LEVEL OF AWARENESS AMONG PARENTS IN PEDIATRICS FIRST AID AND THE LEVEL OF PROTECTION FOR THEIR CHILDREN FROM RISKS IN AL-MADINA AL-MUNWWARAH, SAUDI ARABIA 2016.

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Research objectives:-
Main aim:-
Our main aim is to make the parents the first qualified paramedic who can save their children life in emergency cases

Specific objectives:-
1. to measure the level of parents awareness about the pediatric first aid
2. to associate between the pediatric first aid and their sociodemographic variables

Introduction and literature review:-
Millions and millions of children are getting hurt or even die by injuries happen to them due to inadequate response by their parents or lack of Immediate assistance. accidents tend to happen with kids a lot more frequently, knowing how to perform first aid techniques can save your children's life and keep them away from any harm [1]. Taking rapid action while waiting for professional help, can dramatically reduce deaths and injuries [2]. The prognosis of any injuries after accidents mainly depends on management provided to the child immediately following the incident. This reflects the major importance of the first-aid provided to the child, which can be life-saving [3].

Many previous studies have studied this issue in depth, in south India children under 15 years old are more vulnerable to the morbidity and mortality resulting from injuries. As caregivers of children, parents play a crucial role in the care of children immediately following injuries [4].

A study happen in Turkey showed that Many children ranging from 0 to 14 years old. Among 130 families, a total of 53 children (40.80%) experienced highly frequent burn event throughout the year which explain the extent of riskiness about these injuries [5].

Another study in İzmir, Turkey, was taken by parents against home accidents for 0-6 Years old children. There appears to be a meaningful relationship between mothers’ educational status and incidents of accidents (p=.050) and fathers’ educational status and incidents of accidents has been observed (p=.002). There wasn’t statistically relationship among mothers age group (p=.430). [6]
A study in Baghdad included 1032 mothers aged from 15–50 years. The results revealed that the level of knowledge of mothers is so low regarding the following cases: prevention of injuries from chemicals and detergents, preventing electrical accidents caused by power sockets and electrical appliances, accidents caused by fire, accidents caused by sharp instruments in the kitchen. The study also showed that 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.[7]

There is a study in Taiwan conducted on 445 parents, showed that parents' overall rate of knowledge of first aid was 72%. Knowledge regarding choking and cardiopulmonary resuscitation (CPR) were significantly low. There was a significantly positive correlation between parents' knowledge and self-efficacy of first aid ($p < 0.01$).[8]

Based on these studies, it is observed that the awareness of parents about dealing with injuries was poor for their children, and there is insufficient awareness to deal with these cases. Ignoring this disaster problem lead to increase the proportion of accidents in hospitals, health centers and increase the proportion of death. So we chose them as our target population. As far as the literature review was done. It was found out that no one has done this research on the parents in Almadinah Almonawarah. At the end of this research we are going to measure the level of parents awareness about the pediatric first aid, to associate between the pediatric first aid and their sociodemographic variables. Our main aim is to make the parents the first qualified paramedic who can save their children life in emergency cases.

**Method:**
A cross-sectional descriptive study was adopted in this study to measure the level of parents’ awareness about the pediatric First Aid, and to describe the effect of parents’ socio-demographic variables in relation to pediatric First Aid knowledge. Subjects of this study are parents who have children from 1 month to 14 years old and living in Medina. While non parent and those who don't live in Medina are excluded.

Data were statistically analyzed with the use of the Statistical Package for Social Sciences software (SPSS version 16.0 for Windows, Chicago, IL). Data was presented using frequencies, mean and standard deviation as appropriate. Data entry and analysis was done using Excel. Chi-square test of significance was used to measure the association between variables with $p$-values of 0.05 as a cut-off level of significance.

