (55.2%) of mothers had secondary education. Regarding the family income, more than three quarters of studied mothers had sufficient income. 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%) 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.

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.

Table 3 shows that there was slight significant relation between mothers’ age and their total knowledge at \(p<0.05\). In addition, there was high significant relation between education level and training courses with their total knowledge at \(p<0.01\), but there was no relation between family income and occupation with total knowledge at \(p>0.05\).

Table 4 displays that there was slight significant relation between mothers’ occupation and their total attitude at \(p<0.05\). In addition, there was high significant relation between education level and training courses with their total attitude at \(p<0.01\), but there was no relation between family income and age with total attitude at \(p>0.05\).

Table 5 reveals that there was high positive correlation between total knowledge and total attitude related first aid at \(p<0.01\).

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  |
| 40                           | 336 | 33.6|
| Mean S.D.                    | 38.7|     |
| 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|

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

| Items                        | Correct | Incorrect |
|------------------------------|---------|-----------|
| Concept of first aid         | 345     | 655       |
| Component of first aid       | 302     | 698       |
| First aid for bleeding       | 401     | 599       |
| First aid for chocking       | 397     | 603       |
| First aid for burns          | 326     | 674       |
| First aid for fracture bone  | 415     | 585       |
| First aid for nose bleeding  | 450     | 550       |

Table 3: Distribution of studied mothers according to their total knowledge regarding first aid (n=1000)

| Items                        | %   |
|------------------------------|-----|

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

| Items                        | %   |

Table 5: Distribution of studied mothers according to their total attitude related first aid (n=1000)
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 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

| Total knowledge | Satisfaction N=412 | Unsatisfaction N=588 | Chi-square p. value |
|-----------------|--------------------|----------------------|---------------------|
| Age: 20 - <30    | 270 65.5 84 14.3   |                      | 6.101 <0.05*        |
| 30 - <40        | 112 27.2 198 33.7  |                      |                     |
| 40              | 30 7.3 306 52      |                      |                     |

| Education level: | Preparatory | Secondary | University | Chi-square p. value |
|------------------|-------------|-----------|------------|---------------------|
| Family income:   | Insufficient | Sufficient |            |                      |
| Occupation:      | Employee    | Housewife |            |                      |
| Training courses about First aid: | Yes | No | |

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

5. 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 Alhajaj 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

| Total attitude | Positive N=470 | Negative N=530 | Chi-square p. value |
|----------------|---------------|----------------|--------------------|
| Age: 20 - <30 | 194 41.3 160 30.2 | 2.104 >0.05 | |
| 30 - <40      | 140 29.8 170 32.1 | 10.746 <0.01** | |
| 40            | 136 28.9 200 37.7 | 1.006 >0.05 | |
| Education level: | Preparatory | Secondary | University | Chi-square p. value |
| Family income: | Insufficient | Sufficient |            |                      |
| Occupation:   | Employee    | Housewife |            |                      |
| Training courses about First aid: | Yes | No | |

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

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

Table 5. Correlation between studied variables. **highly significant <0.01**
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 education program on mothers’ knowledge and attitude; however, female gender and higher educational level were associated with increased 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).

6. 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.

Recommendations:

a) Based on the results of the current study, it was recommended the following;

b) Health educational program about first aid should be delivered regularly during routine schedules at primary health care units;

c) Further intervention study done to assess effect of education program on mothers’ knowledge and attitude;

d) Creating awareness and including first aid courses in the curriculum need to be considered; and

e) Use of social media for first-aid education will likely improve mothers’ awareness

Acknowledgement: Great thanks to all mothers who participated in this study.

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

Author’s contribution: Author was involved in all steps of the preparation this article including final proofreading.

Conflict of interest: None declared.

Funding: The author received no financial support for the research, authorship, and/or publication of this article.

REFERENCES

1. Asif R, Azam N, Raza FA, Riaz M, Zulfiqar S, Razzaq M. Knowledge, Attitude and Practices Regarding First Aid against Domestic Injuries in Mothers of Children less than 5 Years of Age Attending Fauji Foundation Hospital Islamabad. Pakistan Journal of Public Health. 2021; 11(3): 151-157

2. Sackitely GL. Knowledge, attitude and perception on prevention of home accidents among mothers who came to the pediatrics Department of the Korle-Bu Teaching Hospital. J Health Educ Res Dev. 2018; 6(242): 2

3. Míguez-Navarro C, Ponce-Salas B, Guerrero-Márquez G, Lorente-Romero J, Caballero-Grolimund E, Rivas-García A, Almagro–Colorado MA. The Knowledge of and attitudes toward first aid and cardiopulmonary resuscitation among parents. Journal of pediatric nursing. 2018; 42: e91-e96

