

## CARE FOR CHILDREN WITH SCALDS BURN AT HOME

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#### Abstract:

Scalds burns are the most common type between children especially from the accidental spilling of hot water. **Aim of the Study:** This study was conducted to evaluate the mother's knowledge and practices regarding scalded burn and home care. **Design:** Experimental design was used in this study. **Setting:** The current study was conducted at outpatient clinics at Al Ahrar hospital. **Study Subjects:** A purposive sample of 70 patients with scalds burn were chosen according to inclusion criteria. **Data Collection Tools:** Three tools were used, First tool: Interviewing questionnaire for patients was used which included two parts: part1:Demographic characteristics for child as child age, gender, Siblings, education level.Part2: Mother's knowledge regarding scalded burn as causes of scalds burns, definition of scalds, types of scalds Part 3: Mother's practices regarding scalds burn for first aids. Part 4: Taylor scale to assess anxiety level. **Conclusion:** There was a highly statistical significant between nurses' practice pre and post program implementation at ( $p < 0.001$ ). **Recommendation:** Emphasize the importance of conducted health education programs for all mothers, especially new parents, on home accidents prevention and first aid as a routine service at primary health care units and out patient's clinic at general hospitals.

**Index Terms:** Burn injury, scalds burn, home injuries

## INTRODUCTION

Burns are the most common household injuries, especially in children. Burns are characterized by severe skin damage in which many of the affected cells die. Depending on the cause and degree of injury, most people can recover from burns without serious health consequences. More serious burns require immediate emergency medical care to prevent complications and death [1].

Scalds burns are the most common type between children especially from the accidental spilling of hot water, scalds burn is form of thermal burn resulted from heated fluids such as boiling water or steam, most scalds are considered first or second degree burns, and there are several factors that contribute the incidence and severity of burn injury in children [2].

### Significance of the problem

Scalds burn in pediatrics is very common in our society need medical and psychological support these children require repeated dressing every other or 3 days so, the cost for treat these injuries are considerably moderate to high, this type of burn require reassurance

from medical person, relative. Hot tap water burns because more deaths and hospitalizations than burns from any other hot liquids [3].

### **Aim of the work**

This study is aimed to evaluate Care for children with Scalds burn at home through:

- 1) Assessing mother's knowledge and practices regarding scalded burn and home health care.
- 2) Designing, implementing health education program for mothers regarding home health care for scalds burn.
- 3) Evaluate mother's knowledge, practices regarding home health care for scalds burn after implemented health education program.

### **Hypothesis:**

Home health care program will improve mothers' knowledge and their practices related to care of their children with scalds burn.at home.

### **METHODS:**

#### **1- Technical design:**

**Research design:** Experimental design will be conducted for this study.

**Research setting:** This study will conducted at outpatient clinics at Al Ahrar Hospital.

**Sample:** This study will be conducted at outpatient clinics at Alahrar hospital it include 500 child with scalds burn in 2018, purposive sample will be used, 10% of All mothers attending to previous setting as rate of cases according inclusion criteria through three months.

**Criteria:** Including all mothers of children with scalds burn with 1<sup>st</sup>, 2<sup>nd</sup> degree, children age under twelve, mothers accepted to participate with the program.

#### **Tools of data collection:**

Three tools were used for collected the data as following:

**First tool: A Structured interviewing questionnaire sheet (Appendix II): pre, post and follow up, consisted of six parts for the children suffering from scald burn and their mothers**

It was developed by the researcher based on review of literature and content validated by the expertise from Faculty of Nursing. It constructed to assess their socio demographic data, knowledge and their practices regarding scald burn. It was included the following:

**Part 1:** Demographic characteristics for child as child age, gender, Siblings, rank, education level.

**Part 2:** Socio demographic data: For mothers and it included data about age, educational

level, marital status, occupation, number of children in residence.

**Part 3:** History of burn as factors contributing to the injury cause of scalds burn, degree of scalds burn, body parts burned, percentage of scalds burn.