For the purpose of assessing the knowledge of subjects regarding First Aid, A well-structured questionnaire was developed by the researchers to ease the computation of the score of knowledge. The questionnaire consists of thirty questions covering socio-demographic data, descriptive data, and questions assessing the knowledge for most of pediatric First Aid as sun stroke, wounds, choking, burns, convulsions, foreign body in the eyes, ears, and nose, snake bite/scorpion sting, animal bites, poisoning, bleeding. The information in the questionnaire is based on EMERGENCY GUIDELINES FOR SCHOOLS 3RD EDITION, 2007 Ohio Department.[10]

The survey of knowledge, attitudes, and practices (KAP) score was calculated according to the number of correct responses (Table 2 & 3). Each correct answer was given one point and each wrong answer was given zero. Parents who correctly answered 50% or more of the questions were categorized as having a good level of knowledge, while parents who scored below this were classified as having poor knowledge. Associations of respondents’ KAP score ($\geq 12$ marks) with gender and education level was analyzed using Chi-Square test. 95% confidence interval was also mentioned.

Official permissions obtained from the scientific ethical committee of the college. Informed consent obtained from all the participants after describing the aim of the study. Privacy and confidentiality will be assured as questionnaire will be filled anonymously.

**Results:**
A total of 1715 parents participated in the study. Nearly an equal percentage of fathers (815, 47.5%) and mothers (900, 52.5%) filled the questionnaire. All of parents were married and have kids. Table 1, shows the sociodemographic distribution of the study subjects. There was no significant difference in the distribution of fathers and mothers in the study ($p = 0.6715$). Some demographic differences were noticeable between mothers and fathers in
the sample; a statistical significance was noticed regarding the living place, education, and number of kids among the participants.

**Table 1:** Socio-demographic Data.

| Variable parameter                      | Fathers       | Mothers      | Total %     | p - value |
|-----------------------------------------|---------------|--------------|-------------|-----------|
| Gender of Participant parents:          |               |              |             |           |
| Fathers                                 | 815 (47.5%)   | 900 (52.5%)  | 1715 (100%) | 0.6715    |
| Mothers                                 | 900 (52.5%)   | 900 (52.5%)  | 1795 (100%) | 0.8400    |
| Total %                                 | 1715 (100%)   | 1795 (100%)  | 3510 (100%) |           |
| p - value                               | 0.6715        | 0.8400       |             |           |
| Living place:                           |               |              |             |           |
| Urban area (in madinah)                 | 780           | 840          | 1620 (94.5%)| < 0.0001*|
| Suburb area (outside madinah)           | 35            | 60           | 95 (5.5%)   |           |
| Education:                              |               |              |             |           |
| Illiterate                              | 24            | 31           | 55 (3.2%)   | < 0.0001*|
| Primary level                           | 62            | 120          | 182 (10.6%) |           |
| Preparatory level                       | 48            | 60           | 108 (6.3%)  |           |
| High school level                       | 159           | 199          | 358 (20.9%) |           |
| University level                        | 467           | 432          | 899 (52.4%) |           |
| Post-Graduated                          | 55            | 58           | 113 (6.6%)  |           |
| No. of kids:                            |               |              |             |           |
| Only one kid                            | 160           | 214          | 374 (21.8%) | < 0.0001*|
| More than one kid                       | 655           | 686          | 1341 (78.2%)|           |

*Significantly different using Chi-square test (P ≤ 0.05).

At the beginning of the questionnaire, nearly 1000 parent out of 1715 (58.3%) thought that they have an average knowledge about pediatric First Aid, figure 1. Only 593 of parents (34.6%) conducted a proper action when faced pediatric First Aid situations, figure 2.

Almost all participants are aware of the importance of learning First Aid in general even without the presence of kids suffering of chronic diseases, but unfortunately 55.5% of them didn’t own First Aid bag at home. The ones who didn’t own a First Aid bag explain this as they are not aware of its importance and they don’t know its contents.

A percussive result revealed that 1139 parent (66.4%) didn’t receive training on First Aid but the want to get it, and only 360 parent (21%) had this training more than a year ago.