4. Nour M, Alharbi W, Alawneh S, Al Ansari A, Al–Luqmami AD, Alharbi AF, Al-Malki AH. Knowledge, attitude and practices of mothers towards home accident among children, Makkah, KSA. European Journal of Pharmaceuticalals Medical Research. 2018; 5(2): 139-47

5. Pathak A, Agrawal N, Mehra L, Mathur A, Diwan V. First aid practices and health-seeking behaviors of caregivers for unintentional childhood injuries in Ujjain, India: a community-based cross-sectional study. Children. 2018; 5(9): 124

6. Karadeniz H. Effects of a Safety-Awareness—Promoting Program Targeting Mothers of Children Aged 0–6 Years to Prevent Pediatric Injuries in the Home Environment: Implications for Nurses. Journal of Trauma Nursing JTN. 2018; 25(5): 327-335

7. Anwar MM, Mostafa ZM, Elareed HR. Maternal Knowledge and Attitude about Home related Injuries in Children under Five Years. The Egyptian Family Medicine Journal. 2021; 5(2): 91-105

8. Abelaíras-Gómez C, Carballo-Fazanes A, Martínez-Isasi S, López-García S, Rico-Díaz J, Rodríguez-Núñez A. Knowledge and attitudes on first aid and basic life support of pre-and elementary school teachers and parents. Anales de Pediatría (English Edition). 2020; 92(5): 268-276

9. Naghe M, El-Raouf A, El-Mouty A, Samia M. Mothers’ knowledge and subjective practice toward most common domestic injuries among under-five children. Man soura Nursing Journal. 2020; 7(1): 19-35

10. El Seifi OS, Mortada EM, AbdO NM. Effect of community-based intervention on knowledge, attitude, and self-efficacy toward home injuries among Egyptian rural mothers having preschool children. PloS one. 2018; 13(6): e0198964

11. Al’a AS, Sabor S, Aldubai SA. Knowledge and practice of first aid among parents attending primary health care centers in Madinah City, Saudi Arabia, A cross sectional study. Journal of family medicine and primary care. 2018; 7(2): 380

12. Adib-Hajbaghery M, Kamrava Z. Iranian teachers’ knowledge about first aid in the school environment. Chinese journal of traumatology. 2019; 22(04): 240-245

13. Ilha AG, Cogo SB, Ramos TK, Andolhe R, Badke MR, Colussi G. Educational actions on first aid for early childhood education teachers: a quasi-experimental study. Revista da Escola de Enfermagem da. 2021; USP: 55

14. Maheshwari K. Knowledge of mothers regarding first aid. Asian Journal of Nursing Education and Research. 2018; 25(5): 327-335
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tries. 2021; 5(1): 309-317.
16. Joseph N, Narayanan T, bin Zakaria S, Nair AV, Belayutham L, et al. Awareness, attitudes and practices of first aid among school teachers in Mangalore, south India. Journal of primary health care. 2015; 7(4): 274-281.
17. Halil MF, Ibrahim NM, Ahmad ZNBS, Hasan MKC. Knowledge and practice of burn first aid among parents of under-age children. Enfermería Clínica. 2021; 31: S100-S104.
18. Ganfure G, Amey G, Tamirat A, Lencha B, Bikila D. First aid knowledge, attitude, practice, and associated factors among kindergarten teachers of Lideta sub-city Addis Ababa, Ethiopia. PloS one. 2018; 13(3): e0194263.
19. Abelairas-Gómez C, Carballo-Fazanes A, Martínez-Isasi S, López-García S, Rico-Díaz J, Rodríguez-Núñez A. Knowledge and attitudes on first aid and basic life support of pre- and elementary school teachers and parents. Anales de Pediatría (English Edition). 2020; 92(5): 268-276.
20. Althubaiti AQA, Altwairqi RM, Alsulimani FA, Alnefaie BM. Awareness, knowledge, attitude and practices of first aid skills among medical and non-medical students at Taif University. Middle East Journal of Family Medicine. 2019; 17(11).
21. Míguez-Navarro C, Ponce-Salas B, Guerrero-Márquez G, Lorente-Romero J, Caballero-Grolimund E, Rivas-García A, Almagro-Colorado MA. The Knowledge of and attitudes toward first aid and cardiopulmonary resuscitation among parents. Journal of pediatric nursing. 2018; 42: e91-e96.
22. Eldosoky RSH. Home-related injuries among children: knowledge, attitudes and practice about first aid among rural mothers. EMHJ-Eastern Mediterranean Health Journal. 2012; 18 (10): 1021-1027.
23. Alomar M, Al Rouqi F, Eldali A. Knowledge, attitude, and belief regarding burn first aid among caregivers attending pediatric emergency medicine departments. Burns. 2016; 42(4): 938-943.
24. Mobarak AS, Afifi RM, Qulali A. First aid knowledge and attitude of secondary school students in Saudi Arabia. Health. 2015; 7(10): 1366.