**Part 4:** Mothers' knowledge according to scalds burn as causes of scalds burns (pre-post and follow up):

**Such as** definition of scalds, causes, types of scalds, manifestations, tips on preventing scald burn, first aid advice, high –risk environment (14 questions). Knowledge about Percussion methods for scalds burn (13 questions). Knowledge about Nutrition needed for children with scalds burn (6 questions). Knowledge about first aids for scalds burn (10 questions).

**Total scoring system of mothers' knowledge:**

**Three levels of scoring for each question was as the following:**

- Correct and complete answer was scored (2) grade.
- Correct and incomplete answer was scored (1) grade.
- Incorrect answer or don't know was scored (0).

So, the total score of 43 questions were 28 grades.

The total scoring system of mothers' knowledge was calculated and classified into three levels as following:

- For 75-100% was considered good level of knowledge.
- For 60 - < 75% was considered average level of knowledge.
- For less than 60% was considered poor level of knowledge.

**Second tool:** An Observational Checklist Sheet regarding scaled burn for first aids (Appendix III): (pre-post, and follow up) (22 questions): It covered the following skills: dressing for scaled burn, hygienic measures, bandage, infection control, and physician follow up. Adopted from Wong and Hess [4].

**Scoring system for mothers' practices:**

- The mothers' response for each statement was ranged from done and not done. The total scoring system of mothers' practices regarding scalds burn for first aids was calculated and classified into two levels as the following:
- For 60% and above was considered done level of practices.
- For below 60% was considered not done level of practices.

**Tool (III): The Burn Anxiety Inventory attitude:** it was adopted from Abdel-Hamid and El-Nail, [5] to assess children and mothers' attitude regarding anxiety toward scaled burn and was translated into Arabic language by the researcher; it composed of 3 items never, sometimes and always. It contained 24 questions for three main items (anxious feedings, anxious thoughts and physical symptoms).

### **Scoring system:**

The Burn Anxiety Inventory attitude has a three point Likert scale ranging from 1 never, 2 sometimes and 3 always. An overall score

Total attitude score was classified as the following:

- Never when the total score was less than 60%.
- Sometimes when the total score was 60% to less than 75%.
- Always when the total score was 75% to 100%.

### **II- Operational Design:**

The operational design was included; preparatory phase, ethical considerations, tools validity and reliability, pilot study and field of work.

#### **Preparatory phase:**

The researcher reviewed the local and international literature to be aware of various aspects of the research problem, by using books, journals and internet search and to design the study tools.

#### **Validity and Reliability:**

Tools of data collection were investigated for their content validity by three experts in the field of Pediatric Nursing, Zagazig University (One expert was professor in pediatric nursing and other two experts were professor in community health nursing). The experts reviewed the content of the instruments and to judge its clarity, relevance, comprehensiveness, simplicity and applicability. This phase took around one month (April 2019) and there was no change in tools at the end of this phase except arrangement of some questions in the questionnaire sheet. Testing reliability of proposed tool was done using the Chronbach's Alpha coefficient test to measure the internal consistency of the tools. It was found that, the reliability for the structured questionnaire sheet for assessment of mothers' knowledge was ( $\alpha = 0.842$ ) and for the observational checklist used to assess mothers' practice regarding to scaled burn was ( $\alpha = 0.89$ )

#### **Field work**

For work organization, the researcher allocated 3 days each week ((Monday, Tuesday and Wednesday.), between 3- 5 mothers / day, from 10 AM – 2 PM, for collection of data from mothers at selected setting.

The mothers interviewed at out-patient clinics at Al Ahrar hospital in Zagazig City affiliated to Sharqia Governorate and explanation the aim of the work.

- Actual field work was carried out in the period from February 2020 up to July 2020
- The assessment phase (pretest) was done for 70 mothers; it lasted 3 months to be fulfilled. The implementation phase of the program& posttest lasted for 3 months to be

accomplished.

- Posttest was done immediately after program implementation phase for 3 months to be accomplished.
- Teaching sessions were conducted in a reception of outpatient clinics at Al-Ahrar hospital in Zagazig City and in corridors.
- The average time consumed to fill tools was 45 minutes. Informed consent was secured before collecting data.