**Figure 1:** How parents think that they know about pediatric First Aid.
Knowledge of subjects regarding First Aid:

Table 2 & 3 shows the knowledge of First Aid as reported by the study population. The individual responses to various statements of the questionnaire have been mentioned and were used for the survey of knowledge, attitudes, and practices (KAP) score.

In table 2, higher percentage of participant parents answered correctly to management of sun-stroke, deep wounds, choking, epistaxis, and some of the diabetic emergencies. While most of them answered wrongly regarding management of hypoglycemic coma, epilepsy.

In table 3, higher percentage of participant parents answered correctly to management of burns, cardiac arrest, fracture, electric shock, acute asthma, eye exposure to chemicals, foreign body in ear&nose, snake bites, and hypothermia. While wrong answers were prominent when dealing with loss of conscious level, poisoning and high grade fever.

Table 2:-Responses to various statements of questionnaire (Part 1)

| Statement                                                                 | Number | %    | 95% CI        |
|---------------------------------------------------------------------------|--------|------|--------------|
| If your kid exposed to sun-stroke, what will you do?                      |        |      |              |
| o give him a large amount of fluid                                        | 436    | 25.4 | 23.45 - 29.30|
| o Undress him and make cool compresses with fluids*                       | 795    | 46.4 | 42.56 - 50.28|
| o bath in cold water                                                      | 174    | 10.1 | 8.44 - 11.78 |
| o I do not know and ask for help                                          | 310    | 18.1 | 14.48 - 21.78|
| If your kid has deep wound, what first step you make?                     |        |      |              |
| o Wash the wound and stop the bleeding by pressing it and take it to the nearest clinic* | 1220   | 71.1 | 69.4 - 74.7  |
| o put coffee or honey on the wound and press the wound and took him to the nearest clinic | 185    | 10.8 | 8.2 - 13.9   |
| o remove foreign body and took him to the nearest clinic                  | 235    | 13.7 | 11.2 - 16.3  |
| o I do not know and ask for help                                          | 75     | 4.4  | 3.3 - 5.5    |
| During choking & your kid can breathe & move, what should you do?         |        |      |              |
| o inform him that to bend his back                                        | 221    | 12.9 | 10.6 - 15.8  |
| o inform him to coughs strongly to get-out the foreign body*              | 474    | 27.6 | 22.8 - 30.3  |
| o hit his back several times                                              | 943    | 55   | 51.4 - 59.1  |
| o I do not know and ask for help                                          | 77     | 4.5  | 3.6 - 5.4    |
| If your kid exposed to choking during eating and could not breath, what would you do? |        |      |              |
| o trying to take food out of his mouth by inserting a finger              | 262    | 15.3 | 13.6 - 17.2  |
| o bend him forward and hit him on the back continuously                   | 582    | 33.9 | 29.9 - 37.8  |
| o press with my fist below the chest and above the navel, in upward direction* | 807    | 47.1 | 44.6 - 49.7  |
| o I do not know and ask for help                                          | 64     | 3.7  | 2.2 - 5.5    |
If your baby exposed to choking after feeding and could not breath, what would you do?
- change feeding position immediately and blow in his face 955 55.7 52.8–
- put the baby on my left arm with head facing downward and hit him with the right hand on his back 304 17.7 58.4–
- put his head on my shoulder and hit his back 84 4.9 15.5–
- I do not know and ask for help 201 4.1 84.8–

If your kid is a diabetic and fall unconscious, What is the first thing you do?
- give him an injection of insulin 156 9.1 8.9–14
- give him an injection of glucose 200 11.7 44.1–
- measurement of his glucose level* 815 47.5 50.5–
- I do not know and ask for help 544 31.7 27.5–34.8

If your kid is diabetic and suffers a severe decrease in his serum glucose level with loss of consciousness, what is the first step you do?
- give him honey or sugar by mouth in a glass with water 785 45.8 23.7–48.9
- give him an injection of glucose 441 25.7 28.9–
- Re-measure his glucose level again 125 7.3 4.9–9.1
- I do not know and ask for help 364 21.2 17.8–24.1

If your kid is diabetic and suffers a severe decrease in his serum glucose level without loss of consciousness, what is the first step you do?
- give him honey or sugar by mouth in a glass with water* 1049 61.2 2.9–9.4
- give him an injection of glucose 107 6.2 11.8–
- Re-measure his glucose level again 247 14.4 17.6–
- I do not know and ask for help 312 18.2 15.9–22.4

If your kid is a diabetic and suffers high serum glucose level and loss of consciousness, what is the first step you do?
- give him honey or sugar by mouth in a glass with water 137 8 49.5–
- give him an injection of glucose 71 4.1 58.2–
- give him an injection of insulin* 914 53.3 29.7–38
- I do not know and ask for help 593 34.6

While the kid suffered an epileptic seizure, you should:
- put away any objects that may hit his head and put him on his left side* 382 22.3 26.2–
- put water on his face to wake up and give him water to drink 151 8.8 6.1–9
- put something in his mouth in order not to bite his tongue and take him to hospital 868 50.6 46.6–54.8
- I do not know and ask for help 314 18.3 14.8–23.4

When a kid has epistaxis, what will you do to help him?
- inhalation of cold water and raise the head up 230 13.4 30.6–
- put cold water or ice on the nose & head and stop the bleeding using tissues 567 33.1 37.9–
- put his head facing downward so he could breathe without swallowing blood with pressure on the nose* 795 46.4 42.7–49.8
- I do not know and ask for help 123 7.2 5.3–9.2