**Result:**

**Statistical design:** The collected data were organized, coded, computerized, analyzed and tabulated by using electronic computer and Statistical Package for Social Sciences (SPSS) version 20, which used frequencies and percentages for qualitative descriptive data and chi square coefficient ( $\chi^2$ ) was used relation tests, mean and standard deviation was used for quantitative data, person correlation coefficient (r) was used for correlation analysis.

A significant level value was considered when:

- P-value < 0.001 was considered as highly statistically significant.
- P-value < 0.05 was considered statistically significant.
- P-value >0.05 was no statistically significant difference.

**Table (1): Distribution of children according to their demographic characteristics (n=70)**

Children' characteristics	No	%
Age/years		
<3	28	40.0
3<6	17	24.3
6<9	11	15.7
9-12	14	20.0
Mean $\pm$ SD 5 $\pm$ 6.87		
Gender		
Male	26	37.1
Female	44	62.9
Educational level		
Nursery	38	54.3
Preparatory	32	45.7
Ranking		
First	6	8.6
Second	24	34.3
Third	26	37.1
4 and more.	14	20.0

**Table (1):** shows that 40 % of scald children their age <3 years, with the mean age of children  $5 \pm 6.87$ , 62.9% of children was female, 54.3% of them at nursery

Table (2): Distribution of mothers according to their knowledge about scalds burn pre, Immediate Post and at Follow Up after implementation of Training Program. (N=70).

Items	Pre intervention		Post Intervention		Post 3 months		Pre-Post		Pre-post 3months	
	N	%	N	%	N	%	$\chi^2$	Sig	$\chi^2$	Sig
Meaning of scald burn										
Poor	62	88.6	0	0	16	22.9	MC	0.000**	MC	0.000**
Average	3	4.3	13	18.6	17	24.3				
Good	5	7.1	57	81.4	37	52.9				
Signs of scalds burn										
Poor	19	27.1	10	14.3	9	12.9	22.89	0.000**	17.84	0.000**
Average	40	57.1	22	31.4	27	38.6				
Good	11	15.7	38	54.3	34	48.6				
Causes of scalds burn										
Poor	40	57.1	12	17.1	20	28.6	49.396	0.000**	31.94	0.000**
Average	21	30	8	11.4	9	12.9				
Good	9	12.9	50	71.4	41	58.6				
Wrong home treatment										
Poor	52	74.3	14	20	20	28.6	63.152	0.000	49.49	0.000**
Average	18	25.7	15	21.4	15	21.4				
Good	0	0	41	58.6	35	50				
Home care steps										
Poor	68	97.1	20	28.6	11	15.7	MC	0.000**	MC	0.000**
Average	2	2.9	8	11.4	7	10				
Good	0	0	42	60	52	74.3				
Complications peak pimples										
Poor	69	98.6	16	22.9	17	24.3	MC	0.000**	MC	0.000**
Average	1	1.4	9	12.9	6	8.6				
Good	0	0	45	64.3	47	67.1				
Request medical treatment										
Poor	70	100	13	18.6	15	21.4	MC	0.000**	MC	0.000**
Average	0	0	0	0	2	2.9				
Good	0	0	57	81.4	53	75.7				

N.B. \* statistically significant p value <0.05, \*\* highly statistically significant p value <0.01, **MC: Monte Carlo test: 2 cells have expected cell count <5**

**Table (2):** illustrates that, 88.6 % of studied mothers had poor knowledge pre intervention about meaning of scalds burn compared to 81.6% of them had good in post intervention and 52.9 % at follow up, regarding signs of scalds burn this table found that 57.1% of them had average knowledge at pre intervention compared to 54.3% & 48.6% respectively of the mothers had good knowledge post intervention and post three months.