* indicates correct response which was scored as 1 point each
| Question                                                                 | Option 1          | %   | % Range |
|-------------------------------------------------------------------------|-------------------|-----|---------|
| What will you do if your kid’s heart stopped?                           | o do resuscitation CPR* | 705 | 41.1    |
|                                                                         | o pressure on the chest several times | 497 | 29      |
|                                                                         | o left without doing anything and continue yelling | 427 | 24.9    |
|                                                                         | o I do not know and ask for help         | 86  | 5       |
|                                                                         | o do not know and ask for help           | 110 | 6.4     |
|                                                                         | o pressure on the chest several times   | 44.5|
|                                                                         | o left without doing anything and continue yelling | 26.4|
|                                                                         | o I do not know and ask for help         | 31.8|
|                                                                         | o do not know and ask for help           | 21.9–27 |
|                                                                         | o do not know and ask for help           | 7.9  |
| If you find your kid unconscious, what would you do?                    | o Bring a strong smelling material like perfume or onions and try to wake him up | 1069 | 62.3      |
|                                                                         | o I clear the area visually & remove any possible risk* | 123 | 7.2      |
|                                                                         | o measure serum glucose level            | 158 | 9.2      |
|                                                                         | o I do not know and ask for help         | 365 | 21.3     |
|                                                                         | o I do not know and ask for help         | 58.8–|
|                                                                         | o pressure on the chest several times   | 64.2|
|                                                                         | o left without doing anything and continue yelling | 5.2–9.1 |
|                                                                         | o I do not know and ask for help         | 18.3–24 |
| How do you deal with a fracture in any part of the kid’s body?         | o trying to put the fracture bone to normal position & rush to hospital | 130 | 7.5      |
|                                                                         | o fix the fracture in its position over a straight board and taken to the hospital* | 906 | 52.8     |
|                                                                         | o wrapped with cloth and taken to the hospital | 374 | 21.8     |
|                                                                         | o I do not know and ask for help         | 305 | 17.8     |
|                                                                         | o I do not know and ask for help         | 18.2–|
|                                                                         | o pressure on the chest several times   | 24.9|
|                                                                         | o left without doing anything and continue yelling | 14.8–|
|                                                                         | o I do not know and ask for help         | 21.4 |
| What is the right thing to do when your kid experience an electric shock?| o ask him in run away from the power source | 50  | 2.9      |
|                                                                         | o Trying to push the child away.         | 194 | 11.3     |
|                                                                         | o switch off power and try to move the kid using electricity neutral material* | 1343 | 78.3 |
|                                                                         | o I do not know and ask for help         | 128 | 7.5      |
|                                                                         | o I do not know and ask for help         | 0.6–4.9 |
|                                                                         | o pressure on the chest several times   | 9.1–13.9|
|                                                                         | o left without doing anything and continue yelling | 74.6–|
|                                                                         | o I do not know and ask for help         | 3.8–12.5|
| If your kid has asthma and is suffering from acute respiratory crisis, what would you do? | o ask him to lie down and don’t move | 74  | 4.3      |
|                                                                         | o transfer to hospital immediately       | 444 | 25.9     |
|                                                                         | o give him asthma medication and then taken to hospital* | 1091 | 63.6 |
|                                                                         | o I do not know and ask for help         | 106 | 6.2      |
|                                                                         | o I do not know and ask for help         | 58.2–|
|                                                                         | o pressure on the chest several times   | 66.1|
|                                                                         | o left without doing anything and continue yelling | 4.8–9  |
|                                                                         | o I do not know and ask for help         | 1.3–8.2|
| What would you do if your kid’s eyes are exposed to chemical material?  | o take him to the hospital quickly      | 147 | 8.6      |
|                                                                         | o wash eyes with excess water and then take him to the hospital* | 1424 | 83      |
|                                                                         | o cover the eyes with a cloth and took him to the hospital | 69  | 4        |
|                                                                         | o I do not know and ask for help         | 75  | 4.4      |
|                                                                         | o I do not know and ask for help         | 7–10.2|
|                                                                         | o pressure on the chest several times   | 86.3|
|                                                                         | o left without doing anything and continue yelling | 1.4–7.9 |
|                                                                         | o I do not know and ask for help         | 2–7.3|
| What would you do if your kid put a strange object in his ear or nose? | o cover the ear or nose with a sterile cloth after washing with cold water and take him to the hospital | 118 | 6.9     |
|                                                                         | o If the strange object is seen clearly I gently drag out it, but in case of resistance or bleeding I should stop and take him to the hospital* | 1190 | 69.4 |
|                                                                         | o I drag out the strange object in all cases with a sterile instrument and then take him to the hospital | 261 | 15.2    |
|                                                                         | o I do not know and ask for help         | 146 | 8.5      |
|                                                                         | o I do not know and ask for help         | 12.4–|
|                                                                         | o pressure on the chest several times   | 17.5|
|                                                                         | o left without doing anything and continue yelling | 6.1–10.9 |
|                                                                         | o I do not know and ask for help         | 3.4–9.2|
| If your kid is exposed to snake or scorpion bite, the first thing you're doing? | o tie a piece of cloth over bitten area & communicate with the Poison Center and take him to the hospital* | 1074 | 62.6   |
|                                                                         | o I do not know and ask for help         | 81  | 4.7      |
|                                                                         | o pressure on the chest several times   | 57.2–|
|                                                                         | o left without doing anything and continue yelling | 65.8  |
o strip the bitten area by scalpel and then communicate with the Poison Center and take him to the hospital
o suck the poison by my mouth and then communicate with the Poison Center and take him to the hospital
o I do not know and ask for help

If your kid was poisoned, what is the first thing you're doing?