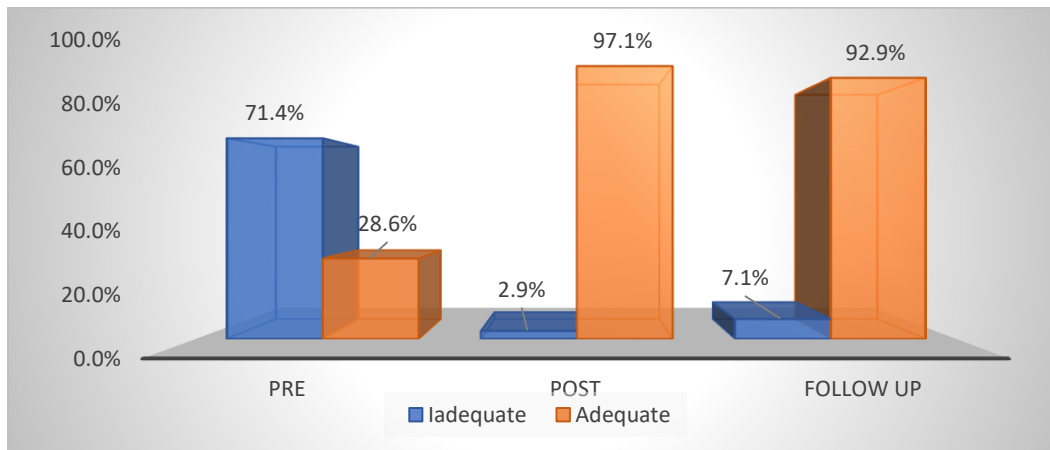
**Table (3): Distribution of mothers according to their dressing care for children with scalds pre, Immediate Post and at Follow Up after implementation of Training Program. (N=70).**

Items	Pre intervention		Post Intervention		Post 3 months		Pre-Post		Pre-post 3months	
	N	%	N	%	N	%	$\chi^2$	Sig	$\chi^2$	Sig
Hand hygiene										
Not Done	59	84.3	25	35.7	28	40	34.40	0.000**	29.17	0.000**
Done	11	15.7	45	64.3	42	60				
Remove old dressing										
Not Done	25	35.7	4	5.7	9	12.9	19.18	0.000**	9.94	0.002**
Done	45	64.3	66	94.3	61	87.1				
Notice the site of wound for any secretion										
Not Done	60	85.7	26	37.1	28	40	34.84	0.000**	31.32	0.000**
Done	10	14.3	44	62.9	42	60				
Avoid remove bubbles										
Not Done	60	85.7	23	32.9	26	37.1	40.51	0.000**	34.84	0.000**
Done	10	14.3	47	67.1	44	62.9				
Rinse with solution										
Not Done	41	58.6	11	15.7	16	22.9	27.53	0.000**	18.49	0.000**
Done	29	41.4	59	84.3	54	77.1				
Put ointment										
Not Done	40	57.1	1	1.4	3	4.3	52.46	0.000**	45.95	0.000**
Done	30	42.9	69	98.6	67	95.7				
Put sterile dressing										
Not Done	18	25.7	0	0	3	4.3	20.65	0.000**	12.60	0.000**
Done	52	74.3	70	100	67	95.7				
hand washing after the procedure										
Not Done	59	84.3	28	40	31	44.3	29.17	0.000**	24.39	0.000**
Done	11	15.7	42	60	39	55.7				

N.B. \* statistically significant p value <0.05, \*\* highly statistically significant p value <0.01, **MC: Monte Carlo test: 2 cells have expected cell count <5**

**Table (3):** as regards mothers' practices about dressing care for children with scalds this table shows that 84.3 % of studied mothers had not done at pre intervention about hand hygiene compared to 64.3% of them had done in post intervention and 60 % had done at follow up, regarding remove old dressing 35.7% of them had not done at pre intervention compared to 94.3% & 87.1% respectively of the mothers had done post intervention and post three months.