- strip the bitten area by scalpel and then communicate with the Poison Center 303 17.7 2.2 – 8.1
- suck the poison by my mouth and then communicate with the Poison Center 257 15 14.7 – 20.4
- I do not know and ask for help 204 12.6 – 18.4
- force him to vomit in all cases 821 47.9 44.3 –
- give him water or honey or lemon to drink 293 17.1 49.8
- I do not know and ask for help 261 15.2 21.4

If your child's temperature exceeds 38 °C, you should:

- bathe him with cold water. 202 11.8 8.9 – 14
- give him anti-pyretic. 1134 66.1 62.2 –
- I do not know and ask for help 51 3 15.7 –

If your kid become hypothermic and feel cold, you should:

- take him to an average temperature place and cover him with blanket and give warm drink* 1357 79.1 75.6 –
- bathe him with very hot water. 82 4.8 82.8
- I do not know and ask for help 190 11.1 2.3 – 6.9

* indicates correct response which was scored as 1 point each

Table 4 shows the association of baseline knowledge of First Aid in the study population and their socio-demographic variables. High KAP scores (≥ 12 marks) were observed among participating fathers than mothers, p-value = 0.0444. Parents living in Urban area (in madinah) got more KAP score than those living Suburb area (outside madinah), p-value < 0.0001. Responders with higher level of education have a remarkable higher KAP score, with 87.6% answered correctly with KAP score more than 12 marks. On the other hand, only 12.7% of illiterate parents get a KAP score ≥ 12 marks.

There was extreme significant association between KAP score and some socio-demographic variables, such as the parents’ gender, living place & level of education.

Table 4: Showing association of KAP Score with gender, living place & level of education.

|                     | KAP Score (≥ 12 marks) | Total participants | Number of right answers (%) | P-value      |
|---------------------|------------------------|--------------------|----------------------------|--------------|
| **Gender**          |                        |                    |                            |              |
| Fathers             | 815                    | 587 (72%)          |                            | 0.0444*      |
| Mothers             | 900                    | 496 (55.1%)        |                            |              |
| **Living place:**   |                        |                    |                            |              |
| Urban area (in madinah) | 1620               | 1060 (65.4%)       |                            | < 0.0001*    |
| Suburb area (outside madinah) | 95              | 23 (24.2%)         |                            |              |
| **Education:**      |                        |                    |                            |              |
| Illiterate          | 55                     | 7 (12.7%)          |                            |              |
| Primary level       | 182                    | 36 (19.7%)         |                            | < 0.0001*    |
| Preparatory level   | 108                    | 44 (40.7%)         |                            |              |
| High school level   | 358                    | 218 (60.8%)        |                            |              |
| University level    | 899                    | 679 (75.5%)        |                            |              |
| Post-Graduated      | 113                    | 99 (87.6%)         |                            |              |
*Significantly different using Chi-square test (P ≤ 0.05).

Discussion:--
First aid is considered to be a vital initial step for providing effective and rapid intervention that helps to reduce serious injuries and improve the chances of survival. The lower the awareness of first aid techniques, the greater the risk associated with domestic accidents. All parents should be educated about basic first aid. Increasing the training level will increase the ability to face the most common of accidents without panicking but by doing the right thing [10].

Our result found that most of parents have an average knowledge about children first aid but also near 500 parent have a weak knowledge. Although many parents agree on the importance of learning about first aid, only 55.5% of them didn’t have first aid bag at home. Majority (66.4%) of parents were didn’t receive training regarding First Aid in present study. This is in similar with the previous observation made in Taiwan noted that was a significantly relation between parents’ knowledge and self-efficacy of first aid (p < 0.01).[8]

In present study higher percentage of parents have adequate management of sun-stroke, deep wounds, choking, epistaxis, and some of the diabetic emergencies. In other hand most of them have wrong management of hypoglycaemic coma, epilepsy. This is similar to the observation made also in Taiwan noted that parents’ overall rate of knowledge of first aid was high and Knowledge regarding choking and cardiopulmonary resuscitation (CPR) were significantly low.

Our result indicate that High KAP scores were observed among participating fathers than mothers. This gets along with the result in Baghdad were it showed that the level or awareness of mothers is so low against many serious cases. [7]

Study results shown extreme significant relation between KAP score and some socio-demographic variables, such as the parents’ gender, living place & level of education.

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