**Figure (1): Percentage of mothers according to their dressing care for children with scalds pre, Immediate Post and at Follow Up after implementation of Training Program. (N=70).**

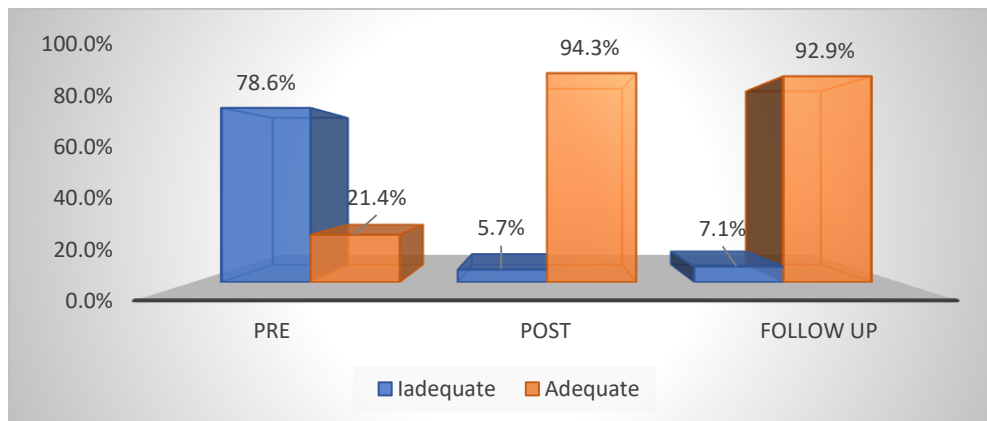


**Comparison between pre and post immediate program ( $\chi^2$ ; 70.49;0.000\*\*) Highly significant statistical difference**

**Comparison between pre and post 3 months program ( $\chi^2$ ; 60.642;0.000\*\*) Highly significant statistical difference**

**Figure (1):** illustrates that 71.4 % of the studied mothers had inadequate total practices at pre intervention about dressing care for children with scalds compared to 2.9 % of them had inadequate total practices at post intervention and 7.1 % of mothers had inadequate total practices at follow up. Moreover, 28.6 % of the studied mothers had adequate total practices at pre intervention compared to 97.1% of them had adequate total practices at post intervention and 92.9 % of mothers had adequate total practices at follow up.

**Figure (2): Percentage of mothers according to their practice for children with Scalds Burn at home pre, Immediate Post and at Follow Up after implementation of Training Program. (N=70).**





**Comparison between pre and post immediate program ( $\chi^2$ ; 76.196;0.000\*\*) Highly significant statistical difference**

**Comparison between pre and post 3 months program ( $\chi^2$ ; 72.917;0.000\*\*) Highly significant statistical difference**

**Table (4): Distribution of children regarding psychological anxiety level relating to their Burn pre, Immediate Post and at Follow Up after implementation of Training Program (N=70)**

Items	Pre intervention		Post Intervention		Post 3 months		Pre-Post		Pre-post 3months	
	N	%	N	%	N	%	$\chi^2$	Sig	$\chi^2$	Sig
Eating disturbance										
Never	2	2.9	34	48.6	30	42.9	MC	0.000**	MC	0.000**
Sometimes	43	61.4	36	51.4	38	54.3				
Always	25	35.7	0	0	2	2.9				
Increase child nervousness										
Never	12	17.1	34	48.6	28	40	MC	0.000**	MC	0.000**
Sometimes	56	80	36	51.4	40	57.1				
Always	2	2.9	0	0	2	2.9				
Difficulty in concentrating										
Never	17	24.3	45	64.3	45	64.3	29.70	0.000**	29.70	0.000**
Sometimes	39	55.7	25	35.7	25	35.7				
Always	14	20	0	0	0	0				
Irregular sleeping										
Never	1	1.4	32	45.7	27	38.6	MC	0.000**	MC	0.000**
Sometimes	58	82.9	38	54.3	43	61.4				
Always	11	15.7	0	0	0	0				
Isolation child does not participate at any social activities										
Never	21	30	47	67.1	44	62.9	23.255	0.000**	18.12	0.000**
Sometimes	8	11.4	9	12.9	9	12.9				
Always	41	58.6	14	20	17	24.3				
Panicking and nightmares during sleeping										
Never	18	25.7	41	58.6	38	54.3	17.64	0.000**	14.039	0.001**
Sometimes	13	18.6	12	17.1	13	18.6				
Always	39	55.7	17	24.3	19	27.1				
Constant fear from others										
Never	15	21.4	43	61.4	39	55.7	25.74	0.000**	18.88	0.000**
Sometimes	14	20	12	17.1	12	17.1				
Always	41	58.6	15	21.4	19	27.1				

N.B. \* statistically significant p value <0.05, \*\* highly statistically significant p value <0.01, **MC: Monte Carlo test: 2 cells have expected cell count <5**

**Table (4):** as regards children regarding psychological anxiety level relating to their burn this table shows that 61.4 % of studied children had sometimes eating disturbance at pre intervention compared to nothing of them had always disturbed eating in post intervention and only 2.9 % of them had always at follow up, regarding increase child nervousness 80% of them

had sometimes at pre intervention compared to also nothing of the children had always increase the nervousness at post intervention.

## DISCUSSION

Immediate and effective first aid after burns significantly reduces pain and tissue damage size, accelerates burn recovery, and increases survival rate [6]. Mothers play an important role in providing a safe environment for children to minimize or prevent injuries and first aid in case of injury in practice [7].

As regards age of studied children that (**table 1**), the present study revealed that, less than half of scald children were aged less than 3 years with the mean age  $5\pm 6.87$ . This result study is consistence with Alomar et al., [8] in study titled "Knowledge, attitude, and belief regarding burn first aid among caregivers attending pediatric emergency "in Tehran Iran who found that, most studied children aged were  $>5$  years. From researcher point of view their motor skills development outpaces their cognitive development, so they can perform physically, but do not understand the associated risks of injury. **Simon and Baron** (2018) [9] attributed increasing motor skill with increasing ability to encounter hot liquids or solids. In addition, more than two thirds of children were female. this study is consistence with Li et al., (2017) [10] in titled "Epidemiology of pediatric burns" in southwest China from 2011 to 2015 more of half children were boys, and the result done by Marashi & Baatarjav (2017) [11] titled "Pediatric burn injuries requiring hospitalization" in Fars, Southern Iran who stated that more of half were males and the mean age of the children was  $2.86\pm 2.86$  years. Also, the current study shows that more than half of them at nursery. Moreover, more than one third of children were third ranking.

Also this finding is in agreement with Mohammed et al. (2018) [12] who implement Supportive strategies regarding accidents prevention for mothers of children under five years old they mentioned that, more than half of the mothers were housewives and low family income. In relation to residence of the studied mothers it was found that, more than half of them had residence in urban area. Moreover, this finding is in agreement with Ummuhan and Behice, (2016) [13] who study determination of knowledge, attitudes and behaviors regarding factors causing home accidents and prevention for mothers with a child aged 0-5 Years, they found that, a significant relationship was detected between residence of family and home accident in child. As well found that, incidence of home accident is higher in children of families residing in isolated house. This finding similar the studies by Waled, (2018) [14] who study the home accidents and associated factors among children less than five years old in Sudan he was found that children living in flatted houses exposed to home accidents are more commonly.

As regards mothers' knowledge related to scalds burn table (2): illustrates that, majority of studied mothers had poor knowledge pre intervention about meaning of scalds burn compared to most of them had good in post intervention and more than half at follow up, regarding signs of scalds burn this table found that more than half of them had average knowledge at pre intervention compared to more than half & less than half respectively of

the mothers had good knowledge post intervention and post three months. Also, the causes that indicate more than half of mothers had poor knowledge at pre intervention compared to 71.4% and 58.6% have good knowledge post intervention and post three months. This is in agreement with the findings of Yassin et al., (2018) [15] who conducted their research about the relation about mother's education and her knowledge about home accident prevention among preschool children in rural area in Sharqia governorate and reported that, more than half of the mothers did not know anything about home accidents to which their children might be exposed.

Also this finding supported by Khalil et al., (2018) [16] who study the knowledge, attitude and practices of rural mothers towards home injuries among children under 5 years of age in Menoufia District- Menoufia Governorate, Egypt they found that, there was a remarkable improvement in participants' level of knowledge as regards home injuries (causes, prevention, and first aid) after the program implementation ( $P < 0.001$ ) in comparison with that before the program. Also this study results supported by similar study conducted in Baghdad city by Abass (2019) [17], who studied "Mothers' knowledge of domestic accident prevention involving children" in Baghdad city found that mothers' knowledge about prevention of the four types of accidents studied was clearly deficient and need to health education program to raise their awareness.

Concerning the mothers' practices in relation to dressing care, site of wound and put sterile dressing (table 3), the current study illustrated that, there was a highly statistical significant between mothers' practice pre and post program intervention at  $p < 0.01$ . These findings were supported by, Gerelma et al., (2018) [18] in a study entitled " Patterns of burns and scalds in Mongolian children: a hospital based prospective study ", who found that, there was a highly statistically significant improvement in mothers' practice regarding dressing care, when compared with that before and immediately after implementation of training program. No relationship was found between the assessment of housing conditions and the surface of the burn, burn depth, the severity of burn and treatment ( $p > 0, 05$ ).

Regarding total score of the nurses' practices regarding dressing care (**figure 1**), the current study reflected that, more than two thirds of the studied mothers had inadequate level of practice regarding dressing care pre-intervention compared to the great majority of them post intervention and at follow up with highly statistical significant difference. These results were in accordance to some extent with Sobhy, (2017) [19], who studied "Impact of health promotion educational program for mothers about accident prevention and first aid for preschool children" at Benha City. Egypt, and reported that, the mothers' practices of first aid as regards dressing care for accident especially for children with burn were obviously improved and scored good after educational program intervention. Also this results supported by the study of Carlsson et al., [20], who study the "precautions taken by mothers to prevent burn and scald injuries to young children at home" they reported that, there was a highly statistically significant difference before and after intervention as regards mothers' practice.

Regarding total score of the mothers' practices regarding their practice for children with scalds burn at home **figure (2)**: the current study reflected that, more than three quarter of the studied mothers had inadequate level of practice regarding practices at home pre-intervention compared to less of fifth of them post intervention and at follow up with highly statistical significant difference. These results were in accordance to some extent with Kawalec & Pawlas (2020) [21] who documented that, the home environment can play a significant role in the circumstances leading to the accident. There is a need to address and identify home environment-related factors that may potentially prevent pediatric burn admissions to hospital. The awareness of mothers of small children about home care will reduce the risk of burns seems crucial in prevention. Also, burn injuries are often described as a consequence of children's developmental limits in the context of an unsafe environment.

## Conclusion

Based on the results of the current study, and the research hypothesis the following can be concluded more than two third of studied mothers had poor knowledge on pre-test. Meanwhile, the vast majority of them most of them had good knowledge on post-tests; also more than two third of them had average knowledge on follow up program. For this reason there were very highly statistically significant differences between mothers' knowledge on pre, post and follow up tests ( $P < 0.001$ ). There was a highly statistical significant between nurses' practice pre and post program implementation at ( $p < 0.001$ ). Also, there was statistical significant difference as regards their practice about home first aids pre and follow up of program implementation at ( $p < 0.05$ ). there was a highly statistically significant difference between mothers' behaviour about their children with scalds burn on pre, post and follow up program implementation at ( $p < 0.001$ ). There was a highly statistically significant difference between mothers' behaviour about their children with scalds burn on pre, post and follow up program implementation at ( $p < 0.001$ ) and there was a positive correlation between total mothers' knowledge, practices and behaviour scores pre-program implementation at ( $P \leq 0.001$ ) regarding scalds burn.

The home care program for mothers at home had an evident effect on improving the mothers' knowledge, attitude, and practices toward home care of their children with burn injuries.

## Recommendations

Based on the findings of the current study, the following recommendations are suggested:

- Emphasize the importance of conducted health education programs for all mothers, especially new parents, on home accidents prevention and first aid as a routine service at primary health care units and out patient's clinic at general hospitals.
- Increase the community awareness about home accidents prevention and how to provide first aid for children in emergency situations through mass media

- Publication and disseminations of the home care program in all health services to improve mothers' performance about the care children with burn.
- Training programs for mothers or parents about child safety at home and improve their skills about right and wrong habits.
- **Further research:** the importance of publication and disseminations of the home care program in all health services to improve mothers' performance about the care children with burn.

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